

THE FLICKER

VOLUME 10

MAY, 1938

NUMBERS 1, 2



Published Quarterly by

THE

MINNESOTA ORNITHOLOGISTS' UNION

MUSEUM OF NATURAL HISTORY

UNIVERSITY OF MINNESOTA

MINNEAPOLIS, MINNESOTA

CONTENTS

GREAT HORNED OWL	Stanley Stein	Frontispiece
CHUKAR PARTRIDGE IN MINNESOTA	G. N. Rysgaard	Page 3
A BITTERN USES ITS COLORATION	Charles Evans, M. D.	Page 5
NOTES ON MIGRATORY WATERFOWL	Horace Paul	Page 6
THE BIRDS OF FRENCHMAN'S BAY	Charles Reif	Page 7
NOTES OF INTEREST		Page 10
BANDING NIGHT HERONS	Russel Berthel	Page 11

THE FLICKER

Organ of the MINNESOTA ORNITHOLOGISTS' UNION
Published Quarterly in March, May, October and December
Edited by Charles Evans, M. D.
Minneapolis, Minnesota

Twin City Regional Editor..... Robert Upson, Minneapolis
St. Cloud Regional Editor..... Walter Heibert, Bingham Lake
Duluth Regional Editor..... Olga Lakela, Duluth Teachers College

THE FLICKER is sent to all members not in arrears for dues. Dues for all members, \$1.00 per annum, should be paid in advance to the secretary-treasurer.

All articles and communications for publication, and exchanges should be addressed to the editor.

OFFICERS OF THE MINNESOTA ORNITHOLOGISTS' UNION

President—G. N. Rysgaard, 1400 Capitol Avenue, St. Paul, Minn.

Vice-President—Mary Elwell, Duluth Teachers College, Duluth, Minn.

Secretary-Treasurer—Richard Voth, Teachers College, St. Cloud, Minn.

Editor—Charles Evans, M. D., 427 8th Ave. S.E., Minneapolis, Minn.



Photo by Stanley Stein

... before winter fully relinquishes its grasp, the great-horned owl lays its two or three eggs in an abandoned hawk or crow's nest high in a forest tree.

THE FLICKER

VOLUME 10 MAY, 1938 NUMBERS 1, 2

Chukar Partridge In Minnesota

By G. N. RYSGAARD

*This species is the latest game bird introduction
venture of sportsmen in our state.*

MINNESOTA adds another species to the roll of resident birds of this state with the recent introduction of the chukar partridge, *Alectoris graeca chukar* (J. E. Gray.)

The introduced chukar partridge represents one of the twenty-two subspecies of *Alectoris graeca*, a wide-spread species occurring in three continents, Europe, Asia, and Africa. The various subspecies are sporadically represented over the general range which extends from the Alps southward through Italy and Sicily eastward along the northern border of the Mediterranean Sea, including Hungary, Bulgaria, Greece, several islands in the Aegean Sea, Turkey and Russian lands bordering the Black Sea, southward into Syria, Iraq, Persia, and Egypt, and eastward and northward to embrace India and the greater portion of China. With such wide-spread distribution, including great variation of habitat, it is easy to realize the cause for the great number of existing varieties or subspecies.

The homeland of the subspecies *chukar*, recently introduced into our state, is the southern slope of the Himalayan Mountain Range from eastern Ladak to Nepal, India. Sometimes the name Nepal partridge is attached to this bird, the name presumably derived from the name of its

native homeland. Stuart Baker, in *Fauna of British India*, lists such vernacular names as chukar, kabk, kau-kau, chukru, and zarkar.

The plumage coloration of the two sexes is identical; the back is nearly sepia brown, the anterior portion brownish drab, with the rump and tail deep grayish olive in the fresh fall plumage. Across the white throat extends a black band which bends in a forward arc through the eyes to meet across the frons. The grayish flanks are conspicuously barred with black and brown; the beak and feet are red. Chicks in down have bright rufous crowns, pale fulvous colored backs with four stripes of speckled rufous and black, and their rufous wings are mottled with pale fulvous. They are pale fulvous below, being darker on the chest.

The nest is generally a mere hollow scraped in the ground under the shelter of stones, fallen trees, and such natural shelters. It is the male which customarily digs the nest hollow and lines it with dry grass and leaves. In some instances the nest is not lined. In Minnesota the nesting activities are begun in middle April at which time, according to Frank Blair, the male may be distinguished by his extended neck sacs. In India the activities of breeding and nesting commence in April or as late

as September, the time being dependent on the altitude at which they live. The chukar partridge hen lays about fourteen eggs to the clutch, although as many as twenty have been recorded from a single nest. The eggs are yellowish-white freckled with reddish-brown and pinkish-purple and in size average 1.68 by 1.26 inches. The incubation period is twenty-four days, and the young are fully fledged by mid-August. The birds become very pugnacious during the breeding season, and they may be heard calling loudly from their territories. Hume syllabifies the call of the chukar as "I'm here, I'm here; who's dead, who's dead; oh lor, oh lor."

The food of the chukar includes such diet items as insects, worms, reeds, leaves, green shoots, and some types of roots; but seeds form the main portion of their food supply. In a few instances the birds have been seen budding in alders, but observations so far indicate that budding is not a customary habit among them.

The Minnesota program is not the first attempt at introduction of this bird in the United States. J. C. Phillips writes, "In some old correspondence of Henry Oldys with Gustav Walter, of New York, mention is made of some trials with chukars in both Massachusetts and Nova Scotia."¹ The states of California and Oregon within recent years have both witnessed successful introduction of the Indian chukar. The California Game and Fish Division purchased their first chukars directly from Calcutta, India in 1928. In 1932 the first releases were made with the liberation of birds in twenty-six counties; by the end of the year, 1936, 4,600 chukars had been released and all indications show the project to be a success.

The Minnesota State Game and Fish Division purchased seven hundred eggs from an Oregon breeder in the spring of 1937. These eggs were incubated at the Carlos Avery game farm, and seventy per cent of this total hatched. Four hundred

and thirty birds were reared to maturity.

The first release of chukars was at Fairmont, Minnesota on September 3, 1937 when fifty birds were given their freedom. Similar releases of forty birds each were made at Rochester, Fergus Falls, Grand Rapids, Pine City, and the Carlos Avery Game Refuge. Reports at the present time, March, 1938, show about fifty percent mortality and that they are doing as well as did the first releases of ring-necked pheasants in Minnesota. One hundred pair were retained at the Carlos Avery game farm as breeding stock, and it is the hope and expectation of the Game and Fish Division to release two thousand birds this fall in various portions of the state.

The chukar partridge is a most adaptable variety. In *Indian Sporting Birds*, Hume states ". . . in one place it faces a noonday temperature of 150 degrees F., in another braves a cold, about daybreak, of a little above zero; here it thrives where the annual rainfall exceeds 100 inches, and there it flourishes where it is practically arid." It inhabits naturally an area which ranges from sea level to 16,000 feet and thrives in habitats from grassy hill-sides in low valleys of high temperature to brush country and amongst the snow caps of the high mountain altitudes. August Bade states that California's experiment with this partridge indicates that a dry climate with an altitude range from 1000 to 4000 feet is the most favorable and successful environment for the chukar. The average elevation of Minnesota is 1,275 feet above sea level, and the highest point being located in the "Sawtooth Mountains" in Cook County where the elevation above sea level reaches 2,230 feet. The adaptability of the chukar in combination with the more than moderately favorable environment of our state should result in a successful introduction. Introduction of a foreign species by securing and incubating the eggs, as was done in this instance, eliminates the danger of introducing parasites and disease. Any such introduction presents itself as a most complex problem, and it is well to study the problem from all visible angles before

¹. *Wild Birds Introduced or Transplanted in North America*, John C. Phillips, Tech. Bulletin No. 61, April, 1928, U.S. Department of Agriculture, Washington, D.C.

taking definite steps at introduction. It may be that this bird, being placed in an entirely new environment as it is, will fall victim to some disease mild among our native species but lethal to unimmunized birds. What reaction the presence of this newcomer will produce among our native species remains to be seen.

SOURCE OF INFORMATION

- Anon, "A New Game Bird for Minnesota," *Minnesota Conservationist*, Sept., 1937.
- Bade, August, "The Chukar Partridge in California," in *California Fish and Game*, Vol. 23, No. 3, pp. 233-236 (July, 1937).
- Bade, August, "The Chukar Partridge in California," in the Second North American Wild Life Conference, *Transactions*, pp. 485-489 (1937). —
- Baker, Stuart, *Fauna of British India*, Vol. 5, Taylor and Francis, London, 1922-1930, pp. 402-404 (Second Edition).

Blair, Frank, Correspondence to the author, (March, 1938).

Hellmayr, Charles, *Birds of the James Simpson-Roosevelts Asiatic Expedition*, (Zoological Series, Field Museum of Natural History, Vol. 17, No. 3, Publication 263—Chicago, 1929), pp. 136-138.

Peters, James, *The A.O.U. Check-List of North American Birds*, Vol. 2, pp. 65 (1934).

Phillips, J. C., *Wild Birds Introduced or Transplanted*, Technical Bulletin No. 61 pp. 34. (United States Department of Agriculture, 1928).

Shave, E. L., "Chukar Partridge in Minnesota," *Minneapolis Tribune*, March 4, 1938.

True, Gordon, Jr., "The Chukar Partridge of Asia," *California Fish and Game*, Vol. 23, No. 3, pp. 229-231 (July, 1937).

St. Paul, Minnesota

A Bittern Uses Its Coloration

By CHARLES EVANS, M. D.

AN OBSERVATION of the bittern's use of its protective coloring was made on May 16, 1928. We flushed a pair of bitterns whose courtship we had been watching earlier in the day. One lit among some quill reeds which formed a narrow point projecting from the main mass and were not dense enough to conceal the bittern. There it crouched low with its body close to the ground, its neck stretched straight up, its beak pointed toward the clouds.

We walked towards the bird. As it had not flown by the time we were close enough to get an excellent view of the front of its neck and breast, which were toward us, we decided to try a little experiment.

We went off of our path at an angle or about forty-five degrees, instead of continuing directly toward the bird. We had walked about half the distance necessary to get a full side view of the bittern when it raised itself just enough to take one step in our direction and squat down again with the protectively striped front of its neck facing us once more. The bird would have been much more conspicuous from a side view, and apparently considered this danger sufficient to offset the risk of attracting attention by moving enough to turn its least conspicuous side towards us.

Minneapolis, Minnesota

Notes On Migratory Waterfowl

By HORACE PAUL

EACH YEAR, during recent years, certain members of the Minnesota Bird Club have made a trip to the western part of our state to watch the migration of geese through that region. Sometimes they have found rain and sometimes snow. Usually the trip is made a little later than this, but because of the early spring, the date this year was moved ahead to the week-end of April second and third.

On the morning of April 2, 1938, assembled on the shores of Big Stone Lake at Ortonville, Minnesota, was a small group of slightly chilled bird students. We had been told that the geese would be very numerous, so our first view of the lake was a distinct disappointment; the geese were conspicuous only by their absence. A small flock of pintails flying low overhead told us that there were ducks to be seen, however; so we started a leisurely trip up the east shore of Big Stone Lake, pausing to examine small flocks of ducks as we went along. These proved to be pintails, mallards, and American mergansers, with a pair of canvas backs and a lonesome Canadian honker thrown in to break the monotony. Then the eagle-eyed member of our party sighted a thin wavy line on the horizon that proved to be a large flock of geese. They were so far away, however, that it was impossible to identify them. We reached Browns Valley about 7:00 A.M. and phoned friends in Wheaton for information. From them we learned that the geese were congregating at the north end of Lake Traverse. A few minutes later we arrived at the place designated, where we met the game warden, who very obligingly offered to show us where we could find the geese.

The game warden immediately produced results. Between the road and the lake was a corn field nearly a thousand feet in extent, and feeding on the remains of

last year's crop was a flock of at least a thousand geese. We stopped and stared in amazement. Fifteen minutes before we had been straining our eyes through binoculars to see a flock five miles away; now we had ten times as many feeding within a hundred feet of the car. The flock was a mixed one of blue and snow geese. The former outnumbered the latter about four to one. We found several other feeding grounds. In every case they were fields where the geese were feeding on the remains of the previous year's corn crop.

Our first act, after thanking our guide for his courtesy, was to make our way across the low lying meadow and into the quill reeds that border the northern tip of Lake Traverse. Here the entire area was swarming with geese and ducks. Up to this point we had seen between ten and fifteen thousand geese, all of which were either blue or snow geese. We had seen many more geese than ducks. On this northern end of Lake Traverse, however, we flushed a very large flock of pintails. It was impossible to make an accurate estimate of their numbers even in terms of hundreds. Suffice it to say that for a time they seemed almost as numerous as the geese. To add a little variety to the thousands of geese and hundreds of ducks, we found a snowy owl perched on a hay stack about two hundred yards from the lake. He looked very much out of place there, and, at first glance, we mistook him for a herring gull. Farther down in the quill reeds we found Mr. Breckenridge, of the University Museum staff, setting up a blind from which to take pictures. He told us he had seen a few white-fronted geese and a small flock of sandhill cranes fly overhead earlier that morning. This, together with information from the game warden about feeding grounds of the cranes some twenty miles north of

this point, was of considerable interest concerning the distribution of this very rare bird.

It is the custom of the geese to feed in the fields in the morning and evening. The remainder of the time they spend on the lake. This being the general rule, we wasted no time looking for them after they returned to the lake, but followed them in the car when they arose. They descended and settled on a small lake nearby. Mud Lake, as it was appropriately called, was just a wet spot in the center of an extensive swamp. The swamp grass had been cut for hay so often that the ground had dried enough to support a car. We decided to drive as near the geese as possible, as they do not fear a car as much as they do a man who is walking. With a little care, we succeeded in driving within two hundred feet of them as they stood on the shore of Mud Lake. It was a splendid chance to study the geese as they stood clustered four or five deep along a quarter of a mile of lake shore. Here again the blue geese outnumbered

the snow geese about four to one. After we had studied them for about a half an hour, a flock of six Canada geese flew in. We watched them for another hour before leaving. One thing of interest was the wide variation between individuals of the blue geese as to both size and color. Some of them had only a little white on their heads while others had white heads and necks as well as much white on the body.

On the following morning we resumed our field work by making a study of all the small ponds and slough holes we could find. We found ducks to be quite numerous. There were mallards and pintails in abundance, shovelers, scaup, and redheads in fewer numbers, and a couple of coots. Because of inclement weather we headed home, happy in the knowledge that there are still a few geese in Minnesota.

Nathan Mahon, George Rysgaard, Arnold Erickson, and Horace Paul made the trip.

St. Paul, Minnesota

The Birds Of Frenchman's Bay

By CHARLES REIF

FRENCHMAN'S Bay, so called because of the men who first explored this region, lies between Mount Desert Island and the Schoodic Peninsula, some hundred odd miles down the Maine Coast from Nova Scotia. Associated with it are other French-named places such as Cadillac Mountain, Sieur du Monts Spring, and Lamoine Beach. The bay is indented by many coves and inlets. Altogether it is some forty square miles in area. The tides which run into the bay have a mean of over twelve feet; during low tides many of the coves are not under water. Some of the exposed areas are covered by *Fucus*, a brown seed weed alga, and others are extensive mud flats bordered by

mussel beds. The aquatic marine flora and fauna of the bay are both abundant and varied, and although we were at the University of Maine Biological Station during the months of July and August primarily to study the marine invertebrates, it was possible during the numerous field excursions and fishing trips to observe some of the birds living at Frenchman's Bay.

The most common and colorful bird on the bay was the herring gull. One was never out of sight of these large birds. They paddled about in the eddies, perched singly on the wharf piles, or congregated on the rocks. Frequently they would leave the congregation and travel off by

themselves. It seemed to be particularly at meal time that they came in from their solitary expeditions. There is a large rock in the bay on which they sat much of the time, and over the bay for a mile around were single gulls. It appeared as though these individuals served as sentries or watchers, to announce to the others the presence of a school of small fish near the surface, or to tell of a fishing boat throwing scraps overboard. When there was food to be had, the whole crew of them would gather together to partake of the meal. We always had a few fish cut up for the purpose of feeding the gulls. Their movements in picking up food from the surface were interesting to watch. It was surprising to see the huge chunks they swallowed; and no matter how much they had eaten, they came back and vied keenly for more. It was evident that once a gull had made a fair catch, the others left him alone. Occasionally the younger birds squabbled, but never did the adults.

When the tide was out, the gulls went over to the exposed flats in Raccoon Cove. Sometimes they scouted around in the *Fucus* beds for rock eels, or dug in the mud for worms. But their biggest feasts were on the *Mytilus* mussels. At low tide they were able to select small, weak-shelled mussels. Large clams, snails, or crabs with shells too tough for the gulls to break with their bills were carried aloft and dropped on the rocks. Our ancient wharf was covered with the shells of many animals broken in this manner. Even after the tide had begun to come in, several of the gulls still paddled about over the beds and bobbed for mussels. Marine animals were not their only food, for they were often seen inland, either grazing in the meadows or following the pigs in some barnyard. The ridge of one barn was a favorite evening roosting place of theirs. While some were on the roof, others fed on the ground. Occasionally they were seen foraging over freshly plowed fields. Herring gulls are protected by law because they are scavengers.

Long Porcupine, a narrow island about

a mile long, and several other islands cut Frenchman's Bay off from the open sea. Its southern granite cliffs are continually exposed to the washing of the ocean swells. The eastern end of the island is the site of a great blue heron colony. This colony is reported to be one of long standing, and conditions around the nests indicate that this is true. It was estimated that close to fifty nests were occupied in the summer of 1937, all of which were built in spruce, the dominant tree on the barrier islands. Adult birds were observed in all parts of the bay during hours of sunlight, and it was not uncommon to see or hear them in the night. The herons were always present on the exposed flats during periods of low tide, searching for food. It was not possible to study stomach contents to determine whether there were any special groups preyed upon, but it is probable that they sought out stranded rock eels and lump fish. The herons were not seen feeding in any of the freshwater places about the bay. It is interesting that although the great blue heron feeds on freshwater animals in its inland range, it prefers saltwater forms where it has its choice of either.

The conditions of their habitat on Long Porcupine are more severe than those inland. For days the island is enshrouded in fog which is always accompanied by temperatures of fifty degrees or less, and even on clear days the sea breezes keep Long Porcupine definitely cool. The water coming in with the tides was usually below fifty degrees Fahrenheit. On very hot days when the sun was bright it did get into the sixties on the lee side of the island. Despite this factor of a uniformly low temperature, the young herons were ready to leave their nests by the last of July. During the breeding season the adult birds generally stayed within five miles of the rookery; however, it was not uncommon to see them in the upper reaches of the bay, ten miles from Long Porcupine.

Cormorants were very numerous in the bay, where the natives called them *shags*. The cormorants did not fly so extensively

as did the gulls, but they were often seen skimming over the water in groups of six to ten. Their flights consisted of a series of changes of altitude from three or four feet to fifty feet as they circled over the bay. Apparently they maneuvered about thus for the joy of doing so.

One could always count on seeing a cormorant perched atop each buoy post. During low tide many of them flew over the big rock in the middle of the bay and stood on the less desirable portions, the best places having been appropriated by the herring gulls. The gulls dominated the rock, and forced the cormorants to seek less desirable roosts when lower portions of the rock were not exposed during low tide.

On Small Porcupine Island, the barrier island adjacent to Long Porcupine, nested a pair of ospreys. These birds raised a family during the summer. The appearance of the nest indicated they had maintained themselves in that location for several years, despite the proximity of a pair of bald eagles. The eagles nested a half a mile away on Long Porcupine, midway between the osprey's nest and the heron colony. They, too, raised a family in the summer of 1937.

The ospreys were often seen in the upper reaches of the bay during low tide. There they fished for flounders, which they carried with the flat axis horizontal. The dark side of the fish was always uppermost. Once an eagle was observed to force an osprey to drop a flounder it was carrying; but the fish fell with such a queer motion that the eagle could not retrieve it. The eagles were never seen fishing, but upon several occasions five ospreys

were observed simultaneously wheeling above the tidal flats, searching for fish.

During the last of August there was an influx of great numbers of shore birds. In the evening, during low tide, one often flushed great bands of them, which then wheeled about and disappeared in the dusk. Least sandpipers and semi-palmated plovers were frequently seen in flocks of a hundred or more. When the tide was out they were found in the exposed patches of Fucus seaweed, evidently feeding upon the countless *gammarid* crustaceans stranded there.

Once a group of five black-backed gulls was observed, and on a trip twenty miles offshore, we saw several flocks of Mother Carey's chickens. A single green heron was seen once at the head of the bay, and a group of common terns was seen several times near one of the fish wiers.

During a few trips inland, I found many birds. On quiet evenings when an off-shore wind was blowing, it was possible to hear the songs of the veery, whip-poor-will and wood peewee coming from the woods. And where meadows bordered the salt water swallows and swifts were always to be found whirling about. There was, therefore, an evident line of division between the zone inhabited by many species of birds represented by but an average number of individuals and the zone inhabited by a few species represented by many individuals. The coast of Maine is truly a 'stern and rockbound coast'. It is only such hardy and cosmopolitan birds as the herring gulls and the cormorants that find this habitat liveable. The very paucity of species there is thus a point of interest.

Minneapolis, Minnesota



There is no trifling with nature; it is always true, grave, and severe; it is always in the right, and the faults and errors fall to our share. It defies incompetency, but reveals its secrets to the competent, the truth, and the pure.—Goethe.

BANDING RETURNS

A BROAD-WINGED buzzard banded for the National Association of Audubon Societies on July 18, 1937, at Fort Snelling, Minneapolis by Bob Upson was killed near Savanna, Illinois on September 11, 1937. A marsh hawk banded on June 25, 1937, near Minneapolis by Bob Upson, was killed at Jamaicatown, Havana, Cuba, on January 26, 1938.

WINTERING BIRDS

MR. E. D. SWEDENBORG observed several noteworthy species wintering near Minneapolis. At least five Wilson's snipe spent the winter at Nine Mile Creek, and another wintered at the Bass Pond; one was seen at Purgatory Creek, in Eden Prairie, on January 15. During the early part of the winter great horned owls were numerous. A belted kingfisher, which was seen several times during December at Nine Mile Creek, was last seen on January 22. Horned larks were first seen on January 23, and have since become numerous; one was seen performing its flight song on February 27. The first crows were seen on January 29; they are now numerous. A red-breasted nuthatch and a robin wintered at the Bass Pond. A flock of about twenty-five cedar waxwings was seen at the Lake Harriet bridle path on February 13, and has remained there. Redpolls were not numerous in Minneapolis this winter. On January 22 a goldfinch was seen at the Bass Pond, another was observed near Excelsior on February 27.

At least two, and probably three, song sparrows survived the winter near Minneapolis. One was seen at the Bass Pond on January 12, and again on February 22. On December 26 a song sparrow was noted at Nine Mile Creek, and again on February 12. Another, which may have been the same one seen on February 12, was noted four miles farther along Nine Mile Creek on February 20. Brown creepers, purple finches, slate-colored juncoes, and tree sparrows were numerous this winter, but snow buntings were seen only twice; one was seen on January 12; and a small flock was seen on January 23.

Dana Struthers and Ward Zimmerman observed an interesting flock of redpolls on February 22. The redpolls were in a small birch thicket; all were singing a goldfinch-like song, and many had rosy underparts.

Banding Night Herons

By RUSSEL BERTHEL

IN THE spring of 1936 Keith Larson began work on his master's thesis, "The Black-crowned Night Heron (*Nycticorax nycticorax hoactli*)"; and the writer obtained a banding permit—sufficient reasons for us to band as many night herons as possible.

We began operations on July 6 in the heron rookery at County Road C and Dale Street in northern Ramsey County, which contained about a thousand breeding birds. Larson counted 450 occupied nests, which were located from fifteen to thirty feet from the ground in tamarack trees. Since many of the trees were difficult to climb and all were filthy, with their branches festooned with decomposing frogs, fish, and other regurgitated heron food, we thought it best to borrow a ladder from a farmer near by. We finally found one with a few rungs still in place and set to work.

About fifty percent of the birds were too old to band; that is, they could fly, and we could not catch them. About five per cent were just getting their pin feathers; and these we banded at a later date. It was the banding of the intermediate forty-five percent that was our immediate objective.

The herons struggled considerably, and were very difficult to hold; many of them pecked with open bills at our eyes, the bright spots in our dirty faces. They were unable to draw blood; and they never speared at us with closed bills—which herons have sometimes been accused of doing. Under these conditions we found it more satisfactory to take the birds to the ground to band instead of banding them at the nests.

Birds that were not too large were taken from the nests and placed in a pail, which was lowered on a rope to the bander below. Larson found that the young birds would not climb out of the pail if there

were a few sticks in the bottom that they could grasp with their feet. When we started banding we climbed the trees and put the banded birds back on their nests. Later we found that this was unnecessary. If a banded heron was placed in the lower branches it would soon climb to the nest.

If the birds were out of the nest and in small trees, a quick, vigorous shake would usually dislodge one or more of them; sometimes we drove them from large trees into smaller ones, from which they could be more easily shaken. We then chased them through the brush—and they ran surprisingly fast. Most of the young birds were almost able to fly. If a heron glided to a large tree, it would hang onto a branch with bill and feet, often upside down, and no amount of shaking would dislodge it. If we attempted to climb the tree, the heron would climb higher, and usually faster than we could. This was the more exasperating because its method of climbing was so awkward. It would grasp the branch above it with its bill, flapping its wings and twisting itself out of shape, and finally would grab the branch with its feet; then, with much teetering and flapping, it would reach up for the branch above. We were usually a branch behind. In fact, these herons have the climbing ability their ancient ancestors are supposed to have had. Fortunately for us they lacked the climbing claws of the *Archaeopteryx* on their wings.

An efficient means of defense used by the young herons was to regurgitate food in the general direction of the intruder. They were not particularly good shots, but they did not have to be. The semiliquid food would trike the tree limbs on the way down and spatter in every direction. Even after hours of banding it was a moot question whether to look up and attempt to dodge, or to pull your hat down, bow your head, and hope for the best.

A night heron two-thirds grown is a hardy bird. As far as we were able to determine, there were no deaths due to banding operations. We found only three dead herons, all of which were unbanded; they may have been killed by boys with BB guns, who were reported to have been in the vicinity.

We banded on July 6, 7, 16, and 24, 1936. We climbed thirty-four trees, in which there were ninety-four young herons, or about 2.76 birds per tree; of these we were able to catch and band sixty. In 1937 the writer was out of town during the banding season; but Larson banded thirty-five young herons.

Up to the present time we have received four returns. One bird was shot in October, 1936, near Pine City, about fifty miles north of the colony; two were found dead in the same month near Wyoming, about twenty miles north of the colony—evidence that immature blackcrowns go north temporarily, as do the immature of many, perhaps all, species of herons. A fourth heron banded at the same time was found dead just a year later, in October, 1937, at Pinar del Rio, Cuba. Do all the adult birds go south after the breeding season, at the same time the young are going north?

It may be of interest to note some returns from black-crowned night herons banded at other stations, as recorded in the issues of *Bird Banding* since 1923:

Two herons banded at Barnstable, Massachusetts, on June 16, 1923, were recovered; one in Lee County, Florida, on December 25, 1923; and the other at White Oak River, North Carolina, on October 9, 1923. Another banded at the

same place on June 15, 1924, was recovered at Key West, Florida, on November 17, 1924. A heron banded at Webster, South Dakota, on July 3, 1931, was found at Havana, Cuba, on the following October 25th; one banded at Barr, Colorado, on June 21, 1930, was recovered on December 1, two years later, at Vera Cruz, Mexico; and another banded at East Springfield, Massachusetts, on June 18, 1932, was taken in Liberty County, Texas, on November 29 of the same year. On February 19, 1926, upon investigation of interrupted telephone service between Sebring and Okeechobee, Florida, a heron that had been banded at Boston on June 19, 1925, was found hanging between two wires. Of three herons banded at Harrisburg, Pennsylvania, one was found dead in Pinar del Rio Province, Cuba; one at Smyrna, Delaware; and the other at Neversink, New York.

Some interesting returns may also be noted for other species of herons. A great blue heron banded at Waseca, Minnesota, on May 23, 1925, was recovered at Gutan Lake, Panama, in September of the same year. A great blue banded at St. John's Michigan, on May 21, 1933, was found at Corozal, British Honduras, on February 29, 1936; and one banded at Hat Island, Green Bay, Wisconsin, on July 18, 1931, was recovered at Point Cormenal, Cuba, on February 9, 1932. A little blue heron banded on June 9, 1931, in Charleston County, South Carolina, was recovered in the same locality in the stomach of an alligator on October 8 of the same year.

St. Paul, Minnesota



Persons finding hawks and owls nesting are urged to report them to George Rysgaard or Russel Berthel, so that the young birds might be banded.

THE FLICKER

VOLUME 10

DECEMBER, 1938

NUMBERS 3, 4



Published Quarterly by

THE

MINNESOTA ORNITHOLOGISTS' UNION

MUSEUM OF NATURAL HISTORY

UNIVERSITY OF MINNESOTA

MINNEAPOLIS, MINNESOTA

CONTENTS

MARSH BIRD COMMUNITY STUDY	C. Hero	Page 1
WARBLER MIGRATION NOTES	K. Carlander	Page 3
1938 MINNESOTA NESTING RECORDS	A. Erickson and R. Upson	Page 4
NOTES OF INTEREST		Page 13
GROUSE OBSERVATIONS	A. Erickson	Page 14
THE TRAGEDY OF TWO YOUNG LOONS	J. P. Jensen	Page 15

THE FLICKER

Organ of the MINNESOTA ORNITHOLOGISTS' UNION

Published Quarterly in March, May, October and December

Edited by Charles Evans, M. D.

Minneapolis, Minnesota

Twin City Regional Editor	Robert Upson, Minneapolis
St. Cloud Regional Editor	Walter Heibert, Bingham Lake
Duluth Regional Editor	Olga Lakela, Duluth Teachers College

THE FLICKER is sent to all members not in arrears for dues. Dues for all members, \$1.00 per annum, should be paid in advance to the secretary-treasurer.

All articles and communications for publication, and exchanges should be addressed to the editor.

OFFICERS OF THE MINNESOTA ORNITHOLOGISTS' UNION

President—G. N. Rysgaard, 1400 Capitol Avenue, St. Paul, Minn.

Vice-President—Mary Elwell, Duluth Teachers College, Duluth, Minn.

Secretary-Treasurer—Richard Voth, Teachers College, St. Cloud, Minn.

Editor—Charles Evans, M. D., 427 8th Ave. S.E., Minneapolis, Minn.

THE FLICKER

VOLUME 10

DECEMBER, 1938

NUMBERS 3, 4

Marsh Bird Community Study

By CASIMIR HERO

A Preliminary Ecological Investigation of the Minnesota Point Sand-fill

A COLONY of red-winged blackbirds populating a cat-tail march on Minnesota Point provided an opportunity for the study of their nesting activities. The marsh is situated on a sand-fill of over twenty-nine acres along Oatka Beach Addition about three miles from the Duluth Canal. The sand-fill was made during the summer of 1935 by the United States Engineering Department. Consequently, the vegetation covering this area, chiefly a *Salix-Typha* community, is only three years old. Approximately, one-half of the total area is under water, its depth varying from six inches in the border of willows to three feet in the cat-tail marsh bordering Superior Bay.

A preliminary search for nests was made on the fourth of June resulting in the finding of thirty nests of which twenty-eight were those of red-winged blackbirds, and two of sora rails. These promising results stimulated the author to a more thorough search of the marsh. On June 8, thirty-one additional nests were found; each trip added to the list, reaching the total of 107 nests on July 25.

The nests were marked and plotted. They were regularly observed for records, every two or three days.

The nests of the red-winged blackbirds were woven of grasses and sedges in

clusters of cat-tails, usually from six inches to three feet above the water level; a few were built in species of leafy bullrushes. At least one nest had a lining of horse hair. The eggs varied from 2 to 5 in a nest. The ground color of the eggs shaded from blue to almost white.

The nests of the sora rails were of coarse rushes and cat-tail leaves, packed down tightly, and built down to or slightly above the water level. The canopy covering was constructed by bending and packing ends of cat-tails leaves in the body of the nest. The eggs were spotted with dark down and purple in contrast with the ground color varying from light brown to buff. The eggs, as many as twelve per nest, were often in two tiers. The nests of Virginia rails were similar to those of the sora rails, but were of finer rushes and sedges; their eggs were white with scattered dots of brown and purple.

Killdeer and song sparrows nested on the drier parts of the sand-fill. The nests of killdeer were in sand among clumps of willows; four of the eight song sparrows' nests were built in depressions of sand, one, in a leafy bullrush, and three, in clumps of leafless rushes. Several of the song sparrows' nests were parasitized by the cowbirds.

It was not possible to obtain a complete record for any given nest, but the frequent trips for records brought many an opportunity for close observation of these birds. With a group of children the author witnessed the hatching of the four killdeer eggs in one nest. It was interesting to note the various calls of the shy rails, sometimes within hand's reach, and unaware of the observer. The young of the Virginia rail were not seen, but those of sora rail were numerous, and entertaining in their coat of coal-black set off by a touch of red on the forehead at the base of the mandible, and a patch of yellow on the throat. They swam easily, and with their long, slender toes clung to vegetation at the waterline.

Several young of sora rails were found dead. One was found dead on an elevated sand strip near nest No. 46; another, in nest No. 31, seven days after the nest became empty. This young was about a week old. A puzzling situation developed with the appearance of new nests in July. There were nine of them in all, and no eggs were observed in them at any time. In one of these new nests, No. 96, three young sora rails were found dead,

The young in the last egg of a set of twelve in nest No. 31, died while attempting to crack the shell open. One egg found in water at the nest No. 29, contained an almost fully developed young.

On June 14, the high water level in Superior Bay caused the water in the marsh to rise about two inches. The result was disastrous to the nests of the red-winged blackbirds built low on the stems. One nest had about one-half inch water at the bottom. The female did not abandon it; and through her persistency in incubation, two of the three eggs hatched, after the lowering of the water level. The casualty in nest No. 64, was caused by the tipping of the nest by the growing cat-tail on which it had been built. Of the two young, only one survived. It was seen to leave the nest. Nest No. 32 contained a cowbird's egg and three red-winged blackbird's eggs. The cowbird's egg hatched one day earlier

than 2 of the redwing's own eggs. When the three young were growing feathers, some predator killed them and partly devoured them.

In addition to the five species which nested on the sand-fill, several others were observed feeding there from time to time. Along the bay shore and in the marsh were blue-winged teal, lesser scaups, great-blue heron, least sandpiper and yellow legs. Flying over the area were common and black terns, and large flocks of tree swallows. Spotted sandpipers with young were observed, but their nests were not located. In the willows were veerys, yellow warblers, robins, cowbirds, chipping and English sparrows. These birds were obviously attracted by an abundant insect life. The area passed through insect invasions. The steel-blue leaf eating beetles with their larvae over-run the area. Several other species of *Coleoptera* were observed, including the carrion beetles found feeding on dead young of red-winged blackbirds. From July 14-25, the area was covered with *Ephemeridae*; Species of *Odonata* were also abundant, and *Lepidoptera* of which the larvae of the mourning cloak stripped the willows of their leaves. A parasitized cocoon of *Samia cecropia* showed the probable presence of many others of its kind.

Marsh hawks have been observed frequently. They are attracted there probably by the great number of field mice which nest in the marsh and the rabbits which live in the willows.

This study of the marsh bird community has revealed a definite balance of plant and animal forms in a developing plant community. The following summaries are the results of the observation:

RED-WINGED BLACKBIRDS

Agelaius phoeniceus archtoleugus

Sixty-nine nests contained eggs or young.	
No. of eggs hatched	193
No. of eggs unhatched	30
Eggs broken before incubation	22
Total No. eggs in nests	245
No. of young old enough to leave nest	131
No. of young dead	28
No. young disappeared too young to leave nest	10

No. young with unknown outcome --- 24
 Total No. of young193

SORA RAIL

Porzana carolina

Seven nests contained eggs.
 No. of eggs hatched 53
 No. eggs unhatched 6
 No. eggs with outcome unknown 2
 Total No. eggs in nests 61
 No. young alive and unknown young 47
 No. young dead 6
 Total number of young 53

Date	Nest No.	Eggs	Young
June 4	14	5	0
June 4	29	7	0
June 7	31	12	0
June 8	46	11	0
June 8	48	10	0
June 12	70	4	1
June 16	78	12	0

VIRGINIA RAIL

Rallus limicola limicola

Three nests contained eggs.
 No. of eggs hatched 18
 No. eggs unhatched 1
 No. eggs broken before incubation 8
 Total No. eggs in nests 27

*No young found dead; no young seen.

Date	Nest No.	Eggs	Young
June 8	39	4	0
June 16	75	10	0
July 4	100	8	0

SONG SPARROW

Melospiza melodia melodia

Eight nests were found.
 No. of eggs hatched 10
 No. eggs unhatched 3
 No. eggs broken before incubation 5
 Total No. eggs in nests 18
 No. young old enough to leave nest 10
 No. cowbird eggs in nests 5

Date	Nest No.	Eggs	Young
June 10	67	3 & 1 cowbird	0
June 16	74	1 cowbird	0
June 16	76	2 cowbird	0
June 23	83	1 cowbird	0
July 2	98	3	0
July 7	86	4	0
July 9	104	2	2
July 20	104	0	4

The author wishes to extend thanks to the members of the Duluth Bird Club for material aid in the study, and to Dr. Olga Lakela for advice and criticism in the final checking of the results.

Duluth, Minnesota

Warbler Migration Notes

By KEN CARLANDER

ALTHOUGH I was birding less this last spring than in previous years, I did see an unusually large number of warblers. The first "wave" that I observed was on May 7th near Stillwater, Minnesota and included, besides the more common species, magnolia, black-throated blue (an early date), black poll, and Canada warblers. Bay-breasted and parula warblers were observed at Mille Lacs, Minnesota on May 14th. Cape May warblers seemed unusually abundant in several localities. The prothonotary warbler was seen at Frontenac, Minnesota on May 20th.

In Houston County, in the southeastern corner of the state, on May 20-23, I found two warblers that are seldom reported from

this state, the blue-winged warbler and the yellow-breasted chat. The former was found on the wooded and thicket-covered hillsides. It had a very characteristic insect-like call which reminded me of the call of the clay-colored sparrow except that the blue-winged warbler's call was much higher pitched and thus even more insect-like in quality. The calls of the yellow-breasted chats, in the bottomlands, were varied and loud in contrast to the blue-winged warbler's calls. The most characteristic call note was a single whistle alternating with a loud squeek, not unlike a pump handle in need of oiling. These two warblers were the most abundant warblers in the county.

1938 Minnesota Nesting Records

By A. B. ERICKSON

ROBERT UPSON

THIRTY-TWO members of the Minnesota Ornithologists' Union submitted nesting data on a total of 130 species of birds. All in all, 368 separate observations were made. The localities from which nesting data were gathered, 76 in number, are distributed in all parts of the state.

Several of the records are of such importance as to require special attention. A colony of American Egrets, for example, found nesting at East Chain Lake near Fairmont, was reported by Dr. G. H. Luedkte. Dr. T. S. Roberts published a brief account of this colony in *Bird-Lore* for September-October 1938. Four nests of the White Pelican, the first in many years for the Minnesota area, were found by G. A. Swanson on the Ontario side of Lake of the Woods. The Yellow-breasted Chat, long suspected as being a Minnesota nester, was definitely placed on the list when R. M. Berthel collected a nest with 4 eggs in Houston County. Previous to this year there was only one record of the actual finding of a nest of the Pine Siskin. Richard Voth, Walter Hiebert, and other members of the T. S. Roberts Ornithology Club of St. Cloud increased this number by locating several nest at St. Cloud. Other unusual records of nesting pertain to Swainson's Hawk, Piping Plover, Upland Plover, Ruby-throated Hummingbird, Alder Flycatcher, and the Grasshopper Sparrow.

In each case the species, locality, date, eggs or young, and the observer have been listed.

COMMON LOON. At Lake Itasca on August 1 Gustav Swanson saw 2 young of this species.

HOLBOELL'S GREBE. In Beltrami County on June 17, Oscar Owre and Bob Upson found a nest with one egg; at

Lake of the Woods on July 22, Gustav Swanson saw several broods of 5-7 young. The last date for this species, July 27, was submitted by K. Carlander who saw 7 young just out of the nest at Rice Lake in Anoka County.

HORNED GREBE. The only record of this Grebe comes from Gustav Swanson, who saw adults with young at Thief Lake on July 26.

EARED GREBE. Three nests with 4-6 eggs each of this western-ranging Grebe were found at Heron Lake on May 29 by G. Swanson; and between June 6-7, Bob Upson located 3 nests that held 2, 4, and 9 eggs at Lake Traverse.

WESTERN GREBE. Two observers found Swan-necked Grebes at Lake Traverse. Bob Upson noted 2 nests that held 4 and 5 eggs on June 6-7; and R. M. Berthel, on June 16, found 4 pairs that were courting.

PIED-BILL GREBE. Ten nest of the Hell Diver were reported. The earliest was found at Frontenac on May 20 by K. Carlander; it contained eggs. Three nests with 4, 5, and 6 eggs each were discovered on May 23 by R. Both and W. Hiebert at Maiden Lake in Cottonwood County. Nests containing eggs were found at Minneapolis on May 21 and 31 by Bob Upson. Upson and Owre found a nest of 7 eggs on June 17 in Beltrami County. On May 29 a nest of 5 eggs was discovered by G. Swanson at Heron Lake. The last nest was found by W. J. Breckenridge on June 29 in Anoka County; it held 11 eggs.

WHITE PELICAN. G. Swanson on July 14, found 4 nest of 1-2 eggs on the Ontario side of Lake of the Woods. This is the first definite nesting record for the species in the Minnesota area since 1904.

DOUBLE-CRESTED CORMORANT. The sole record for this species comes from Gustav Swanson who found 11 nests with young on Crow Duck Reef (Lake of the Woods) on July 14.

AMERICAN EGRET. Late in May an acquaintance of Dr. G. H. Luedtke of Fairmont saw about 25 adult Egrets with nests and eggs at East Chain Lake near Fairmont.

GREEN HERON. On May 22 a nest of 4 eggs was found by E. D. Swedenborg at Minneapolis. On June 9 George Rysgaard found 2 nests at Lake Frances in Isanti County. One held 4 large young; the other, 5 eggs.

BLACK-CROWNED NIGHT HERON. At the Lake Owasso heronry, Ramsey County, Dr. Roberts' Bird Class found nests with eggs and small young on May 23. On July 2, K. Carlander observed at the heronry many nests with eggs or young, and some almost ready to fly.

LEAST BITTERN. Four downy young of this species were found on June 30 at Minneapolis by Milton Thompson and Bob Upson.

MALLARD. The first Mallard nest, one of 9 eggs, was spotted by Bob Upson at Minneapolis on May 24. Five days later at Heron Lake G. Swanson found a nest of 8 eggs. Dr. C. C. Prosser and Mr. and Mrs. E. D. Swedenborg found an 8 egg nest in a tamarack swamp at Lake Vermillion on June 8. On June 15, Oscar Owre and Bob Upson were in Beltrami County where they found a 10 egg nest. Mrs. Warnosky, on June 19, found the first young Mallards, 3 of them, 60 miles north of Duluth. Finally, on June 27, Dr. and Mrs. Don Mahle discovered 10 downy young at Blackduck.

BLUE-WINGED TEAL. On his Heron Lake trip of May 29, G. Swanson found a Teal's nest with 8 eggs. On June 2, Dr. C. E. Mickel, at Blue Earth, chanced upon a nest of 13 eggs. On June 7 at Lake Traverse Bob Upson found a nest of 5 eggs; ten days later Upson and Owre discovered, in Beltrami County, a nest with 11 eggs. At Camp Icogawan

near Chisago City, Nathan Mahon, on June 22, found a nest of 12 eggs; 3 days later only 6 eggs remained; subsequently one of these hatched, but the young bird died. Finally, Dr. and Mrs. Mahle, on June 23, saw 4 half-grown young on Pelican Lake; on June 26 in Beltrami County they saw 10 downy young.

WOOD DUCK. The first Wood Duck nest was noted by Bob Upson on April 20 at Hastings. It held 6 eggs. The last report comes from Gustav Swanson who saw several broods at Lake Itasca on August 6.

REDHEAD. The only record for this duck was submitted by Bob Upson who saw a nest of 11 eggs at Lake Traverse on June 7.

AMERICAN GOLDEN-EYE. Eleven downy young Whistlers were found by Oscar Owre and Bob Upson in Beltrami County on June 17. On June 27 at Blackduck, Don Mahle observed 4 one-third grown young. At Lake of the Woods on July 14, G. Swanson met with a brood of 5 young.

AMERICAN MERGANSER. A female Sawbill and 18 young were studied by G. Swanson at Lake of the Woods on July 9. On August 2, 10, and 14, Dana Struthers saw full grown young with females at Lake Vermillion.

RUDDY DUCK. Three nests of the Ruddy, each with 7 eggs, were found by W. J. Breckenridge in Anoka County on June 29.

COOPER'S HAWK. A nest of this bird Hawk was found on May 10 at Minneapolis by Dana Struthers and Ward Zimmerman; on June 7 at Linwood Lake in Anoka County, W. J. Breckenridge found another. In each instance the nest held 4 eggs.

RED-TAILED HAWK. Struthers and Zimmerman, who specialize in Hawks, found the first Red-tail's nest near Minneapolis on April 11; it contained 2 eggs. Bob Upson, on April 20, found a nest of 2 eggs at Hastings. On May 1 at Spring Lake near Hastings, Owre, Mahon, Paul, and Upson saw a nest with one egg.

BROAD-WINGED HAWK. An adult and an immature Swainson's Hawk were encountered by W. J. Breckenridge and R. M. Berthel in eastern Freeborn County on August 2.

BALD EAGLE. At Lake Itasca on May 29, N. L. Huff and Arnold Erickson saw a well-feathered young Eagle in its nest in a live white pine. On August 1, also at Lake Itasca, G. Swanson saw 2 full grown young that could fly. The two observations were probably made on the same family of Eagles.

MARSH HAWK. A two-egg nest of a Marsh Hawk was found by D. Struthers and Bob Upson on April 25 at Minneapolis.

OSPREY. At Lake Vermillion on August 2, D. Struthers discovered a nest with 2 young Fish Hawks.

SPARROW HAWK. On June 24 at Minneapolis, D. Struthers saw 2 adult Killy Hawks with 5 male young that could fly. Another family, also awing, was seen by W. J. Breckenridge at Forest Lake on June 28.

RUFFED GROUSE. The first nest of this species was found by N. L. Huff and A. B. Erickson at Lake Itasca on May 28. Although deserted, it contained 8 addled eggs. The first young, 2 tiny chicks, were seen by W. J. Breckenridge on June 7 at Cedar Creek Bog in Anoka County. On July 26 at Gull Lake, E. D. Swedenborg saw 2 families of small young. Finally, on July 20 in the Northwest Angle at Lake of the Woods G. Swanson observed a brood of 9 small young.

RING-NECKED PHEASANT. Six observers reported Pheasant nests or young birds. The first nest was found by R. Voth and W. Hiebert at Maiden Lake, Cottonwood County on May 23. G. Swanson saw several nests at Windom on May 29; K. Carlander noted 2 covies just off the nest on June 2 at Shakopee; E. D. Swedenborg found one-third grown young at Minneapolis on July 7; and Arnold Erickson saw several broods of large young at Long Meadow (Minneapolis) on August 7.

VIRGINIA RAIL. Milton Thompson and Bob Upson found 2 nest near Minneapolis; the first, on May 26, held 2 eggs; the second, on June 30, held 3 eggs.

SORA. On May 13 at Minneapolis, Bob Upson found a nest with 4 eggs; on May 26, also at Minneapolis, he found 6 nests that held from 5-11 eggs each. Dana Struthers saw 3 nests at Minneapolis on June 4; they held 9, 12, and 13 eggs each.

FLORIDA GALLINULE. The first Gallinule nest was located by Gus Swanson at Heron Lake on May 29; it held 4 eggs. Two days later Bob Upson found 2 nests at Minneapolis; each contained 8 eggs. Two quarter-grown young were seen by Arnold Erickson at Long Meadow on August 7.

COOT. R. Voth and W. Hiebert found 8 nests at Maiden Lake on May 23. They averaged 6 eggs each. Upson found nests in Minneapolis on May 26 and 31; Gustav Swanson saw several nests at Heron Lake on May 29; on June 6-7, Upson found many nests at Lake Traverse; the first young were seen by Don Mahle on Lower Red Lake on June 26. Finally, Swedenborg observed half-grown young at Minneapolis on July 10.

PIPING PLOVER. Dr. Olga Lakela, Casimir Hero, and other members of the Duluth Bird Club made extensive observations on the Piping Plovers of Minnesota Point, Duluth. Between May 15 and July 23 they followed the history of 6 nests. All of these but one held 4 eggs. In nest number 2 one egg was deposited on May 22, the second on May 23, the third on May 25, and the fourth on May 28. All four eggs hatched on June 23. The last nest at Minnesota Point was found by C. Hero on July 23; it held 4 eggs. On July 5 at Lake of the Woods (Pine and Curry Islands) Gustav Swanson found 15 nests; all held 4 eggs each.

KILLDEER. According to D. Struthers the Killdeer has taken to roof nesting. On June 10, he found 4 eggs on the roof of Ramsey Jr. High School, Minneapolis. Newly-hatched young were found

by E. D. Swedenborg on May 15 at Minneapolis. On June 25 at Warren, Don Mahle saw 3 half-grown young. Four eggs were found by B. Upson at Lake Traverse on June 6. The last nest, also of 4 eggs, was noted by G. Swanson at Lake of the Woods (Pine Island) on July 5.

WOODCOCK. An adult and 3 young of this elusive shore bird were seen on May 21, by Mrs. W. C. Olin and Mrs. Warnosky as the birds crossed a road at Duluth.

UPLAND PLOVER. At Worthington on June 13, R. M. Berthel watched 2 young Plovers that had just hatched.

SPOTTED SANDPIPER. At Lake Vermillion Dr. Prosser and E. D. Swedenborg found a nest of 4 eggs on June 10.

HERRING GULL. Prosser and Swedenborg saw nests on rocky islands in Lake Vermillion on June 10. At Lake of the Woods (Gull Rock) on June 7, G. Swanson found many young but only a few nests with eggs.

FRANKLIN'S GULL. K. Carlander saw Gulls of this species on nests at Heron Lake on June 3. He was unable to determine the contents of the nest.

FORSTER'S TERN. G. Swanson found 6 nests in a slough in Cottonwood County on May 30.

COMMON TERN. Dr. Lakela found Tern nests on Minnesota Point (Duluth) on June 9 and June 29. Both nests held 3 eggs each. G. Swanson visited Spirit Island in Mille Lacs on July 2; he found hundreds of nests.

BLACK TERN. Bob Upson found the first nest of this species at Minneapolis on May 26—7 nests 1-3 eggs each. On May 31, a same locality, he found a nest built on a floating plank. Struthers found 2 eggs at Minneapolis on June 4; Owre and Upson discovered many nests in Beltrami County on June 12; vandals had destroyed the eggs and young. Several nests were found at Swan Lake in Nicollet County by G. Swanson on June 17. On July 17, Arnold Erickson found one young floating on a piece of wood in Pearl Lake, Stearns

County. Adults were feeding the young bird.

MOURNING DOVE. The first nest was found by O. S. Pettingill and G. Rysgaard at Northfield on May 1; two young left the nest on that day. Three days later at Stillwater, G. C. Kutz discovered 2 nests with 2 young each in water gutters. Eggs were found in Minneapolis by Struthers (May 14), Swedenborg (June 12), and Swanson (July 29).

YELLOW-BILLED CUCKOO. The only nest reported was found by W. J. Breckenridge 10 miles south of Wabasha on June 17. It held several young.

BLACK-BILLED CUCKOO. Near Afton on June 3, Rysgaard, Prosser, and Breckenridge saw adults carrying nesting material. At Gull Lake on June 25, E. D. Swedenborg found a nest of 4 eggs.

SCREECH OWL. K. Carlander and Bob Upson found the first nest of this little Owl on March 30 at Minneapolis. The eggs were situated in a hollow tree. On April 3, also at Minneapolis, E. D. Swedenborg found a nest with 4 eggs; on May 13 when Upson and Struthers examined this nest, it held 3 eggs and one newly-hatched young. Finally, on June 15 at Plainview, Don Mahle saw 3 half-grown young in the gray phase.

GREAT HORNED OWL. The earliest nest of this species was found at Minneapolis on Washington's birthday by D. Struthers, B. Upson, and W. Zimmerman; it held one egg. R. Voth found the second nest on February 28 at St. Joseph; it was complete but empty. At Bush Lake, Hennepin County, on March 24, K. Carlander located a nest with eggs. The first young were found by G. C. Kutz at Stillwater on April 3. On April 12 at Upsala, A. B. Madden found a nest with one egg; subsequently it hatched. On April 14 at Minneapolis, Struthers and Upson saw 2 young Horned Owls.

BARRED OWL. R. M. Berthel found one young Barred Owl in Houston County on June 11; it was just able to fly.

LONG-EARED OWL. A. B. Madden of Upsala found, on April 12, a set of

5 eggs in an abandoned Crow's nest. On April 25 the nest held 5 young and one egg.

NIGHT HAWK. Young Night Hawks, just able to fly, were seen by E. D. Swedenborg at Minneapolis on June 12. At Granite Falls on August 4, W. J. Breckenridge and R. M. Berthel found 2 nests, one with 2 eggs, the other with 2 downy young.

RUBY-THROATED HUMMINGBIRD. Two young, still in the nest, were studied by G. Swanson at Itasca Park on July 31.

BELTED KINGFISHER. On June 10 at Lake Vermillion, Dr. C. C. Prosser and Mr. and Mrs. Swedenborg saw a kingfisher excavating for a home.

FLICKER, E. D. Swedenborg found a nest at Minneapolis on May 14; he was not able to determine the contents. On May 15, also at Minneapolis, Bob Upson saw adults feeding young at the nest.

RED-HEADED WOODPECKER. On July 4 at Minneapolis, E. D. Swedenborg found a nest with large young; on September 8, also at Minneapolis, he noted large young being fed. At Red Wing on July 10, Arnold Erickson saw one large young out of the nest.

YELLOW-BELLIED SAPSUCKER. Five young Sapsuckers were found by D. Struthers at Afton on June 5. Sapsuckers were still nesting on August 10 when G. Swanson found young in a nest at Itasca Park.

HAIRY WOODPECKER. Bob Upson saw adults feeding at Minneapolis on May 10. On May 29, E. D. Swedenborg saw a nest of small young at Minneapolis. Prosser and Swedenborg discovered 2 nests with small young at Lake Vermillion on June 5 and 6.

EASTERN KINGBIRD. K. Carlander found Kingbirds building at Winona on May 20. The other end of the process, full-grown young leaving the nest, was observed by G. Swanson at Itasca Park on August 2.

ARKANSAS KINGBIRD. On June 6 at Lake Traverse, Bob Upson found a nest with one egg. Ten to twelve empty

nests nearby were attended by solicitous adults.

CRESTED FLYCATCHER. On June 30 at Camp Icohwan near Chisago City, Nathan Mahon found Crested Flycatchers nesting. He was unable to determine the contents of the nest. At Minneapolis on June 17, E. D. Swedenborg found young out of the nest.

PHOEBE. Data for this species was submitted by 9 observers. Space will permit the listing of but 2 or 3 of the observations. R. Voth found a complete but empty nest on April 27 at St. Cloud. At White Bear Lake on May 8, R. M. Berthel found Phoebes building over his front door; Phoebes have built there for the past 25 years. The latest record is from G. Swanson who found young just hatched at Itasca Park on August 1.

ALDER FLYCATCHER. Milton Thompson found 3 nests of the Alder on June 9 at Walker. The eggs in all 3 nests hatched, and the young left the nests.

LEAST FLYCATCHER. The first nest of this species was observed on June 5 at Lake Vermillion by Prosser and Swedenborg; it held 4 eggs. At Walker on June 9, M. Thompson found 2 nests with eggs; on June 25, also at Walker, he found a nest with 3 young.

WOOD PEWEE. A nest with a large young was found by E. D. Swedenborg at Excelsior on July 31.

PRAIRIE HORNED LARK. On April 2, at Lake Traverse, Paul, Rysgaard, Mahon, and Erickson found a nest that held small young. Virginia Scott and other members of Dr. Lakela's class found a Lark nest on June 25 at Minnesota Point. At that time it held 5 eggs; and on July 12 there was one bird in the nest. The next day the nest was empty.

BANK SWALLOW. A sand martin colony near Frontenac was examined on May 20 by Kenneth Carlander; it contained many nests of eggs. The nests were badly infested with bird fleas (Siphonaptera). Bob Upson saw a large colony near Lake Traverse on June 7. In St. Louis County, Dr. Prosser noted a colony on June 11. Mr. E. D. Swedenborg found a

nest of young on July 7 at Minneapolis.

ROUGH-WINGED SWALLOW. K. Carlander found several nests of eggs near Frontenac on May 20. A pair of rough-wings, building in a kingfisher's runway near Lake Vermillion on June 10, were observed by Dr. Prosser and Mr. Swedenborg.

BARN SWALLOW. A completed but empty nest was found at Warren by Dr. Donald Mahle on June 25. Arnold Erickson found a nest of 2 eggs at Rock Creek, Pine County, on June 27. On July 27 Kenneth Carlander examined a nest of young under a bridge near Rice Lake, Anoka County.

CLIFF SWALLOW. Mr. E. D. Swedenborg saw 3 nearly completed nests on May 21. Dr. C. E. Mickel found cliff swallows nesting twenty miles south of Marietta on June 4. Near Dover, in Olmstead County, W. J. Breckenridge and R. M. Berthel found a colony of 13 nests under a concrete bridge. The 3 nests examined contained 3, 4, and 3 young about 2 days old.

PURPLE MARTIN. On May 5 26 martins began carrying nesting materials to a box provided at White Bear Lake by R. M. Berthel. On July 2 Gus Swanson saw many nests, one with 5 eggs; the nests were among the rocks of Spirit Island, Mille Lacs. At Lake Vermillion, Prosser and Swedenborg saw martins incubating on June 5; young awing were being fed on July 17.

BLUE JAY. On May 28 Mr. E. D. Swedenborg found a nest of 3 young. Near Afton 3 young about to leave the nest were seen by Rysgaard, Breckenridge, and Dr. Prosser on June 3.

CROW. M. R. Voth, on April 12, found a completed but empty nest on the Teachers College Islands, St. Cloud. Near Upsala, Minnesota A. B. Maddon saw 5 young ready to fly on May 12. Mr. E. D. Swedenborg saw young out of the nest being fed on June 25 at Gull Lake.

BLACK-CAPPED CHICKADEE. On May 20, at Minneapolis, Upson found a nest in a birch stub about 3 feet high; it held 5 small young. The nest entrance

was in the top of the stub. In Houston County Al Buzicky found a nest that held 7 eggs that was situated in a stump (May 23). Near Gull Lake E. D. Swedenborg saw young awing on June 25. On July 5 Rysgaard re-visited a nest to which the chickadees were carrying nesting material on June 5; it held half-grown young (Sturgeon Lake).

WHITE-BREASTED NUTHATCH. On April 17, at Minneapolis, Upson watched two nuthatches carry material to a nest that was already built to the top of the hole; on about May 10 they were feeding noisy young. On June 3 Breckenridge, Prosser and Rysgaard saw a nuthatch carrying food (Afton).

HOUSE WREN. R. M. Berthel reports that at White Bear Lake a pair of wrens on May 10, began to carry nesting material into the same box they used in 1937. E. D. Swedenborg found a nest that held 7 large young on July 3 at Shakopee.

LONG-BILLED MARSH WREN. Upson found a nest of 5 eggs on May 24 at Minneapolis.

CATBIRD. On May 20, at Frontenac, Kenneth Carlander found a nest of one egg. On May 28 E. D. Swedenborg found a completed empty nest; on May 30 he found a nest of one egg. Both found at Minneapolis. In Beltrami County, on June 16, O. Owre and Upson found a nest that held 2 eggs. Dr. Mahle found a nest of one egg at Warren on June 25. On July 17. Dr. Mahle found a nest of 3 half-grown young near Plainview.

BROWN THRASHER. On May 14 Upson found a nest of 4 eggs at Minneapolis. In Houston County, Carlander found a nest of 6 eggs on May 21. Voth and Hiebert found thrashers nesting in Cottonwood County on May 23. On May 27, at St. Paul, Tilford Moore found a nest that held 4 eggs. Near Chicago City Nathan Mahon found a ground nest that held 4 eggs on June 26. On July 16, at Minneapolis, K. Carlander found a nest that contained 5 young.

ROBIN. Dr. Donald Mahle located

a nest with 3 eggs at Plainview April 14; the nest was in the eaves of a house. Rain drowned the bird out on April 27. On April 30 T. Moore found a nest that held small young (St. Paul). Near Lake Vermillion, June 6, Dr. Prosser and Mr. Swedenborg located 3 nests that held 4 newly hatched young, 4 large young, and 4 eggs, respectively.

WOOD THRUSH. On June 5 D. Struthers found a nest near Afton that held 2 eggs and 2 young. On August 13, at Minneapolis, Mr. Swedenborg saw a Wood Thrush feeding a cowbird.

HERMIT THRUSH. Dr. Prosser and Mr. Swedenborg found a nest that contained one egg at Lake Vermillion on June 6. Dana Struthers, also at Lake Vermillion, found a nest situated in the middle of a sand bank, on August 3.

OLIVE-BACKED THRUSH. Two Swainson's thrushes' nests, containing one egg and 3 eggs respectively, were examined on June 10, near Lake Vermillion, by Prosser and Swedenborg.

VEERY. Dr. Prosser and Mr. E. D. Swedenborg found a nest of 4 eggs near Lake Vermillion on June 5. In Anoka County W. J. Breckenridge observed young awing on June 28.

BLUEBIRD. A nest and 4 eggs were found on May 1 by Swedenborg, at Minneapolis. From Plainview Dr. Mahle reports a nest of 5 eggs found in that area on May 15. On July 4 E. D. Swedenborg found 3 nests which contained 4 small young, 3 large young, and fresh eggs, respectively. All of the nests were found at Minneapolis.

BLUE-GRAY GNATCATCHER. On August 11 Breckenridge and Berthel saw 2 adults but no young near Taylor's Falls.

GOLDEN-CROWNED KINGLET. On June 10, at Lake Vermillion, a nest of 5 young was seen by Dr. Prosser and E. D. Swedenborg.

CEDAR WAXWING. Milton Thompson saw 4 birds incubating and one pair building one June 9 near Milaca. Near Brule River, Cook County, Mr.

Swedenborg found a nest holding 4 large young on August 15.

MIGRANT SHRIKE. Dana Struthers found a nest of 4 eggs on May 10. Mr. E. D. Swedenborg found a nest of 6 eggs on May 15. Both occurred in Minneapolis.

STARLING. Starlings feeding large young were seen on May 15 by Dr. Mahle at Plainview. Near Frontenac, Carlander saw a nest and young of starlings in a hole in a telephone pole on May 20.

YELLOW-THROATED VIREO. On June 20, near Chisago City, Nathan Mahon saw a female cowbird on a Vireo's nest, the contents of which were not ascertained.

BLUE-HEADED VIREO. June 10. (Lake Vermillion) Nest, 3 eggs and one of cowbird; another uncompleted nest. (Dr. Prosser and E. D. Swedenborg).

RED-EYED VIREO. Between June 5 and June 10, Swedenborg and Prosser found nests in various stages of completion near Lake Vermillion. On August 3, Gustav Swanson found a nest and 4 eggs in Itasca Park.

WARBLING VIREO. On May 25, at Lake Minnetonka, the bird class saw a nest but didn't determine its contents. Young awing were seen on July 17 by Swedenborg at Minneapolis.

BLACK AND WHITE WARBLER. Mr. E. D. Swedenborg saw young fed awing near Brule River, Cook County, on August 15.

YELLOW WARBLER. On May 28 E. D. Swedenborg found a completed but empty nest at Minneapolis. M. D. Thompson found, near Walker, a nest which the young left on June 18. On July 20, in the North-west Angle, Lake of the Woods, Gus Swanson found a nest and 4 young just hatched.

YELLOW-BREASTED CHAT. A nest of 4 eggs was located on June 13 by Russel M. Berthel in Houston County. The nest, about twice as large as a Yellow Warbler's, was built about three and a half feet up in a box elder tree.

Mr. Kilgore found large embryos in the eggs.

MAGNOLIA WARBLER. At Lake Vermillion two nests, each with 3 eggs and 2 cowbird eggs, were observed by Prosser and Swedenborg on June 10.

MYRTLE WARBLER. On June 5, a nest and 4 eggs, and on June 10, a nest of young yellow rumped warblers were located near Lake Vermillion by Prosser and Swedenborg.

BLACKBURNIAN WARBLER. On August 18 E. D. Swedenborg saw young awing at Loon Lake, Cook County.

MOURNING WARBLER. Young being fed awing were observed on August 15 at Brule River by E. D. Swedenborg.

REDSTART. E. D. Swedenborg and Dr. Prosser discovered a finished but empty nest near Lake Vermillion on June 7.

ENGLISH SPARROW. Young just able to fly were seen on May 15 by Carlander at Minneapolis. In a house provided for Martins a pair of House Sparrows nested; a pair of Grackles and a pair of House Wrens shared the house with them. The house and occupants were noted near Lake Vermillion on June 8 by Swedenborg and Prosser.

BOBOLINK. On May 24, at Minneapolis, Upson found a Bobolink's nest that held 2 Bobolink's eggs and 3 meadowlark's eggs. At Warren on June 25 Dr. Mahle found a nest and one egg.

EASTERN MEADOWLARK. On May 15, near Plainview, Dr. Mahle found a nest and 6 eggs; one egg proved later to be infertile. In Houston County on May 21 Kenneth Carlander found a nest of 4 young; several large blue racers were near the nest. On June 24 D. Struthers found a nest of 4 eggs at Minneapolis.

WESTERN MEADOWLARK. Voth and Hiebert found a nest of 5 eggs and 2 cowbird eggs near Maiden Lake, Cottonwood County on May 23. On June 24. Dr. Mahle found a nest of 6 eggs near Warren.

YELLOW-HEADED BLACKBIRD. Twelve saffron-headed maize birds' nests

were found in Maiden Lake, Cottonwood County, on May 23 by Voth and Hiebert; they held from 1 to 5 eggs. On May 30, at Heron Lake, G. Swanson found many nests that held 1 to 5 eggs; small young were in some nests. On June 12 O. Owre and Upson saw several adult Yellowheads and found 2 or 3 empty nests, which evidently had been robbed. Someone had been killing birds and destroying nests in this slough near Lake Andrusia, Beltrami County.

RED-WINGED BLACKBIRD. On May 10 Upson found a nest and 2 eggs. On May 26 Upson saw a Redwing's nest that was built about 4 feet up in a thorny bush about thirty yards from a small slough; there were 5 cowbird eggs and one Redwing's egg in the nest. Two other Redwings had built their grass nests in similar locations near this slough; one nest was empty, the other inaccessible. Upson saw all of the above nests near Minneapolis. On May 23, in Cottonwood County, Voth and Hiebert found 14 nests; they held one to 4 eggs; one contained a cowbird egg and 4 Redwing's eggs. On May 30 G. Swanson found many nests containing both eggs and young at Heron Lake. Near Rock Creek, Pine County, A. Erickson found a nest of 4 eggs on June 27.

BALTIMORE ORIOLE. E. D. Swedenborg saw young awing on July 9. On July 12 Upson saw adults feeding large young in a nest. Both observations were made at Minneapolis.

BREWER'S BLACKBIRD. A Blue-headed Grackle's nest that held 5 eggs and 2 of the Cowbird was found near Stillwater on May 6 by George C. Kutz. On June 25 Dr. Mahle found many young awing near Warren. On June 26 Mr. Breckenridge found a nest in Anoka County that held 3 eggs and one of the Cowbird. D. Struthers saw young awing on July 25 near Minneapolis.

BRONZED GRACKLE. A nest or large young was seen near Lake Vermillion on June 7 by Swedenborg and Prosser.

COWBIRD. May 12. (Hastings) 2 eggs in Field Sparrow's nest. (Upson

and Breckenridge). May 20, 2 eggs in Rose-breasted Grosbeak's nest and 2 eggs in Field Sparrow's nest (Upson). May 26, 5 eggs in Red-winged Blackbird's nest (Upson). May 28, egg in Song Sparrow's nest (Swedenborg). May 31, 3 eggs in Swamp Sparrow's nest (Upson). June 5-10, (Lake Vermillion) eggs in Yellow Warbler's, Magnolia Warbler's and Blue-headed Vireo's nests (Dr. Prosser and E. D. Swedenborg). August 6, young being fed by Wood Thrush (Swedenborg) at Minneapolis.

SCARLET TANAGER. A nest containing 2 eggs and one Cowbird's egg was seen on June 3 near Afton by Prosser, Rysgaard, and Breckenridge. On June 14 Breckenridge found 2 nests at Nine Mile Creek, Minneapolis; one held one Tanager's egg and 3 Cowbird's eggs; the other held 3 Tanager's eggs and 2 Cowbird's eggs.

CARDINAL. On May 21 George C. Kutz saw a female incubating; her nest was in a woodbine. On May 30 Kutz located another nest built in a honeysuckle; 5 eggs were in the nest. The nest was deserted on June 7; none of the eggs hatched. Both nests were found near Stillwater.

ROSE-BREASTED GROSBEEK. On May 20, at Minneapolis, Upson found a nest that held 1 Grosbeak's egg and 2 Cowbird's eggs; the male was incubating. On May 30, near Plainview, Dr. Mahle found a nest and 3 eggs; the male was incubating. At Lake Vermillion, on June 10, Swedenborg and Prosser found 2 nests that held 2 and 3 eggs. Breckenridge saw Rosebreasts building on June 23 at Nine Mile Creek, Minneapolis.

INDIGO BUNTING. On June 17 Mr. W. J. Breckenridge found a nest that held one Bunting's egg and 3 Cowbird eggs at Cummingsville, Olmstead County.

DICKCISSEL. Between Worthington and the Dakota line Mr. Berthel saw 30 Black-Throated Buntings on June 15; they were seen less frequently as he trav-

eled northward. They were probably nesting in the region.

PINE SISKIN. Voth and Hiebert discovered a nearly finished nest near the Veterans Hospital, St. Cloud on April 12. A Pine Linnet's nest, that held 2 fresh eggs, was found on the Teachers College Campus, St. Cloud, on April 25 by the T. S. Roberts Ornithology Club; Voth found that the eggs were gone from this nest on April 27.

GOLDFINCH. Three young thistle birds in their nest were seen by Swedenborg on July 31 near Minneapolis.

TOWHEE. Mr. E. D. Swedenborg found a nest that held 3 young and one egg on June 26 at Gull Lake.

GRASSHOPPER SPARROW. Breckenridge saw Yellow-winged Sparrows building on June 17 near Wabasha.

SAVANNAH SPARROW. Adults, carrying food to 3 small young in the nest, were noted on June 11 in Anoka County by G. N. Rysgaard. Near Warren a nest of 6 eggs was found by Dr. Donald Mahle on June 25.

VESPER SPARROW. A Bay-winged Bunting's nest that held 4 eggs was found near Stillwater on May 7 by Kenneth Carlander. Arnold B. Erickson found a nest in Anoka County on May 10 that contained 3 eggs. On May 30, at Minneapolis, Swedenborg located a nest of 2 eggs and 2 young. Berthel and Breckenridge found a nest near Granite Falls that held 4 young about 2 days old, on August 4.

LARK SPARROW. On June 3 Rysgaard, Breckenridge, and Berthel found a nearly completed nest near Afton.

SLATE COLORED JUNCO. A nest, sunk in the moss in a tamarack swamp, was found at Lake Vermillion on June 7 by Swedenborg and Prosser; it held one small young. On August 10 Swanson saw juvenals being fed in Itasca Park.

CHIPPING SPARROW. G. C. Kutz found a nest that held one broken egg on May 20 near Stillwater. On June 7 Kutz found a nest of one egg and 2 Cowbird eggs near Stillwater. At Lake Ver-

million Prosser and Swedenborg found a nest of 4 eggs on June 7. Milton D. Thompson saw Chippies building near Walker on July 16; 4 eggs were laid in this nest. Three eggs hatched and the young left; one egg did not hatch.

CLAY-COLORED SPARROW. On May 30 Swedenborg found a nest of one egg at Minneapolis.

FIELD SPARROW. Near Hastings, Breckenridge and Upson found a nest of one egg and 2 Cowbird eggs on May 12; broken Field Sparrow's eggs lay nearby. On May 24 Upson found a nest and 4 eggs at Minneapolis. Rysgaard saw adults carrying food on June 11 in Anoka County.

WHITE-THROATED SPARROW. Prosser and Swedenborg found a nest of 4 eggs on June 10 at Lake Vermillion. Swedenborg saw 4 young awing on August 3 at Lake Vermillion.

SWAMP SPARROW. On May 28 a nest of 4 eggs and one Cowbird egg was found by Swedenborg. On May 31 Upson found a nest of 3 eggs and 3 Cowbird eggs. Both nests were found at Minneapolis.

SONG SPARROW. Swedenborg found a nest and 5 eggs on June 6. Young awing were observed in Anoka County by George Rysgaard on June 11.

Minneapolis, Minnesota

Notes of Interest



—Pen sketch by G. Rysgaard

AMERICAN EGRET

1938 witnessed the invasion of southern Minnesota by the American egret; and for the first time, in so far as is known, the egret nested within the borders of this state.

The American egret once faced extinction, for ill-fated luck adorned this bird with fifty or more long and straight snowy-white plumes or *aigrettes* which droop from its back and project far beyond the tail and wing tips during the breeding season. These *aigrettes* are lost at the close of the breeding season. Until 1913 plume-hunters slaughtered these beautiful creatures during the breeding season for these plumes which brought approximately ninety cents on the market. As the birds became scarce, the price per plume rose to as high as ten dollars. The American egret is now fully protected and is once again increasing in numbers.

Grouse Observations

By A. B. ERICKSON

DURING the summers of 1936 and 1937 when I was in the employ of the National Park Service as Student Technician, I collected information in the St. Croix Park in Pine County, Minnesota which led me to believe that the "crash" period, or die-off almost to extermination, of the Ruffed Grouse (*Bonasa umbellus umbellus*) and the Sharp-tailed Grouse (*Pediacetes phasianellus campestris*) occurred in the fall and winter of 1935-36.

The St. Croix State Park, which consists of 28,000 acres, lies in the Canadian Zone. It is situated midway between Hinckley, Minnesota and Danbury, Wisconsin on Minnesota State Highway 48. The St. Croix River marks its southeastern boundary for 19.5 miles, from a mile below the interstate bridge on Highway 48 to the mouth of the Kettle River. Six creeks and brooks, totaling 22 miles of stream, flow through the park to join the St. Croix River. Eight ponds with a total area of 36.5 acres occur in various sections of the park.

There are 6 main vegetational areas in the park: black spruce swamps, sphagnum-leather leaf bogs, jack pine woods, pine barrens, hardwood groves (soft maple, elm, ash), and hardwood conifer groves (black ash, yellow birch, balsam spruce). Of these 6 cover types the pine barrens and sphagnum-leather leaf bogs were most used by the Sharp-tailed Grouse. Because of the extreme scarcity of Ruffed Grouse it is difficult to say which cover type they preferred.

In the summer of 1936 Ruffed Grouse and Sharp-tailed Grouse were exceedingly scarce, so much so that census work was almost futile. However, I conducted several censuses in conjunction with the type mapping of 17 sections of land, each of which I cruised along 4 north-south lines. During June, July, and August of 1936 I cruised, in 31 days, 81 miles of line

in all sections of the park and observed but 10 Ruffed Grouse and 2 Sharp-tailed Grouse. They were mature birds. In addition, one brood of 14 downy young Ruffed Grouse was flushed on June 24, 1936, and a covey of 11 quarter-grown Sharp-tailed Grouse was observed on July 6, 1936.

All available data seem to indicate that in 1937 the Sharp-tailed Grouse population on 28,000 acres in the park did not exceed 60 birds, and that the Ruffed Grouse population did not exceed 70 birds. Yet, the Grouse population was greater in 1937 than in 1936. There is evidence to indicate that, 3 or 4 years previous to 1936, Grouse of both species were very abundant in the park area, and that in the fall of 1935 they were much more abundant than they were in the summers of 1936 and 1937.

In 1937 the field notes of Messrs. A. Ryan and R. Hanson, who were engaged in a wildlife reconnaissance in the park from October, 1935 to January, 1936 under the direction of Mr. Wm. Feeny, then Wildlife Technician for the National Park Service, were made available to me. From a study of their notes I conclude that, while the Ruffed Grouse and Sharp-tailed Grouse had been dying off for some time previous to October, 1935, it was in October 1935 and the 2 following months that the "crash" period occurred.

Their notes indicate that, in the latter half of October, 1935, they cruised 25 miles of line in 15 days and flushed 22 Ruffed Grouse and 10 Sharp-tailed Grouse. In November they cruised 30 miles of line in 21 days and flushed 14 Ruffed Grouse and 15 Sharp-tailed Grouse. In December they cruised 28 miles of line in 16 days and flushed 10 Ruffed Grouse. Finally, in January, 1936 they cruised 20 miles of line in 9 days and observed one Sharp-tailed Grouse.

The Tragedy of Two Young Loons

By J. P. JENSEN

IN MINNESOTA, we are indeed fortunate to have with us as yet that spirit of the wilderness, the Great Northern Diver or Loon, one of the most interesting forms of bird life on the continent.

During the summer of 1937, the writer had excellent opportunity to study in detail the early life history of young loons. For the first time in at least a quarter of a century, a pair of loons decided to nest on Spring Lake. The chosen spot lay just below the writer's house which stands above the shores of the lake on the outskirts of Dassel, Minnesota. It, therefore, was easy to study the life story in detail from day to day with the aid of binoculars and a canoe. Since there has been much controversy from Audubon to Beebe as to how and what the young loons are fed, it seemed a splendid opportunity to determine for myself these details.

While out in my canoe on Spring Lake on the forenoon of June 10, the nest was accidentally discovered. As usual, the loons had been common on the lake all spring and early summer; but no nesting operations had been suspected. The canoe was passing along the shore near the rushes under a high bank when suddenly a shape of some sort hurled itself from the rushes through the shallow water out into the lake just a few feet in front of the canoe. The speed was so great that for a moment I did not know what it was. It then dawned upon me that it must have been a loon, and soon the bird appeared out on the lake.

The nest was on an old muskrat house among the rushes and held two large brown eggs. The time of hatching indicated that incubation had just commenced, as the incubation period seems

to have been established as approximately 29 days. Nesting, for some reason, had been delayed until this late date.

Not wishing to disturb the birds too much, my next visit was deferred until the 16th of June. On that date, when I approached in the canoe, the incubating bird slid into the water without a splash and appeared out on the lake. On returning from a short paddle about the lake, I saw the bird again on the nest. I paddled slowly past the nest, and the bird sat tight.

Henceforth morning visits to the nest were almost daily, and each time the incubating bird remained on the nest in a crouched position as I passed close by in the canoe. It was a thrilling experience and one that I shall never forget. The mate was usually fishing in the larger lower part of the lake and usually paid little attention to me.

The bird was still incubating on July 5th, but on the morning of July 7th, the parent birds were seen with the two young near the nesting site. One of the adults, presumably the male, would swim short distances away now and then and give vent to his joy and excitement in loud cries. In fact, his jubilant outbursts were heard from our bedroom windows quite early in the morning; and I said to my wife that probably the great event had taken place. They were lucky thus far, for both eggs had hatched.

I now kept the parents and youngsters under close observation. From the first day both parents fed the young by diving and bringing food in their bills. As this occurred on an average of one-half to one minute intervals, the food must have consisted of small organisms, aquatic insects or insect larvae; for minnows and other fish were scarce as a result of a

"freezing out" of the fish during the winter of 1935-36. Regurgitation was apparently not reverted to, although Audubon has reported that the loons fed their young by this method. Up until July 15, the loons were observed to feed their young as first described.

Some tragic happening must have occurred, for on July 18 there was but one young bird. Possibly a snapping turtle captured one of the young birds in spite of the vigilance of the parents. Snapping turtles are common in the lake, although hundreds have been recently removed by spearing and trapping. The remaining offspring, now nearly two weeks old, could by this time dive eight to ten feet and was about the size of a pied-billed grebe. It would sometimes lie on its side and wave one leg in the air in imitation of its parents.

On July 21 it was noted that one adult, perhaps the female, remained ever near the single young while the other adult fished out on the lake. On that date the vigilant parent carried the little one on her back across the lake to a bay sheltered from the wind. It took her about thirty minutes, and the other adult came once or twice to feed the young while it was riding on the back of the supposed female bird. When they entered the quiet water, the young had to do its own swimming.

The young loon was about the size of a mallard duck on August 4 when nearly a month old. The male visited the female and young only at intervals and often flew to other lakes. The active youngster would often swim far from its mother and tried to capture its own food. Like the female, it would make a shallow dive and swim half submerged with head and neck underwater. When the female came near the young, it was

interesting to see how the big fellow would beg to be fed, touching her bill again and again and following her about. It seemed as though the female had quite decided that her off-spring was old enough to get his own food.

After August 7 the male was not seen near the female and the young and the female was far away from the young most of the time. The female and young were likely together at night, for they were frequently seen together towards evening. The apparent indifference was but partial, for the mother was observed to feed the youngster on August 19 and August 26 when he was the size of a male mallard duck.

When more than two months old, on September 12, the young was estimated to be at least one-half adult size. It was industriously fishing, while the female rested near the nest site. By September 26 it was two-thirds or three-fourths grown; and when it flapped its wings, they appeared of good size. Of course, it was yet unable to fly. I questioned whether it would be large enough to fly and migrate before ice covered the lake. All speculation proved unnecessary, for on October 30 the rather tame young loon, now of adult size and almost four months old, was murdered by a duck hunter near the site of its nest. What a shame and crime to needlessly kill one of these beautiful, harmless, and interesting dwellers of our lakes.

Many states regret the fact that the loon is with them no more. It disappeared because they wantonly persecuted this wonderful creature which, of all birds of the Northern Hemisphere, best typifies the wildness of primeval nature. Here we still have it. Let us protect the Great Northern Diver!

Dassel, Minnesota

The tardiness of this issue of THE FLICKER was caused by the failure of our members to submit their annual dues promptly. The majority of the members' dues were payable January 1st, and the treasurer is anxious to have this remittance at the very earliest date. Please accommodate yourself and the staff by prompt payment of dues.