IOWA BIRD LIFE

PUBLISHED QUARTERLY BY THE

IOWA ORNITHOLOGISTS' UNION

VOL. XXIV DECEMBER, 1954 NO. 4

The Iowa Ornithologists' Union was organized at Ames, Iowa, February 28, 1923, for the study and protection of native birds and to promote fraternal relations among Iowa bird students.

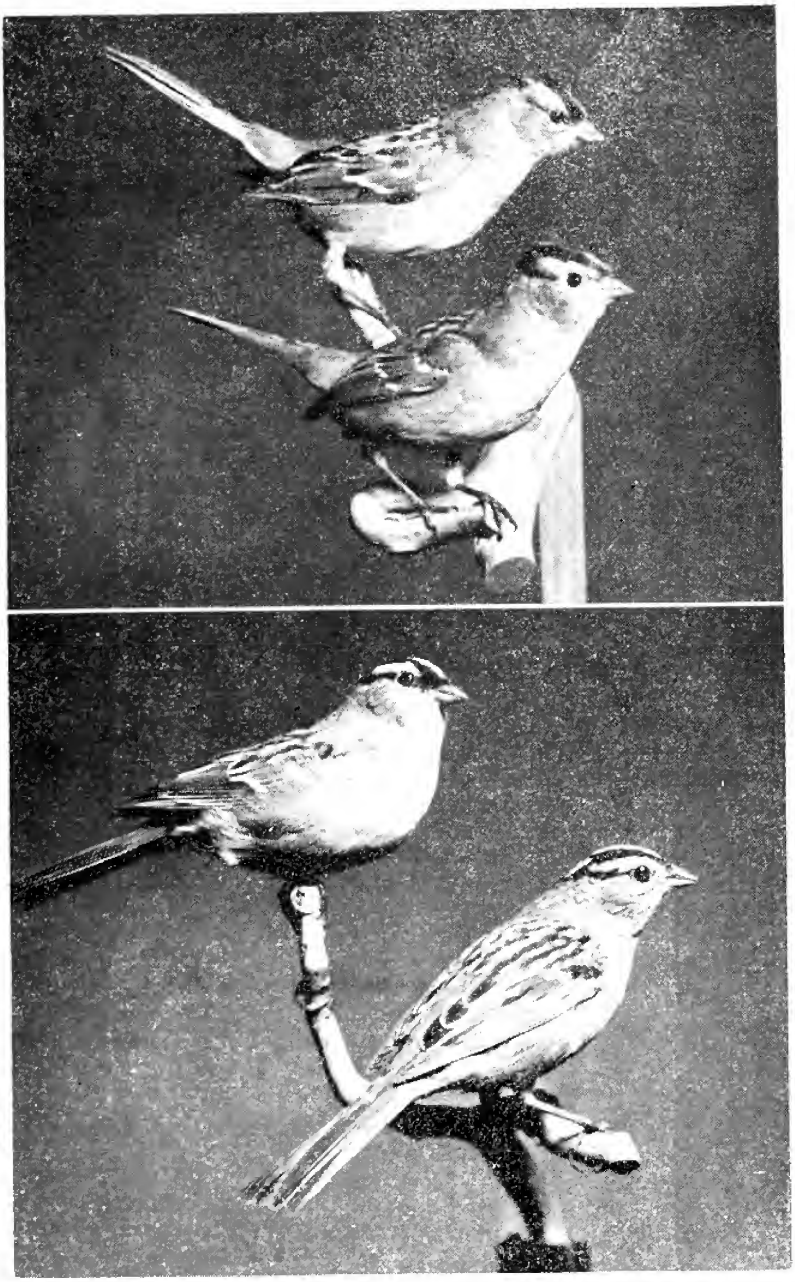
The central design of the Union's official seal is the Eastern Goldfinch, designated State Bird of Iowa in 1933.

Publications of the Union: Mimeographed letters, 1923-1928; "The Bulletin," 1929-1930; "Iowa Bird Life," beginning 1931.

SUBSCRIPTION RATE: $2.00 a year. Single copies 50c each. Subscription to the magazine is included in all paid memberships, of which there are four classes, as follows: Contributing Member, $10.00 a year; Supporting Member, $5.00 a year; Regular Member, $2.00 a year; Junior Member (under 16 years of age), $1.00 a year.

EDITORIAL AND PUBLICATION OFFICE
WINTHROP, IOWA

Entered as second-class matter February 9, 1932, at the post office at Winthrop, Iowa, under the Act of March 3, 1879.



WHITE-CROWNED and GAMBEL'S SPARROWS

Upper section shows immature or fall birds. In the lower view Gambel's Sparrow is on the lower limb; White-crowned on the upper. The birds were mounted by Walter Thietje for the Natural History Museum of University of Iowa. Photographs by Fred W. Kent

WHITE-CROWNED AND GAMBEL'S SPARROWS IN THE WESTERN HALF OF IOWA

By M. L. JONES
Fort Defiance State Park
ESTHERVILLE, IOWA

For the past several years it has been the wish of the writer to make an all-out effort to trap as many as possible of White-crowned and Gambel's Sparrows to try to determine more conclusively their relative abundance. The following report is based mainly on banding records, with further reference to "Iowa Bird Life" census reports.

Each season a few are seen but large concentrations are not often found in convenient areas for trapping. Then, too, this matter of making a living always cuts down on available time.

In checking back over the past 21 years of banding records the following figures are available.

Table 1. Banding Records of the Past 21 Years; Comparing the All-species Total with the White-crowned and Gambel Catch.

Year	County	White-cr.	Gambel's	Total for all species
1934	Calhoun	9	0	648
'35	"	23	1	896
'36	"	7	6	1416
'37	"	11	5	1293
'38	"	5	0	866
'39	"	0	3	388
1940	Story	0	0	86
'41	(No station)	0	0	45
'42	Fremont	0	0	262
'43	"	0	0	676
'44	Boone	0	0	256
'45	"	8	2	300
'46	"	5	8	215
'47	"	0	1	252
'48	"	10	9	468
'49	"	2	2	251
1950	"	0	1	445
'51	"	0	0	204
'52	"	0	0	460
'53	Emmet	0	1	135
'54	"	8	8	176

According to the table of banding records, the 1934 and 1935 total was 32 White-crowned Sparrows as against only one Gambel's, but it should be pointed out that at this date the writer had not attempted to split off the subspecies. Therefore, only the 1936 and later banding records give an accurate picture of their comparative numbers.

The banding totals for the years 1936 to 1954 inclusive yield the interesting totals of 56 White-crowned Sparrows and 46 Gambel's Sparrows, covering quite a number of counties.

Personal trapping results reveal that most Gambel's Sparrows were caught during the month of May. Records to date include 38 trapped during May as compared with only three during April and four in October. Of the White-crowns, 41 were caught in October; 30 in May; one in April and one in November.

Judging by trapping and banding data only, it would appear that the peak and duration of the migration of the White-crowned and Gambel's coincides

rather closely with that of the White-throated Sparrow. Comparing numbers, the White-throated would be about six times more numerous.

For the years 1934 and 1935, a total of 1,544 birds of all species were banded. This, compared with only 176 for the 1954 season but showing 8 White-crowned and 8 Gambel's, indicates a much higher percentage of these sparrows taken. However, this is merely a result of a little less concentration on banding numbers and more on certain species of special interest at the moment.

No reason can be given for the complete lack of data on the White-crowned and Gambel's sparrows in Fremont County, Iowa. Quite a number of Harris's Sparrows, White-throated Sparrows, and others were trapped; therefore, the trapping habitat appeared suitable but the record for October, 1942, while including no Gambel's or White-crowned Sparrows, does include Purple Finch, 28; White-throated Sparrow, 42; Junco, 30; Tree Sparrow, 1; and Lincoln's Sparrow, 1.

It would appear that a great deal more observation and study are needed in the southwest corner of Iowa.

In "Iowa Bird Life" the Christmas Bird Census was first tabulated for the 1937 season. In checking all such census reports for the past 17 years, no important information appears on the relative abundance of the two sparrows, largely perhaps because no one bothered to try to separate them in the field and so report them.

The White-crowned Sparrow was reported, however, from Des Moines from 1939 to 1952 as follows: 1939, 2; 1940, 2; 1943, 2; 1946, 1. In 1951 Harper's Ferry, 1; 1952, Des Moines, 1; Ottumwa, 3; 1953, Cedar Rapids, 4; Des Moines, 5; Sioux City, 1.

The Spring Bird Census reports which were published in "Iowa Bird Life" as a wartime substitute for our annual meeting are about equally uninformative as they were lumped together in 1943, and apparently most observers made no effort to report Gambel's Sparrows in the three later censuses.

In order to present the idea that there are undoubtedly many more to report than are being reported, the spring bird census records are presented in the following table:

Table 2. State-wide Spring Bird Census Reports, as Published in "Iowa Bird Life."

		Ames	Atlantic	Cedar Falls	Cedar Rapids	Clarion	Des Moines	Davenport	DeWitt	Dubuque	Giard	Mt. Vernon	Ottumwa	Sigourney	Sioux City	Spirit Lake	Waubonsie
1943	Both	....	....	....	4	....	....	9	....	....	1	....	....	4	17	1	3
1944	Wh-cr	3	9	....	....	....	....	14	....	....	....	....	3	....	4	....	2
	Gamb.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2
1945	Wh-cr	1	20	1	8	2	35	16	....	....	....	....	....	....	....	....	4
	Gamb.	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	11
1946	Wh-cr	....	7	4	30	7	....	29	10	2	....	1	....	....	6	1	....
	Gamb.	....	....	....	....	....	....	5	....	....	....	....	....	....	....	3	1

To quote DuMont's "Birds of Iowa":—"Roberts reported that at a banding station at Spirit Lake, Dickinson county, more Gambel's Sparrows than White-crowned Sparrows were taken."

The writer attempted in 1949 to prove such a conclusion but the season's total was two of each. The next four years netted no White-crowned and only two Gambel's Sparrows.

One must conclude that the field is wide open for a great deal more trapping and field observation. These birds are not shy and may be observed at close range. There should, therefore, be no difficulty in separating them in the field.

In all specimens trapped so far there has appeared no lack of distinct pattern—no overlapping. Even in the immature individuals so often encountered during their fall migration, the brown pattern seems to be an exact duplicate of the black pattern of the adults.

If you need a memory jog to recall which is which, just think—if the white line over the eye is confined to the crown, it's a White-crowned Sparrow. If the white line runs through to the beak, it's a Gambel's.

ECOLOGY OF THE VIRGINIA RAIL IN CLAY COUNTY, IOWA

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The ecology of the Virginia Rail was studied on prairie marshes within Dewey's Pasture Public Shooting Ground, Clay County, Iowa, from April to September 1951, from April to October 1952, and in April, 1953. The 402-acre research area included 28 marshes lying in the hollows between gently sloping prairie knolls. These marshes ranged in depth from several inches to 4 feet and in area from 0.2 acre to 18.0 acres. Of the total 96.4 acres of marsh, 81.4 acres supported emergent vegetation habitable by rails. The remaining 15.0 acres consisted of open water.

The predominant species of emergent vegetation in the shallowest water along the shores were blue-joint grass, prairie cordgrass, tussock sedge, and fox sedge. The most abundant species of emergent plants in water of intermediate depth were river grass, lake sedge, sweet flag, and water smartweed. In deeper water the predominant species were broad-leaved cat-tail, narrow-leaved cat-tail, river bulrush, hard-stemmed bulrush, pale great bulrush, and large bur-reed. The plant names follow Hayden, 1943.

The methods of study included daily counts of rails flushed with the aid of a Labrador retriever during the season of spring migration; systematic search for and weekly inspection of nests; and trapping, banding and recapturing both juvenile and adult rails. In the two years of study a total of 37 active nests of the Virginia Rail were under observation and an additional 44 inactive nests ascribable to either the Virginia Rail or the Sora were discovered. In the absence of eggs or egg shells, nests of these two species could not be distinguished with accuracy. In the two years a total of 143 Virginia Rails were captured in traps, banded and released. Of 57 Virginia Rails of all ages captured in 1951, six (10.5 per cent) were downy young, 17 (29.8 per cent) were medium-sized juveniles not yet capable of flight, 19 (33.3 per cent) were large juveniles capable of flight, and 15 (26.3 per cent) were adults. Of 86 Virginia Rails captured in 1952, 24 (27.9 per cent) were downy young, 17 (19.8 per cent) were medium-sized juveniles not yet capable of flight, 18 (20.9 per cent) were large juveniles capable of flight, and 27 (31.4 per cent) were adults.

In northern Iowa and southern Minnesota it appears that the Virginia Rail is normally in residence from about the last week of April until the middle of October. Roberts (1932) stated that the average date of first arrival and the average date of final departure of this species at Heron Lake in southern Minnesota were April 27 and October 12, respectively. Bailey (1905)

found that April 24 was the average date of first arrival of the Virginia Rail at Cedar Rapids, Iowa, and Youngworth (1932) stated that October 11 was the latest date that he had seen this species at Sioux City, Iowa. During the present study, the Virginia Rail first appeared on the research area April 30 in 1951 and 1953, and on April 29, 1952. The latest date that this species was seen on the research area was October 3, 1952, although one adult Virginia Rail banded on the research area July 11, 1952, was reported to have been caught in a muskrat trap December 1, 1953, near Glenwood, Minnesota, some 175 miles directly north of the research area. It was interesting to note that this bird is thus far the only Virginia Rail banded by the writers for which there has been a record from another area.

Records of the number of Virginia Rails seen per hour of observation in the marshes seemed to indicate that the main wave of migrants reached Dewey's Pasture during the first week of May, 1951. Nesting began almost immediately after the arrival of the birds.

In 1951, the observed nesting season began about May 13 and extended for a period of about 61 days until July 12. In 1952, the observed nesting season began about May 15 and extended for a period of about 48 days until July 1. Probably those few nests found to be active during July represented late renesting attempts following the destruction of earlier nests.

Virginia Rail nests were shallow, basket-like structures built of dead leaves or stalks of the species of marsh plants available at the nest sites. In most cases the nest material consisted of only one species of plant, never of more than three. The material in 27 (73.0 per cent) of 37 nests examined during the two years of study was lake sedge primarily. Four (10.8 per cent) of the 37 nests were built of river bulrush alone, two (5.4 per cent) of tussock sedge primarily, two (5.4 per cent) of cat-tail alone, one (2.7 per cent) of bur-reed primarily, and one (2.7 per cent) of river grass primarily. The nests were suspended a few inches above the water surface from stalks of emergent plants, or less frequently, were built within clumps of grass or tussock sedge. Nearly always the surrounding vegetation was bent down and loosely intertwined over the nest to form an arch or canopy partially or entirely concealing the eggs.

The nests were nearly identical in size and appearance with Sora nests and had about one-half the diameter of King Rail nests. Based on 15 nests measured to the nearest half-inch, the outside depth from the bottom of the nest to the rim ranged from 4.0 to 8.0 inches with a mean of 5.9 ± 0.4 inches and a standard deviation of 1.3 inches, while the inside depth from the floor to the rim ranged from 1.0 to 3.0 inches with a mean of 1.7 ± 0.1 inches and a standard deviation of 0.5 inches. The outside diameter ranged from 5.0 to 10.0 inches with a mean of 6.7 ± 0.3 inches and a standard deviation of 1.3 inches, while the inside diameter ranged from 3.5 to 6.0 inches with a mean of 4.5 ± 0.5 inches and a standard deviation of 0.6 inch.

The 37 occupied nests of the Virginia Rail found during the two years of study were distributed in six cover-types as follows: 24 (64.9 per cent) in lake sedge, four (10.8 per cent) in hard-stemmed and pale great bulrushes, four (10.8 per cent) in river bulrush, three (8.1 per cent) in cat-tail, one 2.7 per cent) in river grass and one (2.7 per cent) in blue-joint grass. The cover-types, named for the dominant plant species in the stand, usually included other plant species as well. An analysis of the plant species to which the nests were actually attached and anchored indicated that of the 37 nests, 23 (62.2 per cent) were suspended from lake sedge, five (13.5 per cent) from round-stemmed bulrush, four (10.8 per cent) from river bulrush and two (5.4 per cent) from cat-tail, while two (5.4 per cent) were built within clumps of cordgrass, and one (2.7 per cent) within a clump of bluejoint grass. In evaluating nesting cover it is important to bear in mind that the Virginia Rail

uses different plant communities in the various parts of its breeding range. Probably it is not the species of plant to which the bird responds, but rather the physical characteristics of that species and its value as nesting substrate (Beecher, 1942). Other plants growing in other regions of the Virginia Rail's breeding range may function as nesting substrate equally as well as those mentioned above. For example, Walkinshaw (1937) stated that along the Great Lakes in Michigan soft-stemmed bulrush afforded wonderful habitat for Virginia Rails.

The water-depth was measured to the nearest half-inch at 27 occupied nests in 1951 and at eight occupied nests in 1952. In the former year, the water-depth ranged from 6.0 to 18.0 inches with a mean of 12.1 ± 0.6 inches and a standard deviation of 3.2 inches, while in the latter it ranged from 11.5 to 22.0 inches with a mean of 14.8 ± 1.2 inches and a standard deviation of 3.2 inches. Billard (1947) reported that the mean depth of water at Virginia Rail nests in Connecticut was 2.6 inches, and Walkinshaw (1937) found that in Michigan the Virginia Rail nested over water 4 to 6 inches in depth. It seems likely that this species responds not to water-depth as such but rather to the plant community which is influenced by water-depth.

The average rate of egg-laying was about an egg a day, as shown by the histories of four nests as follows: eight eggs in eight days, five eggs in six days, seven eggs in eight days and four eggs in five days. Walkinshaw (1937) and Billard (1947) likewise concluded that the rate was an egg a day.

Although the first egg was laid in one nest as early as May 13, 1951, and as early as May 15, 1952, it was estimated that eggs were not laid in the majority of nests until the last week of May and the first few days of June.

In 1951, 23 complete clutches contained from four to 10 eggs and averaged 8.1 ± 0.4 with a standard deviation of 1.8, and in the following year the number of eggs in five complete clutches ranged from seven to 10 with a mean of 8.2 ± 0.6 and a standard deviation of 1.3. In Connecticut, Billard (1947) found that the average number of eggs per clutch was 9.33, based on 15 complete clutches. Walkinshaw (1937) found that the average number of eggs per clutch was 10.44 for nine nests in the Upper Peninsula of Michigan, and 8.06 for 13 nests in southern Michigan.

In some nests incubation began the day before the last egg was laid, and in others it began at the time the last egg was laid. As yet, the incubation period of the Virginia Rail has not been fully established. Bent (1926) believed it to be at least 15 days, while Walkinshaw (1937) and Wood (1937) concluded that it was 20 days, and Mousley (1940) and Billard (1947) found that it was 18 days. In the present study, the histories of four nests were known in sufficient detail to permit estimation of incubation periods. The periods were determined by noting the number of days which elapsed between the date that the last egg was laid and the date that the last egg in the nest hatched. In two of the four nests the incubaion periods were 22 and 18 days, respecively. In the third nest the incubation period was determined to be at least 18 days and in the fourth nest at least 18 days. In the latter nest, all the eggs were destroyed by a predator on the 18th day of incubation. At that time three of the eggs had begun to pip.

In individual nests hatching was completed within a period of from one to five days, usually two. The eggs were pipped from 24 to 48 hours before they hatched. In 1951 hatching occurred in the various nests from about June 6 until July 12. The eggs in the majority of the 20 nests, for which hatching data were available, hatched during the second and third weeks of June, those in six nests (30.0 per cent) between June 16 and June 20, and those in eight nests (40.0 per cent) between June 21 and June 25.

Of the 27 nests under observation in 1951, 21 (77.8 per cent) produced at least one chick. Of 190 eggs in the 27 nests, 144 (75.7 per cent) hatched. Bil-

lard (1947) in Connecticut found that 16 (64.0 per cent) of 25 nests under observation produced at least one chick, whereas 95.7 per cent of 139 eggs in 15 nests hatched. In the present investigation egg destroyers in order of their importance were small birds of unidentified species, raccoons, flood, and hail. Of 190 eggs in 27 nests under observation in 1951, 13 (6.8 per cent) in two nests were destroyed by small birds, 10 (5.3 per cent) in one nest were destroyed by raccoons, 10 (5.3 per cent) in one nest were destroyed by flood and nine (4.7 per cent) in one nest were broken by hail. Only two (1.1 per cent) eggs, one in each of two nests, were infertile. Two (1.1 per cent) eggs, disappeared from a clutch which otherwise remained unharmed. There were no cases of desertion.

Billard (1947) reported that avian predators destroyed the eggs in four (16.0 per cent) of 25 nests under observation in Connecticut. She believed that most of this destruction was caused by the Yellow-billed Cuckoo. Although in the present study the species of birds responsible for destruction of Virginia Rail eggs were not determined, it was believed that the Prairie Marsh Wren, the Red-wing, and the Black Tern were among the more likely suspects. Judging from the size of the punctures, the culprits were of rather small size, certainly smaller than a Crow. They neatly pecked away an end or side of the egg, removed and presumably ate the contents and left the empty shells stacked one inside the other in the nest. Allen (1939) stated that the Marsh Wren sometimes punches holes in the eggs of the Virginia Rail, and Walkinshaw (1937) reported that he had observed Prairie Marsh Wrens attempting to puncture Virginia Rail eggs.

Egg parasitism involving the Virginia Rail as the host and the Sora as the parasitic species was noted in one nest. The unusual history of one nest perhaps indicated intraspecific egg parasitism. When the nest was discovered June 5, 1951, it contained nine warm eggs. On June 9 an adult Virginia Rail was flushed from the nest. In the nest were one downy Virginia Rail chick, a tiny piece of egg shell and nine warm, unpipped eggs. Since the nine eggs did not hatch until sometime after June 20, it seemed probable that the egg from which the first chick hatched was laid much earlier than the others, perhaps by a different parent. Allen (1939) stated that the Virginia Rail and the Sora sometimes lay eggs in each other's nests and often successfully hatch the foreign eggs.

In 1951, 27 occupied nests, an average of a nest per 3.0 acres of cover, were found on 81.4 acres of habitat on Dewey's Pasture. All the 28 marshes on the research area were examined for nests in that year, and Virginia Rail nests were found on 12 (42.9 per cent) of them. In 1952, 10 occupied nests of this species, or a nest per 2.6 acres, were discovered on 26.5 acres of cover in the 10 ponds searched for nests. The highest nesting density, a nest per 0.3 acre, was found on an isolated 0.3-acre marsh covered by a dense stand of broad-leaved cat-tail. This marsh contained only one rail nest. The highest nesting density found by Billard (1947) in Connecticut was a nest per 0.7 acre, as noted on 6 acres of a 20-acre cat-tail marsh.

No evidence was obtained that the Virginia Rail defended a territory against members of its own or of other avian species. Occasionally the Least Bittern nested successfully within 6 feet of the nest of a Virginia Rail. Once, two pairs of Virginia Rails nested successfully within 56 feet of one another, and on another occasion a pair of Soras nested successfully within 56 feet of an occupied nest of the Virginia Rail. Billard (1947) in Connecticut found an occupied nest of the Virginia Rail as close as 15 feet to an occupied nest of the Sora.

The Virginia Rail is monogamous in its breeding habits. If it be assumed that each of the 27 nests found on the research area in 1951 represented a breeding pair of Virginia Rails, and that all of the nests present on the area

were discovered, there were 54 breeding adults, or one per 1.5 acres of cover, on the area in that year. Although it was, of course, probable that some first nests went undiscovered and that some of the nests which were found represented renesting attempts, these errors probably tended to compensate for one another. Nesting data gathered in 1952 were insufficient to serve as a basis for estimation of the population.

In the 21 successful nests on Dewey's Pasture in 1951, 160 downy young hatched, an average of 7.6 chicks per successful nest and about two per acre of habitat.

The young birds developed rapidly. Almost immediately after hatching they were able to walk, swim and even dive. By the second week of July, a number of the young birds already had lost the black natal down and were beginning to attain the dark-brown juvenal plumage. At this time an occasional bird was found to be in full juvenal plumage and capable of flight. By the second week of August, nearly all the juvenile birds were in full plumage and were able to fly. After the middle of September nearly all the young birds had finished molting into the reddish-brown adult plumage. At this time they could not be distinguished accurately from adults.

During the postnuptial molt in July and August, the adult Virginia Rail temporarily loses the power of flight when it molts all of its wing feathers simultaneously (Roberts, 1932). In 1951, three such flightless molting adults were trapped, the first of these on July 27, the second on August 13, and the third on August 29. In 1952, two were trapped, one on July 15 and the other on July 30. The flightless bird trapped on the former date was found to be in full plumage when recaptured August 24.

For several days after hatching the brood seemed to stay near the nest. According to Walkinshaw (1937), the young brood spends the night on the nest. As the season progressed and the young birds grew larger, they traveled farther from the nest site. For example, six (66.7 per cent) of a total of nine records of recaptured downy chicks were from the original point of capture and the remainder were from localities less than 200 yards distant, while of a total of 15 records of recaptured medium-sized juveniles not yet on the wing 10 (66.7 per cent) were from the original point of capture, four (26.7 per cent) were from localities between 100 and 200 yards distant and one (6.7 per cent) was from a point between 200 and 300 yards away from the original locality of capture.

After the young became fully fledged and capable of flight, they wandered more widely. Presumably it was when they were at this stage of growth that they first became independent of their parents. In any case, the trapping records seemed to indicate that the large juveniles traveled greater distances than did the adults. For example, nine (21.9 per cent) of the 41 records of recaptured large juveniles capable of flight were from the original point of capture, 10 (24.4 per cent) from points less than 100 yards distant, 13 (31.7 per cent) from points between 100 and 200 yards distant, five (12.2 per cent) from localities between 200 and 300 yards distant, one (2.4 per cent) from a point between 300 and 400 yards distant and three (7.3 per cent) from localities between 400 and 500 yards distant from the original site of capture. On the other hand, of 16 records of recaptured adults, seven (43.8 per cent) were from the original point of capture, three (18.8 per cent) from localities less than 100 yards distant and six (37.5 per cent) from localities between 100 and 200 yards from the original site of capture. No adults were recaptured at sites farther than 200 yards from the original point of capture.

The writers are indebted to the Iowa State Conservation Commission for permission to use Dewey's Pasture Public Shooting Ground as a research area, and to Conservation Officer B. I. Severson, and Area Manager Howard Walsh for their fine cooperation and aid throughout the investigation.

In summary, at the 402-acre Dewey's Pasture Public Shooting Ground, with 28 small marshes, Clay County, Iowa, 42 adult and 101 young Virginia Rails were banded and released, 1951 and 1952. The only band return known to the writers was reported from an adult Virginia Rail banded July 11, 1952, and caught in a muskrat trap December 1, 1953, near Glenwood, Minnesota, 175 miles directly north of the study area. April 29, 1952, was the earliest arrival date, and the latest sight record was October 3, 1952. On 107 acres of cover searched, 37 occupied nests were found in lake sedge primarily. Of 190 eggs in 27 nests 144 hatched between June 6 and July 12, 1951. In 28 complete clutches of both years were 227 eggs, an average of about 8 a clutch. The estimated time of incubation for 3 closely observed nests was 18 days, and 22 days for a fourth. An estimated 160 downy young hatched from 21 successful nests, 1951, to average 7.6 a clutch, or about 2 an acre of 81.4 acres of suitable cover.

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THE FALL IOU PICNIC AT DAVENPORT

The Tri-City Bird Club was host to the Iowa Ornithologists' Union in its annual fall picnic, held Sunday, September 19, at Credit Island, Davenport. Peter Petersen, Jr. was chairman of the Fall-get-together Committee, and the local arrangements made the meeting a success. The weather man cooperated in giving us a fine, clear, warm day for the event—one of those days when it is pleasant driving and ideal for outdoor luncheons.

Picnic lunches were spread on tables at the north end of Credit Island shortly after noon. The local club furnished coffee, ice cream and cake, which rounded out a fine luncheon. Several hours of visiting followed, and those who felt so inclined went on bird trips around the island, led by members of the Tri-City Club. Late in the afternoon members left for their homes in various Iowa cities, and another pleasant fall meeting ended.

SCENES AT THE FALL PICNIC, CREDIT ISLAND, SEPTEMBER 19

Upper photo, officers attending. President Kozicky, Librarian Ennis, Editor Pierce. Lower view, a group around the lunch tables.
Photographs by Norwood Hazard.

Attendance Register.—AMES, Dr. Geo. Hendrickson, Dr. E. L. Kozicky; CEDAR RAPIDS, Dorothy Brunner, Lavina Dragoo, Isabel Hoyman, Lillian Serbousek, Pauline Wershofen, Myra Willis; DAVENPORT: Mr. and Mrs. Lang Baily and two children, Mr. and Mrs. Harry Carl, Mr. and Mrs. C. C. Hazard, Norwood Hazard, Thos. Morrissey, Mr. and Mrs. Pete Petersen, Beverlee Scolara, Joey Scolara, Willie Wulf; EAST MOLINE, Mr. and Mrs. Elton Fawks, David Fawks, Patty Fawks; IOWA CITY: Mr. and Mrs. F. W. Kent, Dr. and Mrs. P. P. Laude; MOLINE, Mrs. Dorothy Cowley, Dave Johnson; MT. VERNON, Mrs. Marie West Berry, Mrs. Bessie Scobey, Dr. J. H. Ennis; ROCK ISLAND, Greg Cudworth, Dale Dickinson, Mr. and Mrs. Leo Deoring, Dick Haley, Larry Johnson, Larry Kott, Chas. Stewart, Kent Stewart, Bob Wise, Don Wolverton; SIGOURNEY, Mr. and Mrs. Forrest Millikin; STATE CENTER, Mr. and Mrs. Darwin Hilleman, Mrs. Manley Smith; WHEATLAND, Dollie Copp, Esther Copp; WINTHROP, Mr. and Mrs. F. J. Pierce, Mr. and Mrs. J. M. Pierce; NAPERVILLE, ILL., Dr. Warren Keck, Roy Kern; RICHMOND, VA., Jack Seibert. Total registered, 61.

IOWA DISTRIBUTIONAL CHECK-LIST

The Iowa Distributional Check-list is the result of a growth of the feeling that a state check-list which attempts to give the status of each species on a state-wide basis may be misleading to some extent. Although wholly within the prairie region, the State, with its area of 56,000 square miles, contains a number of types of terrain and has considerable variation in climate. The distance from the Minnesota line to the Missouri border is sufficiently great that some species which are migrants only in the south are nesters in the north, while other species which spend only the summers in the north are seen the year around in the south. There are also species to be seen in the west but occurring rarely, if at all, in the east, and *vice versa*.

The State has been arbitrarily divided into 9 sections by using north-and-south highways U.S. 169 and U.S. 63, and east-and-west highways Iowa 3 and Iowa 92 as the dividing lines. The status of each species, according to the information available, is given for each of the sections. To make the list reflect present-day conditions as far as possible, no records older than 15 years have been used.

The classifications used are:

SR, summer resident, seen during the greater part of each summer.
SV, summer visitor, seen in summer for short periods and not necessarily each year.
WR, winter resident.
WV, winter visitor.
M, migrant, seen yearly, usually both spring and fall.
SM or FM, spring or fall migrant only.
P, permanent resident, for presumably non-migratory species.
C, casual, seen very infrequently, although not out of its range.
A, accidental, denotes a species whose range does not include Iowa.

No indications of relative abundance have been attempted.

There are species which are to be seen the year around, but where it is believed the wintering population differs from those seen in the summer, these are designated as SR-WR. Many individuals of some species remain to nest in the State, or sections of it, while many others continue north to nesting grounds. Where it is felt that as many nest here as can find suitable nesting territories the species is considered a summer resident rather than a migrant. When only scattered nestings have been reported the classification of the species is given as migrant-summer resident. Isolated records of individuals which are not representative of the species, or a significant portion of it,

have been disregarded. All species' names are those of the A. O. U. Check-list, 4th edition.

The information used in the compilation of the Distributional Check-list was supplied by the following members of the Iowa Ornithologists' Union:
Northwest—B. O. Wolden, Estherville; C. S. Fitzsimmons, Sibley.
North-central—Mrs. W. C. DeLong, Lamont; Miss Pearl Knoop, Marble Rock.
Northeast—Arthur Palas, Postville; Oscar P. Allert, McGregor.
Central—Myrle Jones, Estherville; Mrs. Helen King, Grundy Center; Mrs. D. R. Hilleman, State Center.
East-central—Miss Esther Copp, Wheatland; Mrs. Helen G. Pike, Coggon; Peter Petersen, Jr., Davenport; Fred Kent, Iowa City; E. W. Steffen, Cedar Rapids; George Crossley, Farley.
Southwest—Myrle Jones; Mrs. Lawrence Pickering, Red Oak; Mrs. Frances Bordner, Shenandoah.
South-central—Mrs. W. C. DeLong.

Members of the Committee furnished data and, in many instances, the records of the Museum in the State Historical Building were relied upon to furnish the species' classifications.

The Distributional Check-list is shown in two sections; I, a list of species which are seen with some regularity in one or more sections of the State, and II, a list of stragglers and accidentals. As a matter of historical interest, there are also listed species which were not reported for inclusion in the present compilation, but which are represented by specimens taken in the State at some time in the past. These are taken from Jack Musgrove's "Check-list of Iowa Birds" published in 1949. These are divided into III, species extinct in Iowa prior to 1954, and IV, accidentals and stragglers into the State.

There are shown in addition species mentioned by Anderson in "The Birds of Iowa", 1907, and DuMont in a "Revised List of Iowa Birds", 1934, but for which no Iowa specimens are known. These are divided into V, reported by Anderson but placed by DuMont in the hypothetical class; VI, listed by Anderson as hypothetical; and VII, additional hypothetical listings by DuMont.

PINTAIL

From a drawing by E. W. Steffen

	Northwest	North-Cent.	Northeast	West-Cent.	Central	East-Cent.	Southwest	South-Cent.	Southeast
Loon, Common	m	m	m	m	m	m	m	m	m
Grebe, Holboell's			m		c	c	c		
Grebe, Horned	m	m	m		m	m			m
Grebe, Eared	m	m	m	m	m	m			
Grebe, Western				sm	a				
Grebe, Pied-billed	sr	sr	sr	sr	sr	sr	m	m-sr	m
Pelican, White	m	m	m	m	m	m	m	m	m-sv
Cormorant, Dbl.-crested	m	m	sr-m	m	m	sr-m	m	m	m-sr
Heron, Great Blue	sr	sr	sr	sr	sr	sr	sr	sr	sr
Egret, American	sv	sv	sv	sv	sv	sr	sv	sv	sr
Heron, Little Blue			sv		c	sv		sv	sv
Heron, Green	sr	sr	sr	sr	sr	sr	sr	sr	sr
Heron, Black-crn. Night	sr	sr	sr	m	sr	sr	sr	sr	sr
Heron, Yellow-crn. Night		c			c	c	c		c
Bittern, American	sr	sr	sr	sr	sr-m	sr	sr	m	sr
Bittern, Least	sr	sr	sr	sr	sr	sr	sr		sr
Swan, Whistling	m	m	m	m	m	m			m
Goose, Common Canada	m	m	m	m	m	m	m	m	m
Goose, White-fronted	m		m	m	sm	m	m		m
Goose, Snow	m	m	m	m	m	m	m	m	m
Goose, Blue	m	m	m	m	m	m	m	m	m
Mallard, Common	sr	sr	sr	sr-m	sr-m	sr wr	m	m	m-sr
Duck, Black	m	m	m	m	m	m	m	m	m
Gadwall	m	m	m	m	m	m	m	m	m
Baldpate	m	m	m	m	m	m	m	m	m
Pintail, American	m-sr	m	m	m	m	m	m	m	m
Teal, Green-winged	m	m	m	m	m	m	m	m	m
Teal, Blue-winged	sr	sr	sr	sr	sr	sr	m sr	m	m
Teal, Cinnamon					c	c	c		
Shoveller	m	m	m sr	sr-m	m	m	m	m	m
Duck, Wood	sr	sr	sr	sr	sr	sr	m	sr	sr
Redhead	sr	sr	m	m	m	m	m	m	m
Duck, Ring-necked	m	m	m	m	m	m	m	m	m
Canvas-back	m	m	m	m	m	m	m	m	m
Duck, Lesser Scaup	m	m	m	m	m	m	m	m	m
Golden-eye, American	m	m	m	m	m	m-wr	m	m	m-w
Buffle-head	m	m	m	m	m	m	m	m	m
Old Squaw	c			c	c	c			c
Scoter, White-winged	m	m	m	fm	a	m		m	m
Scoter, Surf	m			afm	a				
Duck, Ruddy	sr	sr	m	m	m-sr	m	m	m	m
Merganser, Hooded	m	m	sr-m	m	m	m sr	m	m	m
Merganser, American	m	m	m-wr	m	m	m-wr	m	m	m
Merganser, Red-breasted		m	m	m	m	m	m	m	m
Vulture, Turkey		m	sr	sr-m	sr	sr	sr	sr	sr
Goshawk	wv		wv	wv	wv	c			c
Hawk, Sharp-shinned	m-sr	m	m-sr	sr	sr	sr	m sr	m	m
Hawk, Cooper's	m-sr	m	m sr	sr	sr	p	m sr	sr	m-sr
Hawk, Red-tailed	p	p	p	p	p	p	p	p	p
Hawk, Red-shouldered	p	p	p	p	p	p	p	p	p
Hawk, Broad-winged	m-sr	m	sr	sr-m	m	m	m	m sr	m sr
Hawk, Swainson's	sr	sr		fm	m-sr	sr	m		
Hawk, Amer. Rough-legged	wr	wv	wv	wr	wv	wv-m	wr		wr
Rough-leg, Ferruginous	c	c			c	c	c		
Eagle, Golden	m		fv	m	m	a	m		
Eagle, Bald	m		m	m	wv	wr	m	wv	m-wr
Hawk, Marsh	p	p	p	p	p	p	p	p	p
Osprey	m	m	m	m	m	m	m	m	m

	Northwest	North-Cent.	Northeast	West-Cent.	Central	East-Cent.	Southwest	South-Cent.	Southeast
Falcon, Prairie	wv	m		wv		c			
Hawk, Duck	m	m	sr	m	m	m		m	m
Hawk, Pigeon	m	m	m	m	c	c		m	m
Hawk, Sparrow	p	p	p	p	p	p	p	p	p
Grouse, Ruffed			p			p			
Chicken, Gr. Prairie	wv	p		wr					
Partridge, European	p	p	p	p					
Bob-white	p	p	p	p	p	p	p	p	p
Pheasant, Ring-neck	p	p	p	p	p	p	p	p	p
Crane, Sandhill	m		m	fm		c	sm		m
Rail, King	sr		sr	sr	sr	m-sr	m-sr	m-sr	m
Rail, Virginia	sr	m	sr	sr	m	m	m-sr	sr-m	
Sora	sr	sr	sr	sr	sr	sr	m-sr	m	m
Rail, Yellow			m		sm			m	m
Gallinule, Florida	sr	sr	sr	m-sr	c	m-sr		m	m
Cott, American	sr	m	m	m-sr	m-sr	m	m-sr	m	m
Plover, Piping	m		m	m-sr	c	m		m	
Plover, Semipalmated	m		m	m	m	m	m	m	m
Kildeer	sr	sr	sr	m-sr	sr	sr	sr	sr	sr
Plover, Amer. Golden	m	m	m	m	m	m	m	m	m
Plover, Black-bellied	m	m	m	sm	sm	m	m	m	m
Turnstone, Ruddy	m		m	sm		c			
Woodcock, American	m		sr		m	sr		m	m
Snipe, Wilson's	m	m	m	m	m	m	m	m	m
Plover, Upland	sr	sr	sr	sm-sr	m-sr	sr	m	sr	sr
Sandpiper, Spotted	sr	sr	sr	sr	sr	sr	sr-m	sr	m-sr
Sandpiper, Solitary	m	m	m	m	m	m	m	m	m
Willet			m	m	m	m	m	m	
Yellow-legs, Greater	m	m	m	m	m	m	m	m	m
Yellow-legs, Lesser	m	m	m	m	m	m	m	m	m
Sandpiper, Pectoral	m	m	m	m	m	m	m	m	m
Sandpiper, White-rumped	m			m	m	m	m	m	m
Sandpiper, Baird's	m			m	m	m	m	m	m
Sandpiper, Least	m	m	m	m	m	m	m	m	m
Sandpiper, Red-backed	m	m	m	m	m	m	m		m
Dowitcher	m	m	m	m	m	m	m		m
Sandpiper, Stilt	m	m		m	m	m	m		m
Sandpiper, Semipalmated	m	m	m	m	m	m	m	m	m
Godwit, Marbled	m					m			
Godwit, Hudsonian	m	m		m	sm	m	m		m
Sanderling	m			m	m	m		m	m
Avocet				m	c	c	m		
Phalarope, Wilson's	m	m	m	m-sr	m	m	m	m	m
Phalarope, Northern	m		m	m	m	m			
Gull, Herring	m	m	m-wv	m	m	m-wr	m	m	m
Gull, Ring-billed	m	m	m-wv	m	m	m-wv	m	m	m
Gull, Franklin's	m	m	sv	m	m	m	m	m	m
Gull, Bonaparte's		c	m	m	cfm	m			
Tern, Forster's	sr-m	m	m	m	m	m	m	m	m
Tern, Common	m		m	m	m	m	m	m	
Tern, Least	m			m-sr	c	m			
Tern, Caspian	m		m	m	m	m		m	m
Tern, Black	sr	sr	sr	m-sr	sr	m-sr	m-sr	m	m
Dove, Rock					p				
Dove, Mourning	sr	sr	sr-wr	sr-p	sr-p	sr-p	sr	sr-wr	sr-wr
Cuckoo, Yellow-billed	sr	sr	sr	sr	sr	sr	sr	sr	sr
Cuckoo, Black-billed	sr	sr	sr	sr	sr	sr	sr	sr	sr
Owl, Barn	p	p	p	p	p	p	p	p	p
Owl, Screech	p	p	p	p	p	p	p	p	p

	Northwest	North-Cent.	Northeast	West-Cent.	Central	East-Cent.	Southwest	South-Cent.	Southeast
Owl, Great Horned	p	p	p	p	p	p	p	p	p
Owl, Snowy	wv	wv	wv	wv	wv	wv		wv	c
Owl, Burrowing	sr			sr	a		a		a
Owl, Barred	p	p	p	p	p	p	p	p	p
Owl, Long-eared	p-wv	m	sr-wv	p	wr	wr	wr	wr	wr
Owl, Short-eared	m-wr	m	wv	p	wr	wr-sr	wr	wr	wr
Owl, Saw-whet	c			cwv	wr	wr	a	a	
Whip-poor-will	m	m	sr	sr	sr	sr	sr	sr	sr
Nighthawk	sr	sr	sr	sr	sr	sr	sr	sr	sr
Swift, Chimney	sr	sr	sr	sr	sr	sr	sr	sr	sr
Hummingbird, Ruby-throat	sr	sr	sr	sr	sr	sr	sr	sr	sr
Kingfisher, Belted	sr	sr	sr-wv	sr	sr-wv	sr-wr	sr	sr-wr	sr-wr
Flicker, Yellow-shafted	sr-p	sr	sr	p	sr-wr	sr-wr	sr-p	sr-wr	sr-wr
Flicker, Red-shafted				wv	a				
Woodpecker, Pileated			p		cp	p			p
Woodpecker, Red-bellied	p	p	p	p	p	p	p	p	p
Woodpecker, Red-headed	sr	sr	sr-wr	p	sr-wr	sr-wr	sr	sr-wr	sr-wr
Sapsucker, Yellow-bellied	m	m	m-sr	m-sr	m-sr	m-sr	m	m	m-cwv
Woodpecker, Hairy	p	p	p	p	p	p	p	p	p
Woodpecker, Downy	p	p	p	p	p	p	p	p	p
Kingbird, E.	sr	sr	sr	sr	sr	sr	sr	sr	sr
Kingbird, Arkansas	sr-m	c	sr	sr	asr	a	m-sr		
Flycatcher, Crested	sr	sr	sr	sr	sr	sr	sr	sr	sr
Phoebe, E.	sr	sr	sr	sr	sr	sr	sr	sr	sr
Flycatcher, Yellow-bellied	m	m	m		sm	m		m	m
Flycatcher, Acadian	m	m		sr	sr	sr	sr	m	
Flycatcher, Alder	sr	sr	sr	sr	sr	sr	sr	sr	m
Flycatcher, Least	sr	sr	sr	sr	sr	sr	sr	m	m
Pewee, E. Wood	sr	sr	sr	sr	sr	sr	sr	sr	sr
Flycatcher, Olive-sided	m	m	m	m	m	m	m	m	m
Lark, Horned	p-wr	p-wr	sr	p	p	p	sr-p	sr-wr	sr-wr
Swallow, Tree	m	m	sr	sr	sr	sr	m	m	m
Swallow, Bank	sr	sr	sr	sr	sr	sr	sr	sr	sr
Swallow, Rough-winged	sr	sr	sr	sr	sr	sr	sr	sr	sr
Swallow, Barn	sr	sr	sr	sr	sr	sr	sr	sr	sr
Swallow, Cliff	m	sr-m	m-sr	sr	sr	sr	m-sr	m	sr
Martin, Purple	sr	sr	sr	sr	sr	sr	sr	sr	sr
Jay, Blue	p	p	p	p	p	p	p	p	p
Magpie, American	wv	c		wv			a		a
Crow, Eastern	p	p	p	p	p	p	p	p	p
Chickadee, Black-capped	p	p	p	p	p	p	p	p	p
Titmouse, Tufted	p	p	p	p	p	p	p	p	p
Nuthatch, White-breasted	p	p	p	p	p	p	p	p	p
Nuthatch, Red-breasted	m-wr	m-wv	wv	wv	m-wv	m-wv	wr	m	m
Creeper, Brown	wr-m	wr-m	wv	wr	wr	wr-sr	wr	wr	wr
Wren, House	sr	sr	sr	sr	sr	sr	sr	sr	sr
Wren, Winter	m	m	m-wv	m	m-wv	wr-m	m-wv	m	m-wv
Wren, Bewick's		m			sr	sr	m	m	sr
Wren, Carolina	m	m	sr	sv	sv-sr	wr-sr	m	sr-wr	sr-wr
Wren, Prairie Marsh	sr	sr	sr	sr	sr	sr	sr	sr	sr
Wren, Short-billed Marsh	sr	sr	sr	sr	sr	sr	sr	sr	sr
Mockingbird	c	c	csr	csr	c	sr	c	sr	sr
Catbird	sr	sr	sr	sr	sr	sr	sr	sr	sr
Thrasher, Brown	sr	sr	sr	sr	sr	sr	sr	sr	sr
Robin	sr	sr	sr	sr-wr	sr-wr	sr-wr	sr	sr-wr	sr-wr
Thrush, Wood	sr	sr	sr	sr	sr	sr	sr	sr	sr
Thrush, Hermit	m	m	m	m	m	m	m	m	m
Thrush, Olive-back	m	m	m	m	m	m	m	m	m
Thrush, Gray-cheek	m	m	m	m	m	m	m	m	m

	Northwest	North-Cent.	Northeast	West-Cent.	Central	East-Cent.	Southwest	South-Cent.	Southeast
Thrush, Willow	m	m	m	cm	sm	m	m	m	m
Bluebird, E.	sr	sr	sr	sr-wr	sr-wr	sr-wr	sr-p	sr	sr
Gnatcatcher, Blue-gray	sr	sr	sr	sr	sr	sr	sr	sr	sr
Kinglet, Golden-crown	m	m-wv	m	m-wv	m-wv	m-wv	m	m-wv	m-wv
Kinglet, Ruby-crown	m	m	m	m	m	m	m	m	m
Pipit, American	m	c	m	m	sm	m	m	m	m
Waxwing, Bohemian	wv	c	wv	m	c	wv			c
Waxwing, Cedar	sr-wr	m	sr-wr	m-sr	sr-wr	sr-wv	m	m-sr-wr	p
Shrike, Northern	wv	m	wv	wv	wv	wv		wv	wv
Shrike, Migrant	sr	sr	sr	sr	sr	sr	sr	sr	sr
Starling	p	p	p	p	p	p	p	p	p
Vireo, White-eyed		c			a	c		m	c
Vireo, Bell's	sr		sr	sr	sr	sr	sr	sr	sr
Vireo, Yellow-throat	sr	sr	sr	sr	sr	sr	m	sr	sr
Vireo, Blue-headed	m	m	m	m	m	m	m	m	m
Vireo, Red-eyed	sr	sr	sr	sr	sr	sr	sr	sr	sr
Vireo, Philadelphia		m	m		m	m	m	m	m
Vireo, Warbling	sr	sr	sr	sr	sr	sr	sr	sr	sr
Warbler, Black & White	m	sr-m	sr-m	m-sr	m	m	m-sr	m	m
Warbler, Prothonotary			sr	m-sr	m	sr	fm	m	sr
Warbler, Worm-eating					c	m	m	m	
Warbler, Golden-winged	m	m	sr	sm	m	m		m	m
Warbler, Blue-winged			sr	sm	sm	m		m	m
Warbler, Tennessee	m	m	m	m	m	m	m	m	m
Warbler, Orange-crown	m	m	m	m	m	m	m	m	m
Warbler, Nashville	m	m	m	m	m	m	m	m	m
Warbler, Parula		m	m	sm	m	m-sr		m	m
Warbler, Yellow	sr	sr	sr	sr	sr	sr	sr	sr	sr
Warbler, Magnolia	m	m	m	m	m	m	m	m	m
Warbler, Cape May	m	c	m	sm	sm	m		m	m
Warbler, Blk.-thr. Blue		m	m		m	m		m	
Warbler, Myrtle	m	m	m	m	m	m	m	m	m
Warbler, Blk.-thr. Green	m	m	m	sm	m	m	m	m	m
Warbler, Cerulean	m	c	m-sr	sm	m	m-sr	m-sr	m	m
Warbler, Blackburnian	m	m	m	sm	m	m	m	m	m
Warbler, Chestnut-sided	m	m	m	m	m	m	m	m	m
Warbler, Bay-breasted	m	m	m	sm	m	m	m	m	m
Warbler, Black-poll	m	m	m	m	m	m	m	m	m
Warbler, Pine	m	m	m	sm	m	m		m	
Warbler, Palm	m	m	m	m	m	m	m	m	m
Oven-bird	sr	m	sr	sr	sr	sr	sr-m	sr-m	sr-m
Water-thrush, Grinnell's	m	m	m	m	m	m	m	m	m
Water-thrush, Louisiana	m	m	m-sr	sm	sm	m-sr	m	m	m
Warbler, Kentucky			m-sr	sm	sm	m-sr	sr	m	m
Warbler, Connecticut	m	m	m	m	sm	m	m	m	m
Warbler, Mourning	m	m	m	m	m	m	m	m	m
Yellow-throat	sr	sr	sr	sr	sr	sr	sr	sr	sr
Chat, Yellow-breasted	sr		sr	sr	sr	sr	sr	sr	sr
Warbler, Wilson's	m	m	m	m	m	m	m	m	m
Warbler, Canada	m	m	m	m	m	m	m	m	m
Redstart, American	sr	sr	sr	sr	sr	sr	sr-m	sr-m	m
Sparrow, English	p	p	p	p	p	p	p	p	p
Bobolink	sr	sr	sr	sr	sr	sr	sr-m	m	m-csr
Meadowlark, E.	sr-wr	sr-wr	sr-wr	sr-wr	sr-wr	sr-wr	sr-wr	sr-wr	sr-wr
Meadowlark, W.	sr-wr	sr-wr	sr-wr	sr-wr	sr-wr	sr-wr	sr-wr	sr-wr	sr-wr
Blackbird, Yellow-headed	sr	sr	sr	sr	m-sr	m	m-sr	m	c
Redwing	sr	sr	sr	sr-wr	sr-wr	sr-wr	sr	sr	sr
Oriole, Orchard	sr	c	sr	sr	sr	sr	sr	sr	sr
Oriole, Baltimore	sr	sr	sr	sr	sr	sr	sr	sr	sr
Blackbird, Rusty	m	m	m	m	m	m-wv	m	m	m
Blackbird, Brewer's	m	m	m	m	m	m	m	m	m
Grackle, Bronzed	sr	sr	sr	sr	sr	sr	sr	sr	sr
Cowbird, E.	sr	sr	sr	sr	sr	sr	sr	sr	sr

	Northwest	North-Cent.	Northeast	West-Cent.	Central	East-Cent.	Southwest	South-Cent.	Southeast
Tanager, Scarlet	sr	sr	sr	sr	sr	sr	sr	sr	sr
Tanager, Summer							sr	m	c
Cardinal	p	p	p	p	p	p	p	p	p
Grosbeak, Rose-breasted	sr	sr	sr	sr	sr	sr	sr	sr	sr
Grosbeak, Blue				sr			sr		
Bunting, Indigo	sr	sr	sr	sr	sr	sr	sr	sr	sr
Dickcissel	sr	sr	sr	sr	sr	sr	sr	sr	sr
Grosbeak, Evening	cwv		cwv	wv	awv	awv			
Finch, Purple	m	m	m-wv	m	m-wv	m-wv	m	m-wv	wv-m
Redpoll, Common	m	c	wv	wv	wv	wv			
Siskin, Pine	m	m	m	wr	wv	m-wv			wv
Goldfinch	p	p	p	p	p	p	p	p	p
Crossbill, Red	wr		cwv	wv	wv	wv			c
Towhee, Red-eyed	m	sr	sr	sr	sr	sr	sr	sr	sr
Towhee, Arctic				m-wr	cwv		wr		
Bunting, Lark	c			c					
Sparrow, Savannah	m-sr	sr	m-sr	m	m-sr	m-sr	m	m	m
Sparrow, Grasshopper	sr	sr	sr	sr	sr	sr	sr	sr	sr
Sparrow, Leconte's	m	m	m	m	m	m			m
Sparrow, Henslow's	m	m	m	m	m	m	m	m	m-sv
Sparrow, Nelson's					sm-fm				
Sparrow, Vesper	sr	sr	sr	sr	sr	sr	sr	sr	sr
Sparrow, Lark	sr-m	sr	sr	sr	sr	sr	sr	sr	sr
Junco, Slate-colored	wr-m	wr	wv-m	wr	wr	wr	wr	wr	wr
Sparrow, Tree	wr-m	wr	wr	wr	wr	wr	wr	wr	wr
Sparrow, Chipping	sr	sr	sr	sr	sr	sr	sr	sr	sr
Sparrow, Clay-colored	sr	sr	m-sr	m	m	m	m	m	m
Sparrow, Field	sr	sr	sr	sr	sr	sr	sr	sr	sr
Sparrow, Harris's	m	m	m	m	m-wv	m-wv	m	m	m
Sparrow, White-crowned	m	m	m	m	m-wv	m	m	m	m
Sparrow, Gambel's	m		m	m	m		m		m
Sparrow, White-throat	m	m	m	m	m-wv	m-wv	m	m	m
Sparrow, Fox	m	m	m	m	m-wv	m-wv	m	m	m
Sparrow, Lincoln's	m	m	m	m	m	m	m	m	m
Sparrow, Swamp	m	sr-m	sr	m	m	m	m	m	m
Sparrow, Song	sr	sr-wr	sr	sr	sr-wr	sr-wr	sr	sr-wr	sr-wr
Longspur, Lapland	wr	wr		wv	wv	m-wr	wv	wv	wv
Bunting, Snow	wv	c		c	a	cwv			

II. ACCIDENTALS OR STRAGGLERS

Loon, Pacific					a	a			
Loon, Red-throated						a			
Anhinga							a		
Ibis, White-faced Glossy				a					
Egret, Snowy					a	sv			c
Scoter, American						c			
Eider, King						a			
Scaup, Greater	c	c					c		
Gyrfalcon	a								
Curlew, Long-billed						c			
Sandpiper, Western					c	m		m	
Gull, Glaucous				c		c			
Wren, Rock				c					
Warbler, Hooded						m			
Warbler, Townsend's						a			
Bunting, Lazuli				c	a				
Grosbeak, Pine				c	awv				a
Crossbill, White-winged			cwv						
Sparrow, Baird's					a				
Junco, Montana		c			c	a			
Junco, Cassiar					c				
Longspur, Smith's		c	c		c				

The following species were not reported for inclusion in the Distributional Check-list, but are represented by specimens taken in the State at some time in the past.

III. EXTINCT IN IOWA PRIOR TO 1954.

Trumpeter Swan
E. Turkey
Whooping Crane
Eskimo Curlew
Passenger Pigeon
Louisiana Paroquet
American Raven

IV. ACCIDENTALS OR STRAGGLERS

E. Brown Pelican
Man-o-war Bird
Wood Ibis
European Widgeon
W. Harlequin Duck
American Eider
Black Vulture
Swallow-tailed Kite
Mississippi Kite
Harris's Hawk
Sharp-tailed Grouse
Black Rail
Hudsonian Curlew
American Knot
Buff-breasted Sandpiper
Ruff
Black-necked Stilt
Parasitic Jaeger
Long-tailed Jaeger
Atlantic Kittiwake
Sabine's Gull
Brunnich's Murre
Groove-billed Ani
Great Gray Owl
Nuttall's Poor-will
Lewis's Woodpecker
Arctic Three-toed Woodpecker
Say's Phoebe
Clark's Nutcracker
Carolina Chickadee
Russet-backed Thrush
Mountain Bluebird
Sprague's Pipit
N. Prairie Warbler
Sycamore Warbler
Gray-crowned Rosy Finch
McCown's Longspur
Chestnut-collared Longspur

No Iowa specimens for the following species are known.

V. REPORTED BY ANDERSON BUT PLACED BY DU MONT IN THE HYPOTHETICAL CLASS.

American Brant
Barrow's Golden-eye
Mexican Goshawk
Arizona Scaled Quail
Red Phalarope
Purple Gallinule
Laughing Gull
American Hawk Owl
Chestnut-backed Bluebird

VI. LISTED BY ANDERSON AS HYPOTHETICAL.

White Ibis
Emperor Goose
European Teal
Purple Sandpiper
Great Black-backed Gull
Gull-billed Tern
Richardson's Owl
W. Wood Pewee
Townsend's Solitaire
Kirtland's Warbler
Western Tanager
Black-headed Grosbeak
Hoary Redpoll
Bachman's Sparrow
Golden-crowned Sparrow

VII. ADDITIONAL HYPOTHETICAL LISTINGS BY DU MONT

Fulvous Tree Duck
Ground Dove

I.O.U. COMMITTEE ON BIRD DISTRIBUTION

Dr. J. Harold Ennis
Rt. Rev. Msgr. Thos. J. Feeney
Thomas Morrissey
Jack W. Musgrove
William Youngworth
Woodward H. Brown, Chairman

(NOTICE TO READERS: Copies of this Distributional Check-List, made up as an 8-page separate, are available at 25c each. Address our Librarian, Dr. Harold Ennis, Cornell College, Mt. Vernon, Iowa.)

GENERAL NOTES

Glossy Ibis at Swan Lake.—On the evening of August 10, 1954, Mrs. Meyer and I observed a White-faced Glossy Ibis at Swan Lake, in Johnson County. The lake had almost dried up at this date except for a few open pools and some weed-grown marshy places. The ibis was feeding in one of the pools in the company of a family of Wood Ducks, a number of Blue-winged Teal, and a Great Blue Heron. On August 11, Mr. and Mrs. Fred Kent observed the ibis in the same place during the afternoon. In the evening Dr. and Mrs. Peter Laude, Miss Lillian Serbousek and Miss Myra Willis found it at the same spot. It was associated with the same group of ducks and in addition there were large numbers of shore-birds feeding in the vicinity. It was seen a number of times in the following week, and on August 21 it was collected by Walter C. Thietje, Curator of the Natural History Museum of the State University of Iowa. It may now be seen as a mounted specimen in the museum at Iowa City. This species is so rarely seen in the midwest, the record with accompanying specimen is an important one.—ALFRED W. MEYER, Cedar Rapids, Iowa.

WHITE-FACED GLOSSY IBIS

Collected August 21, 1954, specimen in University of Iowa Natural History Museum. Photograph by Fred W. Kent.

White-winged Crossbills at Sioux City.—Strong, 50-mile-an-hour, north winds on November 1, 1954, brought in a profusion of bird life, including some White-winged Crossbills. While cleaning up the garden, I flushed a male and female Crossbill, but they were tame and perched within 10 feet of me. I heard others calling from an adjacent yard, so it was apparent that a small flock had paid us a visit.—WM. YOUNGWORTH, Sioux City, Iowa.

Bell's Vireo Nesting in Southeast Iowa.—On May 22, 1954, a Bell's Vireo was found singing in a thicket about 4 miles north of Wheatland. In June a pair hung a dainty nest of birch bark, spider silk and fine plant fibers from a twig of hawthorn about 10 feet high. During the afternoon the sun shone directly upon it. A mile east of town, in a willow thicket, another Bell's Vireo was heard in June, but I did not search for the nest.—C. ESTHER COPP, Wheatland, Iowa.

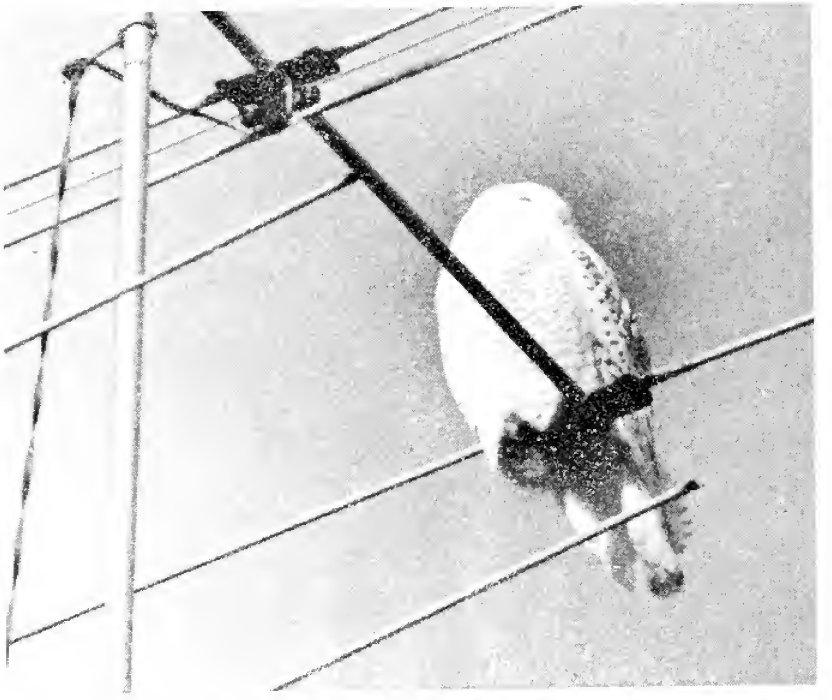
An "Anting" Robin.—Early in the fall of 1954 I saw what I believe was my first "anting" bird. I was sitting on the front porch when a Robin came to the front walk. The bird began reaching down into the crack between the sections of walk, then would reach back and put its bill under its wings and body. It did this repeatedly, and though I didn't see any ants, it seemed fairly certain that the bird was picking up the ants and using them as has been described by several authorities.—RUSSELL M. HAYS, Waterloo, Iowa.

Snowy Owl from Muscatine County.—A lightly mottled adult male Snowy Owl has been received by the Davenport Public Museum. The specimen was shot by duck hunters on Geneva Island, Muscatine County, Iowa, on November 21.

The presence of this bird on an "off" cycle year indicates that the lemming population of the far north may have not recovered from last year's cyclic low. At best, it would be wise for birders to keep this species in mind as a possibility this winter.—A. LANG BAILY, Davenport, Iowa.

Black-throated Blue Warbler.—It is with pleasure that I report the sighting and identification of the Black-throated Blue Warbler, male and female, in southwest Iowa. These warblers were sighted at the bird bath in my yard on October 3, 1954. Verification was furnished by Mr. and Mrs. William Collins and Mrs. Frances Bordner, all of Shenandoah. This bird bath is very conducive to many types of migrating and resident birds due to its close proximity to bushes, trees and feed. Other warblers observed in the fall of 1954 were: Wilson's, Nashville, Myrtle, Tennessee, Mourning, Orange-crowned, and Canada.—EDWARD C. VAUGHN, Shenandoah, Iowa.

Sparrow Hawks Chasing Pigeons.—On October 22, 1954, my attention was attracted by what seemed to be an unusual amount of activity on the part of the pigeons which are a part of downtown Des Moines. Upon looking more closely, I noticed that from time to time one of the birds visible was a Sparrow Hawk. It developed there were three Sparrow Hawks alternately soaring high above the buildings or circling below the roof levels and occasionally chasing the pigeons. One of the falcons made two passes at a pigeon perched on a roof not 100 feet from my window. This pigeon seemed not alarmed, merely pulling in its neck as the falcon passed overhead with not more than 2 or 3 inches separating them. The whole performance was obviously in a spirit of play. At intervals the Sparrow Hawks perched on the building flagpoles, and after an hour or so they disappeared.—WOODWARD H. BROWN, Des Moines, Iowa.



AN EARLY SNOWY OWL RECORD IN CEDAR RAPIDS

On November 5, 1954, a big Snowy Owl chose the TV antenna on the F. A. Scolaro home, 2420 First Ave. NE, Cedar Rapids, as a perch. A school boy sighted the owl at 7:30 a.m., and it was there several hours later. This photograph was taken by Tom Merryman and is used through the courtesy of the Cedar Rapids "Gazette."

RECENT BIRD BOOKS

WILD FOWL DECOYS, by Joel Barber (Dover Publications, Inc., New York, 1954; cloth, 4to, pp. i-xxv+1-156, with 4 colored plates & 134 other illustrations from drawings & photographs; price, $8.50).

There is a certain affinity between duck hunters and bird students. They both try to get their birds, but by different means. There is also a relationship among collectors of duck books, duck stamps, and duck decoys. It is with the latter that the present book deals. We believe there is enough related interest in the subject to warrant a brief review of it here.

The late Joel Barber was fascinated by duck decoys and began to study and collect them. His collection grew and he began to travel widely in search of new and different decoys. He soon found himself an investigator of local history as it pertained to hunting. He resolved to put his discoveries and researches into book form. The book that grew out of this resolve was published in 1934 and became a classic in its field. It went out of print in a short time and is now a book collector's prize, bringing $50 to $100 on the auction market.

The new edition which Dover has just published is a very handsome book, but it has been limited to 1500 copies—which suggests that it too will be sought-after in future years. The entire book has been reset, 14 new illustrations have been added, and there is a preface written by Barber's friend, Dr. George Ross Starr, Jr.

All types of decoys are described, from the early American Indian decoys, roughly fashioned from mud or dried grass, to the modern commercial kinds which are familiar to all hunters. The greater portion of the book is devoted to the carved wooden decoy, which originated in Colonial days and reached its perfection about the time of the Civil War. Wood lent itself most readily to knife and paint brush, and probably to the imagination of the carver.

The author gives various history sidelights. Passenger Pigeon decoys are shown and described; we learn that the decoy played a part in the destruction of the Wild Pigeon in the days of our grandfathers. There were also decoys for snipe and various kinds of shorebirds. All these are pictured.

Ornithological literature is published on many angles and in a multiplicity of forms. The subject of duck decoys may be but a distant relative, but it is an interesting one. Those who peruse this book will agree on this point.—F. J. P.

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INTRODUCTION TO OUR BIRD FRIENDS, by L. B. Carson (Capper Publications, Inc., Topeka, Kans., 1954. Paper covers, pp. 1-27, with drawings by Orville O. Rice; price, 25c).

Mr. Carson, who is one of our IOU members, deserves a great deal of praise for the hard work he expended on this booklet. The finished product is a delight to the eye as well as a fine educational work. With the distribution that Capper Publications will be able to give it, it will certainly do a great deal of good, reaching thousands of farm boys and girls and awakening in them an interest in birds. Older readers will also enjoy the booklet.

There are 50 bird biographies, each illustrated by an unusually good line drawing by Mr. Rice. Each bird is briefly described, and important facts about its appearance, call notes or song, nest, food, habitat and migration are included. Under each picture is an appropriate jingle—also intended to attract youthful readers.—F. J. P.

MEMBERSHIP NEWS

Among those who attended the American Ornithologists' Union meeting at Madison, Wisconsin, in early September were Dr. Harold Ennis of Mt. Vernon, Norwood Hazard, Lang Baily and Peter Petersen, Jr. of Davenport. Mr. Baily read a paper entitled "A Bird Population Survey Method," of which John Chapin of the University of Colorado was co-author. Petersen reported 102 species of birds for the convention, including Pigeon Hawk and Oldsquaw.

Editor Pierce and wife, and Mr. and Mrs. J. M. Pierce, went on a short vacation trip through the southeastern states in September. The first day of the trip, September 19, included a stop at Davenport for the IOU fall picnic. They went on to Kentucky where they visited Henderson (home of Audubon for nine years, now marked by the very fine Audubon Museum and Memorial Park) and Mammoth Cave. From there they went on to the Smoky Mountains, then visited parts of North Carolina, Georgia, Alabama and Mississippi, with a return home through Arkansas and Missouri.

James Hodges, of Davenport, received a B.A. degree in Philosophy and Economics from St. Ambrose College in June. He was married to Miss Beverly Cassily of Davenport on July 17, and entered the University of Iowa graduate school, Iowa City, in the fall term. He is working for the M.A. degree in Labor Relations, and hopes to stay on for a Ph. D. in Industrial Engineering or perhaps a law degree. Mr. Hodges has long been interested in the literature of Iowa ornithology, and lately has begun work on an annotated bibliography of Iowa birds. A great loss to the University Library was the third volume of a three-volume manuscript work, "The Literature of Iowa

Birds," by Paul Bartsch (presented to the State University of Iowa as a thesis for the degree of Master of Science in 1899). Vol. 3 disappeared from the library files in about 1947-48 and has never been accounted for. Mr. Hodges' voluntary work in this field is intended partially to make up for the loss of the valuable Bartsch volume.

Dr. Herbert Brandt, one of our distinguished members and author of "Texas Bird Adventures," "Alaska Bird Trails," and "Arizona and Its Bird Life," had an unusually fine trip to the Arctic during the summer of 1954. He wrote the Editor of "Iowa Bird Life" a long letter telling of his varied experiences and sent him seven large photographs showing different scenes of the expedition. We wish we had space for the entire letter, but shall have to be content with the following excerpts (letter of September 24, 1954).

"Were I to tell you the actual story of my 42nd full-length expedition seeking nature truths, you might deem it a fairy tale, or at best boasting heroics; suffice it to say, that the Fourth Arctic Expedition of the Bird Research Foundation was successful beyond even my most ambitious objectives. Through the generous good offices of Robert Anderson, U. S. Deputy Secretary of Defense, and an old Texas field companion . . . I became a guest of the Dominion of Canada. He persuaded Mr. C. M. Drury, Canadian Deputy Minister of Defense, to fly my party by Royal Canadian Air Force to Coral Harbour, on Southampton Island, which borders Hudson Bay on the north, where we made our headquarters. Engaging an able Eskimo, who brought together the 12 biggest dogs in the village, I sledded some 250 miles over the sea ice and snowless tundra, where I made a careful ecological avian transect of an influential Arctic delta, the Ford, covering an area of about 40 square miles . . . .

"On three occasions I had the excitement of camping out on the tundra for considerable periods of time, often in some of the rawest weather that I have ever endured in the North. That is really a rugged country when the wind is off the Greenland Icecap. We were caught in a highly exciting early break-up of the ice, but luckily escaped and even saved our wonderful specimens. In addition, later I had the thrill of flying by RCAF some 700 miles farther north, where I visited the vicinity of northern Baffinland and Cornwallis Island, reaching a position about 1000 miles from the Pole . . .

"Although I wrote nest-side data on 40 species, nevertheless I was able to add only 10 new forms to my personal list of life histories. When one has reached a total of 710 such adventures, new experiences come along slowly. I did have that wonderful thrill, however, that comes with meeting such birds as the American Brant, and how I prize that social call, King Eider, Whistling Swan, Hutchins Goose, Blue Goose, White-rumped Sandpiper, Bendire Pigeon Hawk, American Black-bellied Plover, Ruddy Turnstone, and other fabulous feathered creatures. To enumerate further, I have now gazed across the threshold of 47 different shorebirds, 43 waterfowl, and 44 diurnal birds of prey. Surely this is excitement rich enough for any old bird tracker!

"Of interest to you, perhaps, is that I brought home with my 400 specimens, some 40,000 words that I wrote in my journal. This should provide sufficient material, were I able properly to correlate it, to complete my manuscript on 'Birding in Florida and Manitoba Northward: A Naturalist's Adventures Along the 82° Longitude West, from Tropics to Arctic.' According to my considered studies, this strip in many respects is the most interesting ecological vertical transect in the Northern Hemisphere . . . The behavior of the birds that I have met on their native heath, the entire length of Florida, across the Smokies, through Ohio, Ontario, the Hudson Bay country, and northward, together with the ecological impacts all the way from the Gulf Stream to the Hudson Bay Icebox, creates lots to talk about."