

The

BLUEBIRD

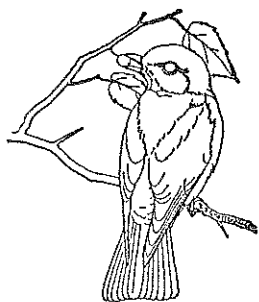


THE AUDUBON SOCIETY OF MISSOURI

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The Audubon Society of Missouri

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It is the purpose of the Audubon Society of Missouri to further conservation education in all its aspects with particular emphasis on wildlife. The Audubon Society of Missouri is dedicated to the proposition that only through education can a total conservation consciousness be insured and will constantly try to further this education at all levels.

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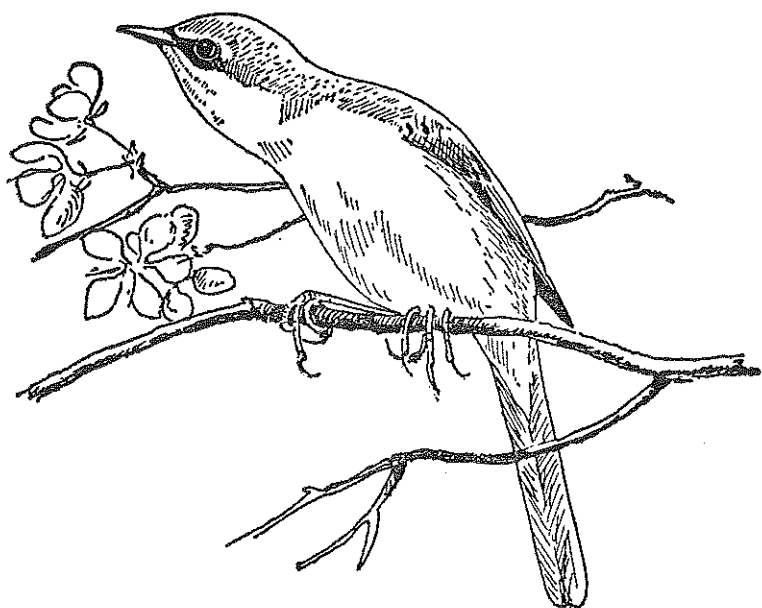
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Line Drawings by David Plank



Yellow-breasted Chat



DAVID
PLANK

Cerulean Warbler

THE BLUEBIRD

Volume 34

Number 1

Editor's Comments

It is indeed a tribute to the late, eminent Rachel Carson that Senator Gaylord Nelson of Wisconsin recently introduced into Congress a bill to outlaw sale of DDT throughout the United States. His bill may not survive the current round of legislation but if not, it certainly will be reconsidered. Sooner or later it, or a similar bill, will be passed.

This is so because all evidence against DDT is growing, both in volume and in accuracy. On New York's Long Island there is a case now in the courts to ban use of DDT. The New York supreme court has granted a temporary injunction against use of the pesticide by the Suffolk County Mosquito Control Commission. It is a test case, to be sure, but one that is attracting national attention toward two interlocking issues: (1) whether the rapidly accumulating evidence against DDT as a detriment to man's environment has validity in the courts, and (2) whether a citizen's constitutional rights are violated by the deliberate pollution of environment by such a noxious pesticide. It should be a most interesting case. When it is over, the National Audubon Society will publish the entire court proceedings with the aid of its Rachel Carson Memorial Funds.

In the meantime, we should remind ourselves, as the legal counsels are certain to learn, that the whole matter of pesticide use involves complex, sophisticated factors—not simple black and white answers. DDT's use on a lake cannot be judged solely on how well it kills insects, nor even on how much residue is accumulated in the bodies of fishes which eat the poisoned insects. The matter involves *all* levels of organisms, *all* members of complex food chains. This is because DDT's greatest fault is that it does not decompose, it does not break down chemically. It accumulates, it builds up, and it is transmitted unchanged from prey to predator, from fish to eagle, or from fish to man. Its effects are as pervasive and subtle as nuclear radiation.

The indictment against DDT is growing and the evidence is stirring up a rebellion among the American people. It will surely reach the halls of Congress. To paraphrase an otherwise trite commercial, then, *the DDT rebellion needs you.*

The I. R. Kelso Wildlife Sanctuary

For many years the Audubon Society of Missouri has owned 27 acres of property known as the Springdale Bird Sanctuary, located outside of Cape Girardeau and along the Mississippi River. Heirs of the original donors, Judge and Mrs. I. R. Kelso, recently decided to donate 30 additional acres to the property. A local committee consequently agreed to change the name of the present 57 acres to "I. R. Kelso Wildlife Sanctuary".

At the time of this generous donation, a legal problem made itself evident. The Society's constitution, through oversight in keeping abreast with current internal revenue codes, did not provide for receipt of tax-exempt gifts. The 30 acres were thus deeded to Southeast Missouri State College with the same reverter clauses and protection clauses as provided for the original 27 acres. Two organizations now own the property instead of one but its management will remain the same as before.

It should now be noted that the Audubon Society of Missouri has since corrected its constitution by amendment, that it can indeed accept tax-exempt gifts in accordance with internal revenue codes.

The late Fern Braden, through her will, has made it possible for the Audubon Society of Missouri to receive \$100.00 from her estate. This amount was made payable to the National Audubon Society but stipulated for use in Missouri, therefore the National Society endorsed the check to our State Society. Miss Braden was an active Audubonite from St. Louis.

ATTEND THE ANNUAL MEETING

CAMP RISING SUN

Lake of the Ozarks State Park

OCTOBER 7 and 8, 1967

THE BLUEBIRD is the official publication of the Audubon Society of Missouri. Articles, essays and reports on all phases of natural history and conservation are welcomed and will be printed within limits of space available. Manuscripts should be typed, double-space, on one side of 8½x11 paper. Illustrations should be in the form of glossy prints, 5x7 or larger, or as original drawings. Send articles and other correspondence to the editor: James P. Jackson, 105 Terry Lane, Washington, Mo. 63090.

Bird Mortality at KOMU-TV Tower, Columbia, Missouri, Fall 1965 and 1966

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Missouri Cooperative Wildlife Research Unit
University of Missouri, Columbia

On the night of 19-20 September, 1966, many passerine birds were killed by striking the television tower and its guy wires, 6 miles south of Columbia, Missouri. This tower is 775 feet high and beneath it 618 birds of 32 species were collected the next day; seven of the most numerous species were subjected to sex and age analysis. The purpose of this paper is to present data obtained from this kill along with reports on two kills the previous year, kindly supplied by J. Wofford, B. Schranck and L. Stadnyk.

Weather conditions the night of the 1966 kill are summarized below. (Data from U. S. Weather Bureau at Columbia Municipal Airport, about 8 miles northwest of the TV tower.)

	5:00p.m.	6:00p.m.	7:00p.m.	9:00p.m.	Midnight
Ceillometer reading	400'	900'	800'	1500'	1200'
Temperature	61°F	61°F	63°F	61°F	60°F
Visibility	1 mile, rain and fog	3 miles, rain and fog	2 1/2 miles, fog	4 miles, fog	3 miles, fog
Wind	NNW-15mph	N-23-32	N-18	N-20	N-17-23

Although the height of the cloud ceiling at the TV tower may have varied somewhat from that at the Airport it seems likely that the cloud layer extended down to the top of the tower for several hours at dusk and immediately after. It is probable that heaviest mortality occurred before 9:00 p.m. when the cloud ceiling lifted, but continuing fog may have permitted the kill to continue.

The number of television towers, particularly tall towers, is rapidly increasing in the United States. There are now about 50 towers over 1,200 feet in height, and two that are 1,750 feet, in Georgia and Tennessee (Aldrich et al. 1966).

In recent years there have been many reports of large kills of nocturnal migrants at television towers and airport ceilometers. Tordoff and Mengel (1956) analyzed TV tower kills near Topeka, Kansas, and pointed out seven types of information that could be obtained from such kills: (1) species and dates of their occurrence; (2) relative abundance of the species; (3) comparative sizes of males and females, immatures and adults; (4) the times of migration of males, females, adults, and young; (5) the status of molts and plumages; (6) the subspecies of the migrants; and (7) physiological

data, such as amount of body fat. They also noted the need for analyses of large samples of birds from different areas before final conclusions are drawn. Johnston and Haines (1957) reported on the examination of a sample of over 2,500 birds killed at a ceilometer near Macon, Georgia, at approximately the same time as the Topeka kills. They obtained data on sex, age, weight, fat deposition, and made subspecific determinations of a large number of birds. More recently, Raveling (1965) took measurements on several samples of Tennessee warblers killed at an Eau Claire, Wisconsin, tower. He believed that it was possible to estimate the origin of each flight of birds by comparing measurements of each kill with measurements of museum specimens from different parts of the breeding grounds of the species.

Methods and Results

After each kill at the KOMU-TV tower the dead birds were collected the next morning. The majority of the birds were found, although some escaped notice when they fell on the roof of the TV station or were removed by predators. Most of the birds were near the base of the tower, indicating that they had hit the tower itself, rather than the cables. Species and numbers collected are given in Table 1.

Seven of the most numerous species were sexed and aged by members of a University of Missouri class in Wildlife Management. The data are included in Table 1.

Birds were sexed by dissection and observation of the gonads. The degree of ossification of the skull was used to determine age (Miller 1946, Nero 1951). In adult birds the skull is two-layered, nearly white, and covered with white dots. Skulls of the immature birds are of one layer, transparent or pink, and not dotted. The presence or absence of the bursa of Fabricius was used to verify the skull character in each species. The bursa (present only in immature birds) was found by using a technique similar to that described by Wight (1956). A transverse incision was made with a scalpel between the vent and the tail. The bursa, when present, then appeared as a pink sac extending dorsally from the intestine near its termination at the vent.

Due to truck and auto traffic, some specimens were unfit for internal examination, hence the totals summed horizontally in Table 1 do not always equal the totals for the species.

Discussion

The limited size of the samples permits few conclusions, but some interesting suggestions appear. In 1965 the species composition of the two kills was similar; the smaller kill of 28 birds included as many (15) species as did the kill of 205 occurring one week earlier in September and included 4 not represented the previous week. This is an example of how tower-kill data can provide a picture of the sequence of fall migrants.

In 1966 the kill again came in September rather than October, as have so many large tower kills in the United States (Brewer and Ellis 1958). The number of individuals was 3 times as large as the 1965 big kill and the number of species was twice as large. The heavy previous kill at this tower, October 5, 1954, included 62 species among the 1887 individuals picked up.

TABLE 1 - KOMU-TV TOWER KILLS

	1965		1966				
	Sept 22	Sept 27	Males		Females		
			Adult	Immature	Adult	Immature	
Sora	0	0	4				
Mourning Dove	0	0	1				
Eastern Kingbird	0	0	1				
Wood Pewee	0	0	5				
Empidonax							
Flycatchers	1	0	0				
Catbird	60	2	40	12	5	4	6
Wood Thrush	0	0	2			1	
Swainson's Thrush	53	3	53	18	5	16	6
Gray-cheeked Thrush	5	1	22	1	7	3	7
Yellow-throated							
Vireo	1	0	1				
Solitary Vireo	0	0	1				
Red-eyed Vireo	16	2	126	12	21	43	33
Philadelphia Vireo	0	0	1				
Black and White							
Warbler	0	3	18				
Tennessee Warbler	1	0	92	21	0	48	5
Nashville Warbler	2	3	3				
Yellow Warbler	0	0	3				
Magnolia Warbler	0	0	7				
Black-throated							
Green Warbler	0	0	1				
Blackburnian Warbler	0	0	4				
Chestnut-sided							
Warbler	0	1	12				
Bay-breasted Warbler	0	1	8				
Ovenbird	7	3	27	7	5	8	2
Northern Waterthrush	5	0	9				
Connecticut Warbler	0	0	1				
Mourning Warbler	0	1	0				
Yellowthroat	0	0	131	14	22	17	44
Canada Warbler	0	0	2				
Redstart	1	0	1				
Bobolink	0	0	16				
Baltimore Oriole	1	1	0				
Scarlet Tanager	3	0	1				
Rose-breasted							
Grosbeak	23	2	22				
Dickcissel	0	1	2				
Indigo Bunting	0	1	0				
Grasshopper Sparrow	36	3	0				
Swamp Sparrow	0	0	1				
Total	205	28	618				
Species	15	15	32				
Red Bat	0	0	1♂				

Another sizeable kill, September 24, 1960, showed 41 species among the 658 dead birds gathered by M. U. graduate students (Easterla et al. 1961).

All the sizeable kills recorded by us have occurred within a two-week period from September 20-October 5 but have shown considerable variation in composition. In 3 of 4 cases yellow-throats ranked first, but in the 1965 kills they did not appear. Again in 3 of 4 cases, catbirds, red-eyed vireos, Tennessee warblers, ovenbirds, and Swainson's thrushes have ranked very high.

The data indicated that, with the exception of the Tennessee warbler, adults and young of all species examined for age were migrating together at this date. This conclusion agrees with that of Murray (1966), who mist-netted birds throughout the fall in New Jersey. This is important support for the belief that in most passerines the young follow or are guided on their first migration by the parents, hence they may maintain traditional travel routes.

About 93% of our Tennessee warblers were adults, while in the Kansas kills almost no adults were found, and Murray found 31% in his all-fall sampling. Our yellowthroats were 30% adults, while in the Kansas kills in early October Tordoff and Mengel (1956) found 52% adults. If several such groups of data can be gathered for a number of years, we may eventually be able to piece them together, learn what the normal or average percent of young is in each species and thereby be able to compute the rate of recruitment in the population and its rate of replacement or "turnover." With waterfowl and bobwhite these standard computations are made each year from young saved by hunters, thus valuable indices to annual production and mortality are obtained.

A series of kills in one year would provide maximum information on the flight chronology. This points up to the need for our finding one cooperator at each tower so that prompt notification of every large kill can be had in time to permit pickup of fresh birds and their subsequent freezing and processing.

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Fall Survey – August 15 through November 30

Compiled by Richard A. Anderson

1147 Grenshaw Dr., St. Louis, Mo. 63137

Fall on the whole was mild. There were the usual ups and downs temperature-wise with, as usual, a record or two broken. Record highs in mid-November were common in many sections of the state. Rainfall in St. Louis for this period was normal, but could not make up the three inch deficit that summer left. Rainfall in St. Joseph was almost non-existent. November was the driest on record at St. Joseph with only .01 inch of rain. St. Louis had 2.25 inches for the same period. Comparing normal rainfall, St. Joseph is supposed to be four inches ahead of St. Louis by the end of November. This year St. Joseph was over nine inches behind St. Louis and almost 14 inches below normal for the 11 month period. One obvious result was that the St. Joseph area contained good mud flats, which resulted in good observations on shorebird flights. The normal rain in St. Louis kept water levels up and shorebirding was very poor. Cool fronts in some areas and accompanying rains in mid-September and mid-October paralleled good waves of warblers and other land birds.

Loons through Herons—Five common loons were sighted at Fellows Lake near Springfield during October and November (I.F.). Two were seen at Little Dixie near Columbia October 7 to November 11 (A.J.). The only loon at St. Joseph was at Browning Lake on November 5 (F.L.). Grebes were reported down this fall at St. Joseph, possibly due to low water. A horned grebe was at Shawnee-Mission Lake on November 19 (E.C.). Two or three horned grebes were in the Springfield area in October and November (F.L.). The only eared grebe was one at Fellows Lake on November 19 (I.F.). Both horned and eared were missed in eastern Missouri. Ike Adams identified a western grebe at Little Dixie Lake on November 20.

White pelicans were first noted at Squaw Creek on August 28. A high count of 1500 was noted on October 6 (F.L.). The only pelicans in the St. Louis area were two at Gilbert Lake the third week of October. Three cormorants were at Lake Springfield October 14 to November 15 (I.F.). The usual small numbers were seen at St. Louis. All herons were reported in smaller than normal numbers with no reports of rarities.

Waterfowl—There were no reports of swans. Canada geese made news at Swan Lake Wildlife Refuge near Sumner, Missouri, in early October. 1300 Canadas died between October 2 and October 12. The apparent cause of the kill was aspergillosis (a mold of the feet). The disease was apparently contracted in a northern area since the birds were dying upon arrival. No

Editor's note—The Fall Survey reported here by Dick Anderson is his last; for various reasons he has chosen to "retire" from this duty. His reports have been of high quality, always, and represent a great deal of work. Fortunately for us, Floyd Lawhon has agreed to continue reporting the seasonal surveys so ably instigated by Dick.

cases have been reported since mid-October. Irving Fay reports he was watching for meteors on the night of November 17 when a flock of Canada geese was hard overhead. Their occasional honks changed to wild honking at the burst of a large meteor. The goose flight was pretty normal. Blue and snow geese were noted October 9 at Springfield (I.F.). Many flocks of Canada, blue-snow were noted in the Kansas City area during October and November by Elizabeth Cole and Mary Louise Meyers. Seven different flocks were noted on October 26 (M.L.M.). Elizabeth Cole reports a newspaper article stating two Tule geese were shot at Trimble Wildlife Refuge. The first heavy concentration at Squaw Creek was on September 25 with 7000 geese and 20,000 ducks.

Diving ducks were up at St. Joseph this fall (F.L.). The duck reports for Springfield include gadwalls (more numerous than mallards until late November), a few canvasback on all lakes during November, 30 to 50 ring-necked in November and 2 to 6 hooded mergansers during October to November. Five hooded mergansers were found on Shawnee-Mission Lake on November 19 (E.C.). The duck flight at St. Louis was ordinary except for two white-winged scoters at Weldon Springs seen by Andy Bromet.

Hawks—Floyd Lawhon reports all species of hawks were down in the St. Joseph area. However, large numbers of immature red-tails were noted between St. Louis and Columbia during November (D.A.). An early Harlan's was found at Squaw Creek on September 25 (F.L.). The first for the St. Louis area was one in Warren County on October 23 (P. Bauer). Rough-legged hawks appeared at Camp Towanyak on October 16 and 22 and November 17 (M.L.M.). Two Harlan's and two rough-legged were seen at Maryville on December 4 (D.E.). A golden eagle was found at Squaw Creek on December 11 (D.E.). Six marsh hawks were at Squaw Creek on September 25. Sounds good, but not when compared with counts of 30 to 50 in a day in previous years. Ospreys were down at St. Louis, but probably trickled through rather than in groups as last year. One was at Quivera Lake on October 22 (E.C.). A peregrine falcon was seen in late October at St. Louis (K. Arhos) and one was studied at Fellows Lake on October 23 by Leonard Confer (fide I.F.).

Shorebirds through Terns—Shorebirding was very poor in the St. Louis area due to an almost complete lack of habitat. Jim Haw reports the same for Charleston. Squaw Creek comments by Floyd Lawhon include: killdeer numerous at the end of November, piping clover last seen on September 1, both golden and black-bellied plovers still present in late November. The late date for lesser yellow legs was November 24, for pectoral November 12, for least sandpiper November 27 and for semi-palmated sandpiper November 13. The stilt sandpiper was most numerous this fall. Three buff-breasted sandpipers were found by Floyd Lawhon near Horseshoe Lake on September 24. The last avocets were four at Mud Lake on October 29. James Fairlee reported 30 avocets at Mud and Horseshoe Lake over Labor Day weekend. Two northern phalaropes were found at Trimble on September 1 (F.L.).

No gulls except ring-bills and a few immature herrings were found at St. Louis this fall. 150 Franklin's were at Squaw Creek on October 16, but all other gulls were conspicuous by their absence (F.L.). Three to ten Caspian terns were at Lake Springfield September 6 to 15 (I.F.). Four Caspians

were at Horseshoe Lake September 17 and 24 (F.L.). 25 Forster's terns were found at Lake Springfield on September 15 (I.F.).

Cuckoos through Swallows—Both cuckoos were generally scarce. A late yellow-billed was seen at Maryville on November 23 (D.E.), and a black-billed was seen by many at the state meeting on October 8. A roadrunner was caught by a cat near 9th and Missouri Avenue in Joplin, Missouri. Fortunately, the bird was rescued by several young boys and was apparently not seriously injured. The only saw-whet owl reported was one from Squaw Creek in early December (D.E.). E. Cole reports her last whip-poor-wills on September 13. Nighthawks were generally late. As an example, M. L. Meyers saw at least 15 on October 6 and one as late as October 24. Unusual is that there were no red-shafted flickers from the St. Joseph area (F.L.). Red-headed woodpeckers, following their every other year pattern, were well below last year's numbers. A western kingbird strayed to the St. Louis area on September 18 (D.A., S. Vasse). The last scissor-tailed flycatcher report from Springfield was on September 27 by Leonard Confer. Olive-sided flycatchers were more common than usual in the St. Joseph area (F.L.). Harold Burgess reports a gathering of an estimated five million swallows on September 22 at Squaw Creek.

Nuthatches through Waxwings—The first red-breasted nuthatch report was one at St. Joseph on September 5 by John Hamilton. However, as expected, this species was very scarce in comparison to a year ago. Brown creepers were common throughout late October through November. Fifteen creepers were at Camp Towanyak on October 26 (M.L.M.). The Carolina wren population in the St. Louis area has been restored after a seven year uphill struggle (D.A.). They are again stronger in St. Joseph (F.L.) and E. Cole reports a Carolina has finally returned to her home to replace their wintering Bewick's. Ten short-billed marsh wrens were found near Blodgett, Missouri, on August 21 by Jim Haw. They were found at Trimble on September 1 (F.L.). A mockingbird was first seen at Camp Towanyak on November 17 (M.L.M.). It is interesting to compare the mockingbird which occurs only in winter in Shawnee area and in eastern Missouri where it is a permanent resident.

A Swainson's thrush was found at Big Oak on September 6 (J. Haw). They were common at St. Joseph until September 24 (F.L.). The bluebird recovery is an almost exact parallel to the Carolina wren. It has taken the same number of years to come back to their former numbers. Bluebirds were seen in good numbers at St. Louis, they were plentiful at St. Joseph (F.L.) and were up at Salem, Missouri (D.P.). As many as 40 bluebirds were found at Camp Towanyak (M.L.M.). Kinglets were about normal. A wave of both species were at Camp Towanyak on October 20. The only water pipit reported was on October 23 near Knobnoster Park (S.H.).

Vireos and Warblers—Early warblers included chestnut-sided and golden-winged at Big Oak Park on September 6. A small wave was noted at Knobnoster Park on September 11 (S.H.). This wave included 8 blackburnians and 8 black-throated greens. The heaviest movement was recorded between September 15 and 20. Heavy concentrations were noted at St. Louis September 15 to 17. A good wave was noted on September 18 at Knobnoster (S.H.). A small wave occurred at Camp Towanyak on September 16

(M.L.M.). On the night of September 19-20, bad weather caused 618 (minimum) birds to hit the KOMU-TV tower at Columbia. Of the 618 birds 450 were of the vireo and warbler families. The heaviest toll was 131 yellow-throats followed by 126 red-eyed vireos and 92 Tennessee warblers. E. Cole reported a good wave at her home on October 17-18, which included a rare pine warbler. Floyd Lawhon's best warbler was a very rare black-throated blue at St. Joseph on September 12.

Bobolinks through Tanagers—By now Missouri birders know that bobolinks *do* occur in fall migration. Further evidence included 16 bobolinks in the KOMU-TV tower kill. Western meadowlarks were reported from St. Joseph to St. Louis. Floyd Lawhon reports an estimated one million common grackles flying to roost near his home at St. Joseph on the evening on October 26. Tanagers were about normal, except for a male western tanager found on August 21 by Frank Erb at his home in St. Louis County.

Seed eaters—The last dickcissel in the Charleston area (southeast Missouri) was August 28. This is about normal, but the dickcissel at Maryville (northwest Missouri) on November 23 represents an extremely late straggler. Purple finches were late and well below last fall's flight. The first date at Camp Towanyak was October 26 (M.L.M.) and at Columbia November 11 (A.J.). Floyd Lawhon saw only one in the fall period. All observers report a predominance of males. As Alice Jeffrey points out, last year the ratio was about 10 females to one male. Fine siskins were scarce. Red crossbills invaded northwestern Missouri, but only two reached St. Louis. The first crossbills at St. Joseph were found at Ashland Cemetery on September 24 by John Hamilton. Of the 20 birds, two-thirds were adult males. The two at St. Louis were both males. Crossbills at Maryville numbered as high as 38 birds (D.E.).

Juncoes and tree sparrows were several weeks late. Chipping sparrows have been noted in spring flights at St. Louis to number 30 to 50 birds. Now Floyd Lawhon notes flocks of 30 to 30 birds during September and October. Field sparrows were late in leaving the St. Joseph area (F.L.). Harris' sparrows were more common in the eastern portion of the range. They were common in St. Louis in November, at Columbia (A.J.) and at Salem (D.P.). They were also more numerous at Springfield (I.F.). Dave Plank reports a heavy sparrow flight at Salem on October 23-24. The first date for Lapland longspurs at St. Joseph was November 20 (J. Hamilton). Twenty Smith's long-spurs were seen near Lowry City, Missouri, on November 25 (S.H.).

D. A. — Dick Anderson
E. C. — Elizabeth Cole
D. E. — Dave Easterla
I. F. — Irving Fay
S. H. — Steve Hilty

A. J. — Alice Jeffrey
F. L. — Floyd Lawhon
M. L. M. — Mary Louise Meyers
D. P. — Dave Plank

Christmas Census in Missouri: 1966-1967

The last Christmas census in Missouri was no record-breaker as it was a year ago. Only eleven counts were reported instead of seventeen and a total of 112 species, subspecies and races were recorded instead of the previous 124. This is not to suggest we did badly. Yet one major purpose of the census is to make year by year comparisons over identical areas. This year we did not follow up on new counts which were initiated a year ago. Granted that we try increasing our statewide coverage, new counts should require repetition year after year to be of any value.

One census outside of Missouri is included in this report. Though Pere Marquette State Park and its environs are indeed in Illinois, we hasten to add that the census in that area was surely close enough to Missouri and outstanding enough to be worthy of our interest.

Rarities observed on the census counts include the following: 2 loons and an eared grebe at Springfield, both black and turkey vultures at Mingo, an osprey at Kansas City, 7 wild turkeys at Mingo, a lone catbird at Springfield, a veery at Mingo which—we are loath to admit—was not accepted by the National Audubon Society, 3 Bohemian waxwings and 4 red crossbills at St. Joseph, 6 spotted towhees at Kansas City and Oregon juncos on *five* different counts. One notable omission this year was the red-shafted flicker. Once again, just as a year ago, an estimated 1,000,000 red-winged blackbirds at Squaw Creek comprised by far the largest number of individuals reported. The total of individual birds was 1,218,497 as opposed to 2,901,370 one year ago. A total of 171 observers participated in the counts.

Due to a limited budget, and consequently limited space, *The Bluebird* cannot now print all the information which normally accompanies Christmas census reports. We are thus omitting weather data and the names of all observers except those who did the compiling. The editor will accept all brickbats for omissions with one suggestion: that if we repeat this cumulative report in future years, a small fee be assessed each census group to defray the costs of printing *complete* reports. As census takers are fully aware, this is precisely what the National Audubon Society requires for its Christmas census report.

On the following six pages, then, is a compilation of all birds recorded by the census groups listed below:

(1) *Big Oak Tree State Park*: 52 species and about 5086 individuals, by 3 observers in 1 party — compiled by Jim Haw.

(2) *Columbia, Mo.*: 55 species and 5,434 individuals, by 17 observers in 6 parties — compiled by Lisle Jeffrey.

(3) *Gray Summit*: 42 species and about 952 individuals, by 2 observers in 1 party — compiled by Donald R. Hays.

(4) *Kansas City*: 60 species and 57,535 individuals, by 13 observers — compiled by Felicia L. Bart.

(*This listing continued on page 18*)

CHRISTMAS CENSUS IN MISSOURI

	Big Oak Tree State Park	Columbia, Mo.	Gray Summit	Kansas City	Mingo National Wildlife Refuge
Common Loon					
Eared Grebe					
Pied-billed Grebe	6			1	4
Double-crested Cormorant					
Great Blue Heron			1		4
Canada Goose	527	37			4500
Lesser Canada Goose					
Snow Goose					
Blue Goose					
Mallard	2	300	6	3031	2600
Black Duck		2			2
Gadwall	2			2	2
American Pintail	13	2		2	31
Green-winged Teal					120
American Widgeon					3
Shoveller					3
Wood Duck					125
Redhead					
Ring-necked Duck					12
Canvasback					
Lesser Scaup	2			20	5
Common Goldeneye				1	
Bufflehead					
Ruddy Duck					
Hooded Merganser				1	
American Merganser				247	
Turkey Vulture					1
Black Vulture					4
Goshawk					
Sharp-shinned Hawk				1	1
Cooper's Hawk	1			1	2
Red-tailed Hawk	5	29	1	10	33

TABULATIONS FOR 1966-1967

Orchard Farm, Missouri	Pere Marquette State Park, Ill.	St. Joseph, Mo.	Springfield, Mo.	Squaw Creek Nat. Wildlife Refuge	Weldon Springs, Missouri	SPECIES TOTAL
			2			2
			1			1
	1		36			48
1	5		4			14
153	1000		22	3454	700	10393
			1			1
	3500	350		625		4475
	6500	150		331		6981
13207	65000	152	155	1000	1902	87355
	121			1	6	132
12			22		16	56
7	55		8	2	14	134
4	1		19		13	157
8	12		30		13	66
	2		5			10
				8	10	143
	2		14			16
	1		132		10	155
248	569		4			821
11	696		15			749
109	285		4			399
	3		8			11
2	2		2			6
			15			16
33	750		20			1050
						1
						4
				1		1
					1	3
						3
14	60	16	9	20	21	218

	Big Oak Tree State Park	Columbia, Mo.	Gray Summit	Kansas City	Mingo National Wildlife Refuge
Harlan's Hawk					2
Red-shouldered Hawk	2		1		10
Rough-legged Hawk	1			2	
Golden Eagle					1
Bald Eagle					10
Marsh Hawk	2	5		1	3
American Osprey				1	
Sparrow Hawk	9	12	1	7	2
Bobwhite	15	69	1	86	2
Ring-necked Pheasant					
Wild Turkey					7
American Coot				9	90
Killdeer				1	2
Common Snipe		1			
Herring Gull					
Ring-billed Gull		5			
Mourning Dove	102	32	4	39	15
Screech Owl				4	
Great Horned Owl		2		5	
Barred Owl	1	2	1		2
Short-eared Owl		2			
Belted Kingfisher				2	
Yellow-shafted Flicker	21	36	25	69	18
Pileated Woodpecker	5	5	2		2
Red-bellied Woodpecker	23	43	8	63	16
Red-headed Woodpecker	2	13	5	2	110
Yellow-bellied Sapsucker	8	1	1		1
Hairy Woodpecker	1	8	1	12	2
Downy Woodpecker	22	36	10	53	10
Horned Lark	34	131		2	
Blue Jay	19	112	15	139	206
Common Crow	1302	109	20	59	100
Black-capped Chickadee		83	4	136	
Carolina Chickadee	41		9		21
Tufted Titmouse	10	67	16	115	43
White-breasted Nuthatch	4	6	2	6	
Red-breasted Nuthatch				8	
Brown Creeper	11	1	1	5	9
Winter Wren				1	
Carolina Wren	8	29	5	12	11

Orchard Farm, Missouri	Pere Marquette State Park, Ill.	St. Joseph, Mo.	Springfield, Mo.	Squaw Creek Nat. Wildlife Refuge	Weldon Springs, Missouri	SPECIES TOTAL
	1	1		7		11
						13
	1			16		20
						1
2	78		1	96		187
1	4		1	38	2	57
						1
6	20	8	10	1	5	81
14	46	12	35	60	58	398
		1		25	1	27
						7
			132		10	241
		3	13			19
			10			11
3	6		3			12
65	300		8			378
14	105	5	7	15	2	340
	1					5
1	3	5	2	3	1	22
	2					8
1				1		4
	1	1	10		1	15
8	78	67	11	12	52	397
4	18				13	49
16	89	13	15	16	120	422
16	15	2	3	1	4	173
	10	3	3		2	29
3	11	6	4	6	4	58
16	98	25	13	17	54	354
77	80	2		94	4	424
35	58	30	149	37	161	961
	197	645	90	43	79	2644
12	191	64		29	68	587
13			15			99
10	134	16	17	2	142	572
4	15	8		5	25	75
		3				11
3	4	2	2		3	41
		1				2
8	41	3	14		24	155

	Big Oak Tree State Park	Columbia, Mo.	Gray Summit	Kansas City	Mingo National Wildlife Refuge
Mockingbird	8	28	2	17	16
Catbird					
Brown Thrasher					11
Robin	3	1082	300		
Hermit Thrush					1
Veery					1
Eastern Bluebird		25	6	27	9
Golden-crowned Kinglet	4	5	3	8	6
Ruby-crowned Kinglet	4			5	
Bohemian Waxwing					
Cedar Waxwing		47	24	4	3
Loggerhead Shrike	3	9		1	5
Starling	488	694	100	50679	200
Myrtle Warbler	1	12	3	1	
House Sparrow	45	149	150	503	1
European Tree Sparrow					
Eastern Meadowlark	40	34	37		48
Western Meadowlark		15		163	
Red-winged Blackbird	402	54	9	506	1430
Rusty Blackbird		6			33
Common Grackle	1254	150	25	25	1000
Brown-headed Cowbird	3	8			
Cardinal	102	290	30	449	195
Purple Finch		52	60	16	
American Goldfinch	5	311	6	225	13
Red Crossbill					
Rufous-sided Towhee		2	8		50
Spotted Towhee				6	
Slate-colored Junco	105	517	20	552	165
Oregon Junco				5	
Tree Sparrow	1	710		95	18
Field Sparrow	17			1	10
Harris' Sparrow				84	
White-crowned Sparrow	3	9		6	
White-throated Sparrow	21		8		179
Fox Sparrow	5	19	12	16	
Lincoln's Sparrow					
Swamp Sparrow	3	1			17
Song Sparrow	8	20	10	62	13
Lapland Longspur		5			

Orchard Farm, Missouri	Pere Marquette State Park, Ill.	St. Joseph, Mo.	Springfield, Mo.	Squaw Creek Nat. Wildlife Refuge	Weldon Springs, Missouri	SPECIES TOTAL
4	8	2	52		46	183
			1			1
			1		1	13
1		20	2	8	408	1825
						1
						1
	4	1	31	2	19	124
	8	1	1		10	46
	4					13
		3				3
	65	40		7	87	277
1	3	5	9	12		48
	600	226	2370	775	1	56133
					5	22
12111	1500	1044	451	87	430	16471
15	80					95
65	51	1	75	109	32	492
1	1	8			1	189
1623	344	25	400	1000000	1030	1005823
14	115		3	1	200	372
664	31	8	6228	1215	360	10961
16	3		925	8	1	964
41	313	135	143	75	290	2063
			1		77	206
11	97	50	123	107	143	1091
		4				4
	1			1	1	63
						6
126	400	243	304	1123	624	4179
		1	6	1	1	14
115	145	203	6	1820	166	3279
	10		18			39
		33	26	13	1	157
7	5	2	42	32	36	142
1	7	7	12	5	4	244
			15	11	9	87
			1			1
1	17	22	8	5	26	100
14	77	64	59	78	8	413
6						11

(Continued from page 11)

(5) *Mingo National Wildlife Refuge*: 67 species and about 11,582 individuals, by 11 observers in 2 parties — compiled by Jim Haw.

(6) *Orchard Farm, Missouri*: 58 species and about 65,468 individuals, by 16 observers in 2 parties — compiled by James Earl Comfort.

(7) *Pere Marquette State Park, Ill.*: 73 species and about 84,061 individuals, by 48 observers in 7 parties — compiled by Sally Vasse.

(8) *St. Joseph, Mo.*: 52 species and about 3,742 individuals, by 6 observers in 2 parties — compiled by Floyd Lawhon.

(9) *Springfield, Mo.*: 73 species, 1 race and 12,409 individuals, by 13 observers — compiled by Nathan Fay.

(10) *Squaw Creek Nat. Wildlife Refuge*: 53 species and 1,011,471 individuals, by 6 observers in 3 parties — compiled by Harold H. Burgess.

(11) *Weldon Springs, Missouri*: 62 species and 7,318 individuals, by 36 observers in 8 parties — compiled by James F. Comfort.

A Breeding Population of Henslow's Sparrows In Southwestern Missouri

By David A. Easterla, Assistant Professor of Biology
Missouri State College, Maryville

The Fifth Edition of the A.O.U. Check-list of North American Birds (1957, p. 593) lists the breeding range of Henslow's Sparrow (*Passerherbulus henslowii*) as extending southward to central Kansas, northeastern Texas, central Missouri and southern Illinois. Widmann (1907). *Birds of Missouri, Trans. of the Academy of Science of St. Louis*, 17:178-179) seems to confirm central Missouri as the southernmost breeding range for this species. Probably because of habitat disappearance, the Henslow's Sparrow today is not only a rare transient in Missouri, but a very rare breeder. Apparently, there are no recent breeding records in the Kansas City, Warrensburg, and St. Louis areas where formerly, according to Widmann, it bred. Tucker Prairie, located 17.5 miles east of Columbia, Callaway County, and Taberville Prairie, owned by the Missouri Conservation Commission and located 11 miles south of Appleton City, St. Clair County, are today the only known areas in Missouri where any sizeable number of Henslow's Sparrows breed. Both of these prairies are virgin.

Easterla (1958. *The Bluebird*, 25: No. 7) reported the first Henslow's Sparrow on Tucker Prairie (April 24, 1958), and William Elder, Lee Jenkins and Glen Smart observed the first nesting indications (July 4, 1959) for the area (Elder, W. H. 1961, *The Bluebird*, 28, No. 2, p. 6). They observed singing males to be common over most of the prairie. The following

years produced other summer records; Easterla observed 2 singing males on Tucker Prairie (July, 1961), and Joe Roller observed up to 12 singing males (one carrying food; a pair observed) at this area, July-August, 1964.

I first reported the summering of Henslow's Sparrow at Taberville Prairie on August 18, 1961. (Easterla 1961, *The Bluebird*; 28, No. 3, p. 13). In fact, I observed it to be the most abundant prairie species as determined through singing males. A visit to this area on April 7, 1963, revealed that the species had already arrived (5 observed) and on June 4, 1963, the species was noted to be very abundant. On May 3, 1964, Duane Kelly and I observed the species to be common, and Joe Roller reported the same on August 23, 1964. On June 4, 1965, Andy Saunders and I observed 15 singing males on one small area of the prairie. On June 1, 1966, Larry Watkins and I counted 20 singing Henslow's Sparrows on one small segment of the prairie and again noted this species to be by far the most abundant prairie species. Through the kind consideration of the Missouri Conservation Commission and the Fish and Wildlife Service, special permission was granted to collect several individuals for subspecific identification. The last edition (5th) of the A.O.U. Check-list indicates that all midwestern individuals should be of the same subspecies, *P. h. henslowii*. However, the Taberville birds seem to be lighter colored than birds from eastern Missouri and may represent an undescribed subspecies. Presently, this aspect of study has not been completed. Two birds sacrificed on June 1, 1966, are presently at the National Museum, Washington, D. C.

Considering previous observations and the total acreage (1680 acres) of Taberville Prairie, it probably supports at least two hundred pair of Henslow's Sparrows and represents the largest breeding concentration in Missouri. Apparently this species prefers undisturbed prairie, and reasons for its decline in our state are obvious. It is also interesting to note that Taberville Prairie supports the largest breeding population of Marsh Hawks (*Circus cyaneus*) in Missouri; as high as five birds have been observed at one time in June. One nest was found in May, 1962. (1962. *The Bluebird*, Vol. 29, No. 2, p. 17) and 2 nests in May-June, 1966. Because of habitat disappearance, Missouri has already lost the Swallow-tailed Kite, Bachman's Warbler, Red-cockaded Woodpecker, Brown-headed Nuthatch and others. Unless an immediate attempt is made to save remaining pristine land, other endangered species of the state will surely be lost.

The Missouri Department of Conservation and its talented husband-wife team, Charles and Elizabeth Schwartz, have again won top film honors. The Outdoor Writers of America voted the Schwartz film, "Headwaters", the outstanding outdoor film of 1966. The 30-minute film depicts the problems of natural life in a headwater stream in relation to man's uses of that stream, including its watershed.

Winter Survey – Dec. 1 through Feb. 28

By *Floyd R. Lawhon*

3327 *Burnside Ave., St. Joseph, Mo. 64505*

The winter season, Dec. 1st through Feb. 28th, was relatively mild, but very dry. The total accumulation of snow for the three months in north-west Missouri was only about ten inches and practically no other precipitation occurred. This seemed to be the picture pretty well over the entire state. In the St. Joseph Area there were only five days during this period with zero or lower temperatures. Tuesday, January 24th, was more like a March or April day. It was pretty stormy over most of the northern half of the state. It was cloudy and windy with rain, hail and tornadoes. Three tornadoes hit within 50 miles of St. Joseph and there was much tornado damage in St. Louis County. The lack of heavy snows to keep the ground covered for any length of time probably accounts for several hundred thousand ducks having wintered in the state. Several summer residing species of birds lingered later than usual. As usual a few could be found throughout the winter. Winter a year ago was noted for its large numbers of wintering birds moving into Missouri. This winter we had about the same number of rare species but the abundance in numbers were down, many of them showing up as only one or two birds. No doubt the best bird of the season was the sage thrasher in Southwest Missouri.

Loons through Bitterns—Due to open water over much of the state, the pied-billed grebe was rather common early in the season. Six were listed on the Big Oak Christmas count on January 22 (J.H.) and usually could be found at Alton Dam (J.E.C.). A cormorant on the Orchard Farm Christmas count of December 31st is notable (J.E.C.). Great blue herons were seen in the St. Louis Area during December and January (J.E.C.).

There were four whistling swan reports. One bird was seen by a group of St. Louis birders at Swan Lake on February 25th (J.E.C.). One was seen for four days, February 16th through February 19th at the Trimble Wildlife Area by manager, Charles Blanchard. This could be the same one seen at Schell-Osage Area a few days later on February 22nd by Duane and Cozette Kelly. About three weeks earlier on January 28th, a whistling swan was found at Gilbert Lake, Illinois, by Sally Vasse.

Geese and Ducks—Over 100,000 geese were wintering at Squaw Creek; the high counts during December were 8,000 Canada, 77,000 snow geese, 33,000 blue geese (H.B.). Charles Blanchard says that a white-fronted goose wintered at the Trimble Wildlife Area. Burgess reports that one Ross' goose was seen several times during December at Squaw Creek. Missouri could be fittingly called mallard country this winter. Four hundred thousand mallards were at Squaw Creek in December (H.B.), and 125,000 at the Marais Temps Clair Marshes in St. Charles County (S.V.-J.E.C.). Jim Haw reports that waterfowl were down at Mingo on the Christmas count because of pools being frozen over. In contrast, waterfowl were above normal in Mississippi County. Peak numbers on other puddle ducks at Squaw Creek reported by Harold Burgess were black duck 400, American widgeon 100, pintail 10,000, greenwing teal 10,000, shoveller 10, wood duck 20, ringneck

duck 10 and common mergansers 100. These figures were for December although many of the birds carried over into January and February. Because the pools at Squaw Creek and Big Lake were frozen over most of January and February, the ducks spent much of their time on the Missouri River. A pair of canvas-back was seen on Big Lake near Charleston on January 2nd (J.H.). Dick Anderson and Paul Bauer found an estimated 3,000 canvas-back on the Mississippi River above Alton Dam on February 12th (J.E.C.). Dick Anderson and Paul Bauer found three greater scaup on the Mississippi River above Alton on February 12th (J.E.C.). Three old squaw ducks were seen at Alton Dam on February 15th by Kathryn Arhos and Helen Hill (J.E.C.). A white-winged scoter was seen in the St. Louis Area on February 5th (D.A.) and one at Fellows Lake near Springfield (I.F.). A hooded merganser was seen at the Busch Wildlife Area near St. Louis on January 11th by a group of St. Louis birders, reported by J.E.C., and one on December 26th at Olive Branch, Illinois.

Hawks through Terns—Four black vultures on the Mingo count on December 29th by the Bill Brush party and fourteen were seen by Bob Bright in Southwest Missouri, reported by Irving Fay. An adult goshawk spent at least a part of the winter at Squaw Creek. It was first reported by Burgess on November 17th and was last seen on the Christmas count on January 2nd (J.L.H.-F.L.). Sharp-shinned and Cooper's hawks were reported from Squaw Creek (H.B.), St. Joseph (F.L.) and St. Louis (J.E.C.). Red-tailed hawks were reported from all areas. Twenty at Squaw Creek was the high for the area for one day. I. C. Adams of Columbia writes that many hawks and owls of different kinds used a prairie area fourteen miles east of Columbia. Seven Harlan's hawks on the Christmas count at Squaw Creek on January 2nd seemed to be the high for the state (H.B.). A pair of red-shouldered hawks were seen a few miles east of St. Joseph on January 15th where they are seen each year. Rough-legged hawks were common at Squaw Creek throughout the winter; sixteen were seen on the Christmas count. Most of the 7,000 acre refuge and many thousand acres adjoining the area are covered with marsh grasses because the water areas are mostly dried up; this must encourage a tremendous rodent population.

A golden eagle was seen several times at Squaw Creek (H.B.-D.E.). It was last seen on February 21st. An immature golden eagle was seen at Mingo by the Bill Brush party on the Christmas count this year. Jim Jackson saw two golden eagles along the Missouri River near Hermann, Missouri, and reports one golden eagle was killed by a high school boy at Augusta. He was not fined because he was a juvenile, but his hunting privileges have been taken away for two years. I think we would be surprised if we really knew how many hawks were killed each year in our state. Bald eagles were wide spread over the state, being reported from all areas. Ninety-six (24 adults-72 immature) on the Squaw Creek Christmas count was the highest reported. The St. Louis Audubon Society and the Webster Groves Nature Study Society combined their efforts on February 18th to come up with a count of 87 bald eagles (J.E.C.). It was amusing to follow the actions of the eagles at Squaw Creek. One week when the water was open on the pools the eagles could be found at the refuge and at Big Lake, but just as soon as the pools and the lake iced over, the ducks headed for the Missouri River and the eagles followed them. The last several issues of Field Notes indicate that the marsh hawk population is down but at Squaw Creek they

were up this winter. Thirty-eight were counted on January 2nd (H.B.). Twenty were counted in January, east of Columbia in a prairie area as reported by I. C. Adams. A pigeon hawk was seen near St. Joseph on January 9th (F.L.). Sparrow hawks seemed to be about normal over the state.

The only prairie chickens reported were 12 by I. C. Adams east of Columbia. It was an excellent year for bob white. Pheasants were reported from several areas. Twenty-five at Squaw Creek on January 2nd was the highest one day count. Although turkeys have been established on the Mingo Wildlife Refuge, this is the first time they have been counted on the Christmas count (J.H.).

Coot probably winter regularly throughout southern Missouri but those seen at Alton Dam on December 3rd were a welcome addition to the day's list (J.E.C.). Killdeer were probably seen more commonly this winter than in many years. Even though the ground was frozen most of the winter, the common snipe could be seen regularly in the St. Joseph Area (F.L.). Three least sandpipers seen on January 2nd at Big Lake near Charleston was an unusual record for Missouri at this time of the year. The birds were studied at close range and there seems to be no doubt that the birds were of this species. Later on January 25th while trying to relocate the least sandpipers, two "peep" were flushed from the same spot which probably were the same birds (J.H.). A glaucous gull on January 28th at Alton Dam in the St. Louis area seems to make a yearly appearance but should be listed as one of the better birds of the year (D.A.). One was also seen at Swan Lake on February 25th and reported by Kathryn Arkos (J.E.C.). Dick Anderson reports ring-bill gulls plentiful on Mississippi River February 12th. A kittiwake seen in the St. Louis Area on January 29th and reported by Dick Anderson should rank along with the sage thrasher among the top birds for the state. The season doesn't seem to matter when it comes to the roadrunner. They now seem to show up in southwest Missouri at all seasons. This season was no exception. Three were seen near Blue Eye on January 14th and one at Elbo Ranch on January 21st by Bob Bright reported by Irving Fay. Conservation Agent McCaslin reports roadrunners also, from the glade country of Taney County, Missouri.

Owls through Woodpeckers—Northwest Missouri seemed to be owl country this winter and Dave Easterla was Owl Man. January 22nd was Owl Day for Dave when he came up with one screech owl, one great horned owl, two barred owls, twenty-four long-eared owls and ten short-eared owls. The only snowy owl report for Missouri was one at Fairfax Airport in Kansas City, Kansas. J. Donald Gillaspey, who lives only a few miles across the Missouri state line near Lamoni, Iowa, reports that he has seen a snowy owl the past two winters in his home area. Twenty-six long-eared owls at Squaw Creek on February 18th, 1967 (D.E.) and thirty-three short-eared owls at Squaw Creek on February 26th (D.E.) were the high counts for that area. Burgess reported these owls consistently through January and February. The saw-whet owl showed up again at Squaw Creek in late November when it was first reported by Burgess. It was seen a couple weeks later in December when it was seen by Dave Easterla. Not much to comment on woodpeckers. Forty yellow-shafted flickers were seen in a two acre opening on the ground at Krug Park on January 16th (F.L.). The red-headed woodpecker seemed to be down from last winter but still seen in larger numbers than in the past

several years. The yellow-bellied sapsucker was definitely down this year in the St. Joseph Area (F.L.). The red-shafted flicker which has been common the past few years in the St. Joseph area was limited to a single bird at Krug Park in January.

Flycatchers through Warblers—Red-breasted nuthatches were reported frequently at Maryville (D.E.) and at St. Joseph (J.L.H.) but not in the numbers that showed up last year. Jim Haw reports that winter wrens are up in southeast Missouri. They are about normal in northwest Missouri. The Carolina wren although scarce is still holding its own in northwest Missouri. Brown thrasher reports this winter came from St. Louis (J.E.C.) and St. Joseph (J.L.H.-F.L.). The sage thrasher first discovered at Table Rock west of Lampe in southwest Missouri by Bob Bright was no doubt the most surprising visitor of the season. Many of us are sorry now that we missed seeing it. Robins were seen frequently in northwest Missouri but never in large numbers. The heaviest concentration was 800 to 1,000 robins in one flock reported for the Columbia area by I. C. Adams. A mild winter seems to have held many bluebirds in the state as they are reported from all areas. The Townsend's solitaire seems to like the evergreens in the Ashland Cemetery at St. Joseph, as one showed up there this winter for the third winter out of the past five. It was seen several times about mid-January (J.H.L.-F.L.). Bohemian waxwings were seen several times in the St. Joseph area during December, January and February but in small numbers. The largest count was 7 on February 3rd (F.L.). Dave Easterla writes that Mrs. Himes Cameron had 5 Bohemian waxwings in her yard at Maryville on February 18th. Cedar waxwings were common in good numbers throughout the state during the winter, feeding on a bumper crop of cedar berries. Myrtle warblers appeared on most all reports for the winter months. A pine warbler on January 21st at Shaw's Garden Arboretum by Earl Comfort and party was an unusual find for this date.

Meadowlarks through Finches—In checking records over the past several years the indications are that the eastern meadowlark is the common meadowlark throughout the state during the winter. I believe that Dave Easterla and John Hamilton along with myself find that the western meadowlarks far outnumber the eastern species in northwest Missouri. It seems that the heavy concentrations of blackbirds were located in northwest Missouri in the Squaw Creek area. The estimated numbers jumped from one million on the Christmas count to eight million early in March. From close study we were surprised at the large numbers of starlings and Brewer's blackbirds in the flocks; in March, R. A. Brown and Floyd Lawhon estimated 100,000 plus Brewer's blackbirds out of an estimated 3,000,000 blackbirds. The estimate was based on partial counts in different flocks. There were quite a few grackles but very few cowbirds in these flocks (F.L.). The only evening grosbeaks reported were small numbers feeding at two feeders in Columbia, Missouri, (I.C.A.). Purple finches were numerous in Columbia (I.C.A.) but none reported from the St. Joseph area (F.L.). The only redpoll reported for northwest Missouri was a lone bird in Krug Park at St. Joseph on January 15th (J.L.H.). Earl Hatch reported that on a February outing at Shaw's Garden Arboretum, three common redpolls were seen (J.E.C.). Pine siskins were seen in both St. Joseph and St. Louis. Red crossbills were seen regularly in St. Joseph all winter but not in large numbers (J.L.H.). They were also reported from the Maryville area (D.E.). Sparrows were scarce at Mingo

during the Christmas count period where they are usually plentiful (J.H.). A chipping sparrow that wintered in Ashland Cemetery in St. Joseph was quite a bit north of its normal northern wintering limits (F.L.). The Harris sparrow was reported from the St. Louis area on a few field trips where it is always a welcome visitor (J.E.C.). In the St. Joseph area only the tree sparrow and song sparrow outnumber the Harris. Very few Lapland longspurs were seen in the St. Joseph area for this period. I. C. Adams of Columbia reports large flocks of Lapland longspurs in the Missouri River bottoms during the Christmas count period.

D. A. — Dick Anderson

I. C. A. — I. C. Adams

H. B. — Harold Burgess

J. E. C. — James Earl Comfort

D. E. — Dave Easterla

I. F. — Irving Fay

J. H. — James Haw

J. L. H. — John L. Hamilton

F. L. — Floyd Lawhon

S. V. — Sally Vasse