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Baltimore Oriole of Unusual Color

—Photo and Halftone, Gift of Willis Hall

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In This Number . . .

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President's Page

ANOTHER spring convention is now history; Nelda Holden, Paul Springer, David Holden, and Esther Edie were the mechanics who greased the wheels and paved the way for this successful event. Very few of the members attending conventions comprehend the tremendous effort necessary "to put one on the road." Again we say, thanks for a job well done.

The movie "Look Down" was new to me and a fresh reminder of the cycles, checks and balances, which natures uses to achieve "survival of the fittest." The birders divided into two groups with Nelda Holden taking charge of the Oakwood lakes area, and David Holden leading his caravan on a lengthy tour to Altamont Prairie.

As usual, we were pressed for time at the business meeting; it was the consensus of the members that spring conventions be devoted entirely to birding sessions, that all business, reading of papers, elections, be held at the fall conventions. The group voted to amend the by-laws with elections to be held at the fall convention and that the terms of directors and officers should expire in November instead of May.

Past president Krause wired greetings from the Philippines where he is currently a Rockefeller Fellow. We missed Scott and Alma Findley at the meetings, and were saddened by the report that Scott was home, sick with heart trouble.

Dr. Whitney reported on the progress of the Annotated Check-List Committee. It appears that we are now on the first rung of the Check-List ladder with a complete inventory of all mounted specimens and skins in our area. The committee has been divided as follows: Springer, Loons through Hawks; Whitney, Grouse through Woodpeckers; Johnson, Flycatchers through Vireos; Holden, Warblers through Sparrows; Peterson, Shore Birds. Whitney complained, "Everyone writes about the scarcer species but very little attention is given to our more common birds." Will the members report all nesting information that you possibly can to the Check-List Committee.

S. D. O. U. accepted the invitation of Belvidere for the 1967 Spring convention, and I know we are all looking forward to a good time in the West River area.

Byron Harrell welcomed us to Vermillion for the winter convention of 1966 and this was also accepted. The dates are November 25-27.

The members voted unanimously to grant honorary life memberships to Scott Findley and Wayne Trimm.

Herman Chapman discussed membership in the West River area, suggested a renewed effort be made by the West River directors to secure new members, this being especially important at this time, to insure a more complete checklist. The usual Chapman generosity prevailed with "Chap" contributing $100.00, to be matched by the S. D. O. U., to

(Concluded on page 44)

Baltimore Oriole of Unusual Color

C. P. Crutchett and Willis Hall

DISCOVERY

C. P. Crutchett

AT NOON on May 21, 1965, we arrived at the drive way of our son-in-law, Gilbert Olawsky in Mitchell, S. Dak. As we got out of the car a bird that appeared to be neither a male nor a female Baltimore Oriole, because of its unusual plumage, lit in a cluster of leaves at the tip of a branch of an elm tree, just a few feet over our heads. We waited a few minutes for the bird to leave so we might get a good look at its color; but it seemed rather busy, rustling about in the foliage. When it did fly, we saw the tiny beginning of a nest in the leaves. It was about 12 feet from the ground and on the west side of the tree.

Twenty-five feet west of the nest and almost on a level with it was the lower east window of the house. We sat all afternoon at the window and watched the unusual bird, which we were now sure was a female oriole, work on the nest.

About six feet above the nest, on the same branch, was a nest of young robins. The two species seemed to ignore each other.

The oriole would work for about ten minutes, then disappear for about the same interval, apparently gathering material. When it returned it would enter the nest cluster so quickly, and leave so rapidly, we found it hard to tell the colors of all its parts. We did make some notes on the plumage which are tabulated below for convenient reference. The bird's last visit was at dusk, at 7:00 p. m., when it stayed only two minutes.

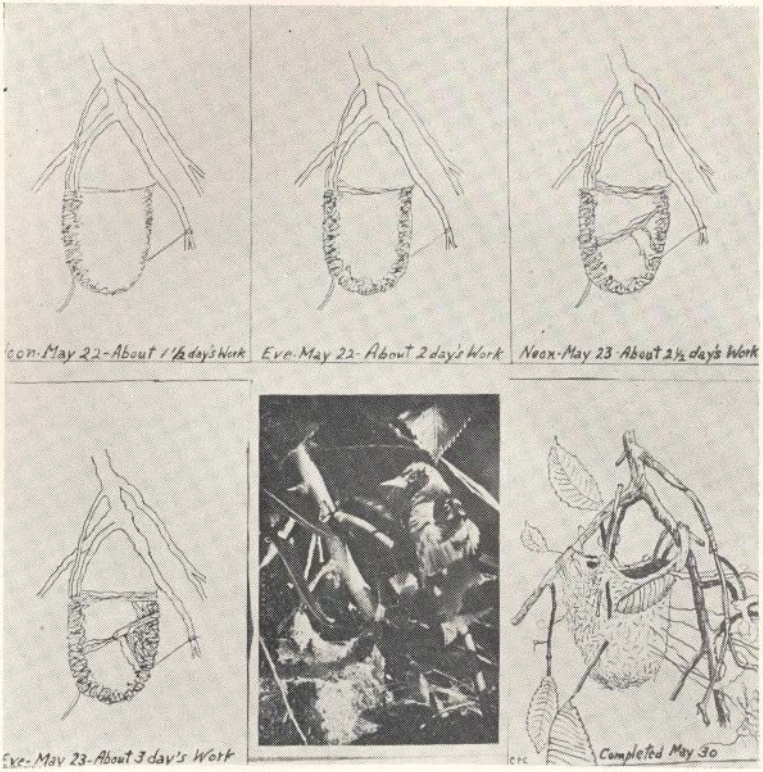
The next day (May 22) a cold drizzly rain fell all morning. The female first appeared at 8:45 a. m. and, after working only two minutes, left. She did not work any more in the forenoon and, at this time, the nest was faintly outlined, with the north side heavily tied, and two or three strings across the top. At 1:30 p. m., the male lit 10 feet from the nest but stayed only a moment. The female came several times in the afternoon and worked, most of the time standing on her head, with her underparts exposed to our view. Her brood patch was clearly seen. About 7:00 p. m., the male came to the nest with her but he stayed only a minute. She made her last visit, alone, at 7:15 p. m. By this time the whole outline of the basket and rim of the nest was heavily outlined all around. That evening there was a steady rain.

On the third day (May 23) it was difficult to see the nest building in the surrounding leaves, but it appeared that she completed most of the near (west) side first. We made sketches of the structure as it developed (see illustrations).

We noticed that, if any person was near when she left, she would utter a short, quavering whistle of three or four notes. But, if no one was near, she left silently.

By noon she had put in a heavy brace of several lines, running from the top of the right hand side to about the center of the left side. She also put a few supports from the diagonal brace to the right side. The male showed up twice during the day but only for a moment. By late evening she had started to fill in the right side from top to bottom.

On the fourth day (May 24) the female was at work by 6:00 a. m. and, by



Stages of Construction

—Drawings by C. P. Crutchett. Photo by Willis Hall

The halftone is their joint gift.

noon had the west side of the nest almost filled in. She worked on this side until it was done. It took another four or five days to finish the east side and make everything "shipshape." We had returned to Armour when the Olawski family informed us that the nest was finished on May 28 or 29, having taken eight or nine days.

When we returned to Mitchell on June 22, the Orioles were feeding the young about every ten minutes. The male seemed to be faster in gathering food and made many more trips than the female. When the female fed the young, she would enter the nest and stay away five or 10 minutes, while the male would hurry away for more food.

The next day (June 23) the parents seemed to feed the young about every five minutes.

Ornithologists report the depth of oriole nests from four to 10 inches. The nests in the Over Museum at Vermillion measure 7½ and 4½ inches (Mrs. Siljenberg). Most of the nests we have seen are about eight inches deep.

The nest of our Baltimore Oriole measured, outside corner points to the

bottom, 4¾ inches; from the sag in the rim to the bottom, 3¾ inches; width about halfway up, 3½ inches. Inside, it measures, from the sag of the rim to bottom, 3½ inches. The top opening was a rhomboid, 1¾ inches wide, three inches long, and 3¼ inches from corner to corner.

Most of the materials used were those common to the Baltimore, except that little hair was found. One interesting item was a nylon fishline leader. This long cord had been sewed through the rim of the nest, wrapped around a distant twig to the right again sewed through the nest, wrapped around a distant twig to the right, again sewed through the rim, and wrapped around a branch still farther out to the right, again sewed by the bird and looped over a twig far to the left. It had also been stitched through the body of the nest at least six times starting about the middle and going nearly to the bottom of the structure. It served as guys, holding the nest to right and left.

On the west side of the nest the Oriole had sewn four elm leaves and the same on the east side. Each leaf was tightly fastened by stitches along one entire edge. These leaves helped to hide the nest. The east or far side of the nest, which was the last part made, was not concave inside like the west side. It was flat, as though built against a board; but no board or other object was in the way. All the strings on that side had been pulled tight instead of being left a little slack. In doing this the bird had cut the capacity of the nest a little, possibly saving some time and material.

The small size of the nest may have affected the size of the clutch. The usual brood of the species is from four to six. This nest contained only three, one of which presumably was the one found dead on the ground. It seemed that even three young were too many for the small nest.

Mr. Hall and I compared notes and prepared the following description of the colors of this female Baltimore Oriole:

Color Markings on May 21, 1965

Black: superciliary eyeline; auriculars; throat, wing, shoulders; scapulars
Greyish: eye-ring; lores
Orange: rump, upper tail-coverts; breast; belly; sides; tibia
Yellow: under tail-coverts; under side of tail
Greenish-orange:forehead; crown; back of neck; back and shoulders—with some dusky spots
White: one wing-bar

In Peterson's **Field Guide to the Birds**, the male Baltimore Oriole has solid orange shoulders.

In his **Field Guide to the Western Birds**, the male Baltimore has shouders mostly solid black, cut by two streaks of orange.

The male of this pair had orange shoulders.—**C. P. C., Armour.**

FURTHER OBSERVATIONS

Willis Hall

It was late in the afternoon of May 30 when I first saw these Orioles. Accordingly I did not approach them closely with a camera. The Olawskys kindly let me use their house for a blind from which I had a good view of the nest and from which I could take some long shots with the camera when there was enough light. The shadow of the house had already covered the nest when the female appeared.

Quickly and almost constantly she moved in and about the nest; I was lucky to get even a couple of pictures in the poor light. The nest seemed unusually small for her to enter and, when her head and tail appeared at the same time, it seemed she must surely be caught for good. But she wriggled

The Oriole Perches Above Her Nest

—Photo and Halftone Gift of Willis Hall

Head and Back of Oriole

—Photo and Halftone Gift of Willis Hall

and turned to work free and then paused for a moment to compose herself.

On June 27, I went to Mitchell early and remained for most of the day. While I was setting my camera, I had to answer many questions about all kinds of birds to a crowd of children. I placed myself at an upstairs bedroom window with my remote control cords. I took pictures of the Orioles from time to time throughout the day and recorded the visits of the parent birds to the nest from 10:50 a. m. until 5:30 p. m. with the exception of twenty minutes at noon.

During this period the male came with food 22 times and the female nine times. At no time did the male stay longer than a few seconds, leaving when he had disposed of the food, though on several occasions he took away excrement.

The female's visits lasted considerably longer—once she stayed in the nest for ten minutes (after having been away from the nest two hours and 46 minutes). She seemed to be very active while in the nest, making quite a commotion—but, at no time did I see the young crowded to the top of the nest.

About noon, when I went out to check my equipment, some of the children showed me a young dead bird that they had found nearby. It was well feathered and appeared to be an oriole. No one could account for its being out of the nest—although there had been a violent wind storm a couple of days before.

When I returned on July 5 the orioles had departed. I had no sight or sound of them in the neighborhood.

Mr. William Youngworth of Sioux City viewed the color prints and ex-

pressed opinion that this bird was an old one "maybe five years old." He said that Mr. and Mrs. John Lueshen of Wisner, Nebr. thought it was "mixed up with a bit of Bullock's Oriole, but was mostly like a female Baltimore."

I certainly appreciate Mr. Crutchett's bringing this interesting oriole to my attention and making it possible for me to photograph it. Perhaps others will note more carefully the plumage of female orioles and compare them to this odd one.

ADDITIONAL NOTES ON COLORATION

(Based on examination of 25 color slides.)

Tail usually appears dull olive-yellow, but in more light is orange. Wing-bar (edge of middle coverts) is conspicuous. There is not a trace of a second wing-bar.

Rump, breast, and belly appear in varying shades of yellow-orange, the belly being more yellow.

Chin is light gray. Back is olive-green. **—W. H., Yankton.**

A Snug Fit

—Photo and Halftone Gift of Willis Hall

Supplemental Observations of Snowy Owls in South Dakota*

D. G. Adolphson

WINTER, 1963-1964

DATE		COUNTY	OBSERVER
12- 6-63		Brookings	P. Springer
4-18-64		Brown	B. Rose

WINTER, 1964-1965

10- -64	(2 owls)	Kingsbury	E. Eide
11-15-64		Todd	R. Adrian
11-19-64		Kingsbury	R. Drieslein
2- -65		Perkins	L. Yarger

WINTER, 1965-1966

11- 9-65	Brown	K. Higgins
11-28-65	Beadle	S. Hofer
11-28-65	Brown	B. Rose
12- 2-65	McPherson	C. Twedt
12- 2-65	Edmunds	C. Twedt
12- 2-65	Codington	W. Woolstencroft
12- 5-65	Beadle	S. Hofer
12-28-65	Spink	C. Twedt
1- 4-66	Kingsbury	A. Bonsack
1- 4-66	Kingsbury	A. Bonsack
1- 7-66	Kingsbury	A. Bonsack
1-10-66	Spink	H. Bandelman
1-13-66	Day	J. Stavig
1-14-66	Kingsbury	G. Jonkel
1-19-66	Kingsbury	A. Bonsack
1-22-66	Brown	B. Rose
1-24-66	Brown	C. Twedt
1-26-66	Brown	C. Twedt
1-26-66	Brown	B. Rose
1-27-66	Brown	B. Rose
1-28-66	Brown	C. Twedt
1-29-66	Faulk	B. Rose
2- 6-66	Spink	G. Konsler
2- 7-66	Beadle	T. Lockwood
2-11-66	Kingsbury	T. Lockwood
2-16-66	Beadle	T. Lockwood
2-16-66	Brown	B. Rose

Most of the Snowy Owls seem to concentrate in the James River Basin as in former years and again most owls were signed in January.—**Huron.**

*See **Bird Notes** XVII:63 (September, 1965) for prior list and map.

Farm Island Banding, 1965

Nelda Holden

SINCE the banding program was started on Farm Island in 1962 the total number of individuals banded has been 1074 representing 70 species. In this report only the birds banded in 1965 are listed since the work of the past years has already been reported in **South Dakota Bird Notes** (XIV:57, XVI:93). The species not banded this past year but in the earlier banding are Black-billed Cuckoo, Cedar Waxwing, Western Wood Pewee, House Wren, McGillvray's Warbler, and Bullock's Oriole. To date we have had 10 good returns: one Yellow-breasted Chat, two American Redstarts, four Black-headed Grosbeaks, two Catbirds, and one Towhee (P. m. arcticus). One of the Catbirds was a return after a lapse of two years.

This program is a joint effort of a number of banders and others from over the state.

In the following list of birds besides the total number of birds banded are the following symbols.

Status

PR—Permanent Resident
SR—Summer Resident
WR—Winter Resident
M—Migrant

Date Banded

M1—May 8-9, 1965
M2—May 22-23, 1965
S1—September 4-5, 1965
S2—September 25-26, 1965

Species	Status and Date	Total
Solitary Sandpiper	M, M1	1
Y-S Flicker	SR, M1, M2, S2	6
Hybrid Flicker	SR, M1	1
Hairy Woodpecker	PR, M2	2
Downy Woodpecker	PR, M1	1
Great Crested Flycatcher	SR, M1, M2, S1	4
Traill's Flycatcher	SR, M1, M2, S1	16
Least Flycatcher	SR, M1—S2	34
Western Flycatcher	SR?, M2, S1	2
Eastern Wood Pewee	SR, M1, M2	2
Blue Jay	PR, M1, M2	4
Black-capped Chickadee	PR, MI—S2	17
Winter Wren	M, M2	1
Catbird	SR, M2, S1	42
Brown Thrasher	SR, M1, M2, S1	16
Robin	SR, M2, S1, S2	9
Wood Thrush	SR, M2, S1	4
Swainson's Thrush	M, M1, M2, S2	51
Gray-cheeked Thrush	M, M2	1
Veery	M, M2	1
Ruby-crowned Kinglet	M, M1	4
Bell's Vireo	SR, M2	11
Red-eyed Vireo	SR, M2	6
Philadelphia Vireo	M, M2	1
Warbling Vireo	SR, M2	6
Black and White Warbler	SR, M1, M2, S1	17
Worm-eating Warbler	M, M2	1
Tennessee Warbler	M, M1, M2	2
Orange-crowned Warbler	M, M1, S2	47
Yellow Warbler	SR, M1, M2, S1	36
Magnolia Warbler	M, M1	2
Myrtle Warbler	M, M1, S2	26
Blackpoll Warbler	M, M1	9
Palm Warbler	M, M1	2
Ovenbird	SR, MI, M2	13
Northern Waterthrush	M, M1, S2	18
Connecticut Warbler	M, M2	1
Mourning Warbler	M, M2	2
Yellowthroat	SR, M1, M2	5
Yellow-breasted Chat	SR, M1, M2	26
Wilson's Warbler	M, M1, S2	5
American Redstart	SR, M2, S1	52

(Concluded on Page 47)

Christmas Count, 1965

	Aberdeen	Badlands	Brookings	Huron	Lake Andes	Madison	Milbank	Rapid City	Sand Lake	Sioux Falls	Webster
Canada Goose					2040						
Snow Goose					1						
Blue Goose										1	
Ross' Goose					1						
Mallard			1	1	105,000	4		366	20		
Black Duck					4						
Gadwall								28			
Green-Winged Teal								2			
American Widgeon					2						
Redhead					2						
Lesser Scaup					1						
Common Goldeneye					102			2			
Bufflehead					2						
Hooded Merganser								2			
Common Merganser					462			2			
Goshawk									1		
Cooper's Hawk					1						
Red-tailed Hawk					1				1	1	
Rough-legged Hawk				1	1			2	2		
Golden Eagle		1			6				1		
Bald Eagle					72				1		1
Prairie Falcon					2				2		
Peregrine Falcon									1		
Marsh Hawk									1		
Prairie Falcon		1									
Sparrow Hawk			1		1	1				1	
Greater Prairie Chicken					64						
Sharp-tailed Grouse								3			
Bobwhite					9						
Pheasant	24		268	48	26	73	3		535	12	2
American Coot					3						
Killdeer				2							
Herring Gull					100						
Mourning Dove			5		1					3	
Barn Owl			2								
Screech Owl			1								
Great Horned Owl			13	8	1	1	1	1	6	3	2
Snowy Owl									1		
Long-eared Owl										1	
Short-eared Owl			1								
Belted Kingfisher								5		2	
Flicker, Y-S	1		8	1		3	1		3	20	
Flicker, R-S			1	1				2			
Red-bellied Woodpecker										5	

CHRISTMAS COUNT, 1965 (Continued)

	Aberdeen	Badlands	Brookings	Huron	Lake Andes	Madison	Milbank	Rapid City	Sand Lake	Sioux Falls	Webster
Hairy Woodpecker			15	1	1	12	8	7	6	31	1
Downey Woodpecker			56	5	1	11	8	16	22	37	3
Horned Lark	23		17	103	6	94	12	3	6	4	3
Gray Jay								1			
Blue Jay			28	3		3	2	40	4	4	1
Black-billed Magpie		7			26			66			
Common Crow			153	26		36	2	14	1	204	
Pinon Jay								48			
Black-Capped Chickadee	1	4	234	20	4	67	35	19	20	331	8
White-breasted Nuthatch			45	4	1	3	8	8	2	40	2
Red-breasted Nuthatch			3	2			1	11		7	1
Brown Creeper				1	1		1	7		7	
Canyon Wren								15			
Robin	22	68	8	2				2			
Mountain Bluebird		10									
Townsend's Solitaire		5						10			
Golden Kinglet		1	8					1			
Ruby-crowned Kinglet										56	
Bohemian Waxwing			15	2							8
Cedar Waxwing			15	17							
Northern Shrike			3					1	1		
Loggerhead Shrike										1	
Starling	5		233	143	100	53	47	385	65	609	
House Sparrow	153		1309	1094	239	402	195	490	175	3695	10
Western Meadowlark									1		
Red-winged Blackbird			7	35	10		1		4	1	
Common Grackle				14					5		
Brown-headed Cowbird					8						
Cardinal			6	5	3					20	1
Evening Grosbeak			5					7			
Purple Finch			11	13		6				16	1
Pine Grosbeak				2							12
Common Redpoll			456	278	107	620	3	83	620	10	25
Pine Siskin			8	3			10	30		4	
American Goldfinch			21	4	5	31		41	4		
Red Crossbill										4	
White-winged Crossbill			14								
White-winged Junco								544			
Slate-colored Junco			100	2	32	61	5	99	5	106	
Oregon Junco								86			
Tree Sparrow			93	20	41	40	4	4	20	108	
Harris' Sparrow			4	3		2		1		10	
White-throated Sparrow										2	
Song Sparrow			1							7	
Lapland Longspur			8	230							
Chestnut-collared Longspur										21	
Snow Bunting						133			5	15	

Nesting and Production of the Mourning Dove in Eastern South Dakota, 1965

Roderick C. Drewien, South Dakota State University[1]
Rollin D. Sparrowe, South Dakota State University[1]

INTRODUCTION

LITTLE information is available on the production of the Mourning Dove (**Zenaidura macroura**) in South Dakota. In the only South Dakota study Oldenburg (1959) reported on dove nesting activity in conifer plantings at Lake Herman State Park near Madison. In North Dakota (Boldt and Hendrickson 1952, Randall 1955), Nebraska (Frates 1963, LaPointe 1958), and Minnesota (Harris et al. 1963) a high incidence of dove nesting was found in farm shelterbelts. In a southwestern Iowa study (McClure 1943) doves nested commonly in farmyards, orchards, gullies, woodlots, and towns. Hopkins and Odum (1953) correlated breeding population density in Georgia with the amount of forest edge, such as is found in farm shelterbelts and woodlots. In an attempt to obtain more information on dove production in farm shelterbelts and woodlots in South Dakota, nesting surveys were conducted on two study areas in Day and Brookings Counties during 1965.

STUDY AREAS

Two areas were selected for study, one in northeastern Day County (Area A) and a second in central Brookings County (Area B). Area A (T. 123 N., R. 53 W., Sec. 6) consisted of a small, rectangular shelterbelt approximately 45 yards wide and 230 yards long, or slightly over 2.1 acres. The trees, all less than 10 years old, were planted in 13 rows. Nearly 50 per cent of the shelterbelt consisted of green ash[2], boxelder, and Siberian elm, while Russian-olive made up approximately 22 per cent, and wild plum, 18 per cent. Buffaloberry, chokecherry, and buckthorn made up about 10 per cent of the shelterbelt, and were mixed with the dominant species in five of the rows.

Area B was located on the Horticulture-Forestry Experimental Plots on the campus of South Dakota State University, Brookings. The area, comprising about 50 acres, was composed of a series of plantings of hedgerows, tree strips, and fruit orchards, interspersed with plantings of various field and garden crops (Figure 1). Each of the plantings is of a single species and thus comprises a homogeneous block of habitat.

METHODS

Both study areas were systematically searched for nests at 7-10 day intervals from late April through mid-September, 1965. Since doves have an incubation and brooding period of about 28 days (Edminster 1954), a successful nest had three to four chances of being discovered during that period. Each nest was tagged, and data on location, number of eggs, stage of incubation or develop-

[1]Authors' names listed alphabetically.

[2]Scientific names of plants used in text appear in the appendix.

ment of young, and fate of the nest were collected.

Study area A was completely surveyed during each visit, while study area B was divided into sample plots because of the large size and broken nature of the suitable nesting habitat. Each planting was divided into 50-foot plots, and one plot was randomly selected for observation (Figure 1). The sample plots were not of uniform size, since some plantings were long and narrow, while others were square or rectangular. This resulted in an unequal proportion of sample to planting, with some plantings being sampled more intensively than others (Table 1). Calculations for nesting activity and production of young were made by multiplying the figures for each sample plot times the total number of plots of sample size in the planting. These figures represent projected total figures for each planting, based on the sample plots.

Nesting Activity

Doves first appeared on Area B on April 7, and on Area A on April 10. Nesting activity began during the third week in April on Area B, and the fourth week in April on Area A.

Data on nesting attempts, based upon date of initiation, are summarized in Table 2. A nesting attempt is defined as a nest in which at least one egg appeared. Nesting activity reached its peak during late May and early June and gradually diminished during July and August on both areas. Oldenburg (1959), in his study at Madison, found that the peak of nesting activity was in May. Fifty-four nesting attempts were recorded on Area A, of which 50 had been terminated and four were still active by the end of the study on September 12. A total of 266 nesting attempts was found on Area B. The last nest was terminated on September 15.

Nesting Success

Fichter (1959) and Harris et al. (1963) emphasized nesting success, rather than nesting attempts, as a true measure of productivity. Nesting success reflects the addition of new individuals to the population, whereas nesting attempts show only the repro-

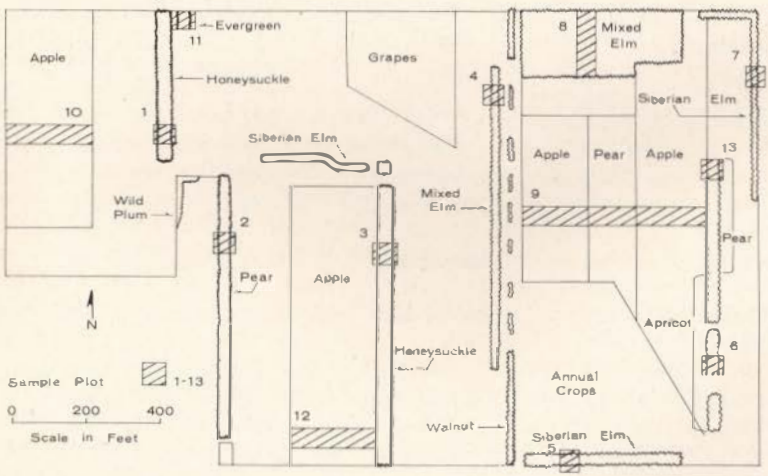


Figure 1. Map of Area B, Brookings County, showing sample plots.

ductive effort. In the present study a successful nest was considered to be a nest from which at least one young dove was fledged.

Of the 50 completed nests found on Area A (Table 2) 28, or 56 per cent, were successful. From the 28 successful nests 46 young were fledged (Table 3) for an average of 1.64 per successful nest. If the remaining four active nests, which contained seven nestlings, are assumed to have been successful, then the number of successful nests would have been 32, or 59 per cent (1.66 young per successful nest). On Area B, 95 of 266 nesting attempts (Table 2), or 36 per cent, were successful. A total of 176 young was fledged from the 95 successful nests for an average of 1.85 young per successful nest (Table 3).

An increase in nesting success later in the nesting season was attributed to improved weather conditions and a decrease in use of both study areas by nesting Common Grackles (*Quiscalus quiscula*). Heavy winds and rainstorms which hit both areas during May, and a hailstorm on Area A in late May caused nest losses which are reflected by the low nest success for that month (Table 2).

Nesting Common Grackles were abundant on both areas. In Minnesota (Harris et al. 1963) grackles were found to be an important predator on dove eggs. The areas used most by nesting grackles on Area B were also the best dove nesting areas. In early July a large influx of young grackles coincided with a sharp decline in dove nesting success (Tables 2 and 3). In addition to possible predation, the increased activity of

Table 1. Rate of sampling and habitat use by nesting doves on Area B, Brookings County, South Dakota, 1965.

Planting	Sample Plot	Planting Size	% Sampled	% Total Nests	% Total Successes
Honeysuckle	1	400' row	12.5	18.1	25.3
Pear	2	700' row	7.2	5.3	0
Honeysuckle	3	800' row	6.3	30.0	16.8
Mixed Elm	4	800' row	6.3	0	0
Siberian Elm	5	450' row	11.1	0	0
Apricot	6	400' row	12.5	0	0
Siberian Elm	7	500' row	10.0	0	0
Mixed Elm (woodlot)	8	175' x 400'	12.5	3.0	8.4
Mixed Orchard (young)	9	450' x 500'	11.1	6.8	0
Apple Orchard (young)	10	250' x 400'	12.5	0	0
Evergreen	11	50' row	100.0	1.1	3.2
Apple Orchard (mature)	12	200' x 750'	6.7	28.2	31.7
Pear	13	300' row	16.7	4.5	6.3
Miscellaneous	—	200'	100.0	3.0	8.4

Table 2. Summary of dove nesting activity by month based on date of initiation for Area A, Day County, and Area B, Brookings County, South Dakota, 1965. The figures in parentheses represent the corrected values for Area A if the four nests still active at the end of the study are assumed to have been successful.

	April	May	June	July	August	Total
AREA A (Day County)						
Nesting attempts	1	14	16	11	12	54
% of attempts	1.9	26.0	29.7	20.1	22.3	100.0
Nesting success	1	5	9	8	5(9)	28(32)
% of success	3.6(3.1)	17.8(15.7)	32.4(28.1)	28.4(25.0)	17.8(28.1)	100.0
AREA B (Brookings County)						
Nesting attempts	1	85	84	54	42	266
% of attempts	tr.	32.0	31.5	20.3	15.8	100.0
Nesting success	1	6	46	0	42	95
% of success	1.1	6.3	48.4	0	44.2	100.0

grackles in the dove nesting area may have contributed to this decline. An increase in dove nesting success was noted after the grackles had left Area B. In contrast, on Area A, the habitat types used most by nesting grackles were used least by nesting doves.

About every two weeks Area B was sprayed for insect control with a John Bean mist-type orchard sprayer. The spray was observed to whip the tree branches violently, and any dove nests present were probably damaged or destroyed.

Other than a few known losses to predation and severe weather, the causes of nest losses were unknown. On both study areas most of the unsuccessful nests were found with the eggs either completely missing, broken in the nest, or on the ground.

Young doves are dependent on adults until actually fledged at the age of 12 to 15 days (Harris et al. 1963). Therefore, in states offering dove hunting, it is important to know what portion of the total production of young doves leaves the nest after the opening of the hunting season.

Using September 1 as the usual date for the opening of a dove season, McClure (1950) indicated that in Iowa and Nebraska 20-21 per cent of the young were fledged after that date. Over a three-year period in Minnesota (Harris et al. 1963) from 16-27 per cent of the young were fledged after September 1. In the present study a minimum of 13.0 per cent of the young were fledged after September 1 on Area A. If the remaining four nests containing seven nestlings were successful, then 24.5 per cent of the production would be after September 1. On Area B, 22.8 per cent of the young were produced after September 1 (Table 3).

Table 3. Summary of dove production by month based on fledging date for Area A, Day County, and Area B, Brookings County, South Dakota, 1965. The figures in parentheses represent the corrected values for Area A if the four nests still active at the end of the study are assumed to have been successful.

	May	June	July	August	September	Total
AREA A (Day County)						
Sucessful nests	1	7	9	8	3(7)	28(32)
% of successful nests	3.6(3.1)	25.0(21.9)	32.1(28.1)	28.6(25.0)	10.7(21.9)	100.0
No. of young produced	1	12	13	14	6(13)	46(53)
% of total young produced	2.2(2.0)	26.1(22.6)	28.3(24.5)	30.4(26.4)	13.0(24.5)	100.0
AREA B (Brookings County)						
Successful nests	2	51	0	18	24	95
% of successful nests	2.1	53.7	0	18.9	25.3	100.0
No. of young produced	4	102	0	30	40	176
% of total young produced	2.2	58.0	0	17.0	22.8	100.0

Table 4. Species composition, nesting attempts and success by vegetation types of doves nesting on Area A, Day County, South Dakota, 1965. The figures in parentheses represent the corrected values if the four nests still active at the end of the study are assumed to have been successful.

	Wild plum	Russian-olive	Boxelder, Ash, Elm	Buffaloberry, Chokecherry, Buckthorn
% of trees	18	22	50	10
% of total nests	39	30	16	15
% of successful nests	36(37)	32(31)	14(13)	18(19)

In contrast, Oldenburg (1959) found that an insignificant portion of the production was fledged after September 1.

Habitat Use

Doves used certain habitat types more than others for nesting on both areas. On Area A wild plum and Russian-olive represented approximately 40 per cent of the available nesting cover and contained 69 per cent of all nesting attempts (Table 4). Of the two, wild plum received more use. Buffaloberry, chokecherry, and buckthorn constituted about 10 per cent of the nesting cover and contained 15 per cent of the nests, indicating that these cover types were used somewhat in relation to their availability. Of these three types, buffaloberry contained over half the nests. Elm, boxelder, and ash made up half of the nesting area but contained only 16 per cent of the nests. There was a close relationship in each cover type between the per cent of successful nests and the percent of total nests (Table 4), indicating that factors other than vegetation types may have influenced success.

Growth form, location in the shelterbelts, and the presence of nesting Common Grackles were all thought to influence nest site selection on Area A. The rather dense, brambly nature of wild plum provided numerous supports for nests as did the sturdy crotches of the main trunks of Russian-olive. Wild plum and Russian-olive were used by few nesting grackles, whereas the majority of the nesting grackles used ash, boxelder, and elm. In addition, the location of the last three cover types was in the center of the shelterbelt, while most of the Russian-olive and wild plum were located along the margins. In Minnesota Harris et al. (1963) noted that there was a tendency for doves to nest near the edges of block plantings. No doubt, low use by nesting doves of ash, boxelder, and elm was caused by a combination of the above factors.

Of 13 plantings sampled on Area B, two honeysuckle hedges and one apple orchard (Table 1) held approximately 76.3 per cent of the total nesting attempts and produced 73.8 per cent of the successful nests. Although these three plantings comprised a relatively small part of the total available habitat, their generally mature growth form, with many spreading horizontal branches and relatively heavy foliage, offered high quality nest sites.

Variation in growth form of individual trees or shrubs was thought to be the major factor influencing the choice of nesting sites on Area B. Most of the elm trees on the study area were tall and had few spreading branches, thus offering few suitable nest sites. One mature orchard was used heavily for nesting (28.2 per cent of the total nesting attempts), while younger orchards offered fewer suitable nest sites and were used correspondingly less (Table 1). In both of the honeysuckle hedges, which produced 18.1 per cent and 30 per cent of the total nesting attempts, doves used the spreading branches of the east edge of each hedge for nesting, and few nests were found on the taller, more upright west edge of each hedge. Prevailing winds from the northwest contributed to this overhanging growth form and indirectly influenced nest site selection by doves.

ACKNOWLEDGEMENTS

These studies were conducted as supplemental projects while both authors were employed as graduate research assistants by the South Dakota Cooperative Wildlife Research Unit, South Dakota State University, Brookings. Appreciation is expressed to Dr. Raymond L. Linder for his assistance in organizing the study on Area B, and for his

critical review of the manuscript. Thanks are also due Doctors Paul F. Springer and Donald R. Progulske for reviewing the manuscript.

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APPENDIX

Common and scientific names of plants used in the text:

Apple **Malus** sp.
Apricot **Prunus armeniaca**
Boxelder **Acer negundo**
Buckthorn **Rhamnus** sp.
Buffaloberry **Shepherdia argentea**
Chokecherry **Prunus** sp.
Elm **Ulmus** spp.
Green ash **Fraxinus pennsylvanica**
Honeysuckle **Lonicera** sp.
Pear **Pyrus** sp.
Russian-olive **Elaeagnus angustifolia**
Siberian elm **Ulnus pumila**
Wild plum **Prunus americana**

* * * *

President's Page

(Concluded from page 27)

cover the expenses incurred by this campaign.

Jean Jonkel presented the story of the proposed emblem for S. D. **O**. U. With encouragement from Lois and Herman Chapman, Wayne Trimm was persuaded to paint a beautiful lark bunting emblem. This will be available for the cover of Bird Notes, book plates, shoulder patches, and car decals. The members voted to give the committee authority to go ahead with this project.

Alfred Peterson, Ruth Habeger, J. W. Johnson, Paul Springer and Lowry Elliott were elected directors with terms expiring in November, 1969.

Milt Reeves of the Minneapolis office, U. S. Fish and Wildlife Service, showed us a film, "The Bald Eagle" and made an extremely interesting talk, telling of the importance of South Dakota as a wintering area for eagles. Of the 1321 Bald Eagles using the upper midwest last January, 468 were in South Dakota. Of the 361 Golden Eagles in the region, South Dakota had 230 or over half. It appears that our eagles have not yet suffered as much from pesticides as those on the Great Lakes and the East Coast.—**Webster.**

General Notes of Special Interest

SWAINSON'S HAWKS HARASS OWLS—The Great Horned Owl flew off the nest to a grove of trees across the James River as I approached the area, which is about 12 miles north of Huron. I was checking the status of the young for possible banding on April 13, 1966. Just as I had climbed to the nest, which was occupied by a two or three week old owlet, I noticed the adult owl had been joined by another and was now flying toward me. When the owls were in the open over the river a pair of Swainson's Hawks chased them back to cover in the grove. The hawks soon left, allowing the owl to return to the nest.—**D. G. Adolphson, Huron.**

* * *

WAY OF NORTHERN SHRIKE WITH A SPARROW—Again a Shrike has chased a House Sparrow against the picture window, then picked it up and carried it away. This time it was slowed down somewhat by a chicken-wire fence which we have erected around my small flower garden. As the Shrike made several puzzled attempts to drag its prey through the netting, I had time to observe it closely at a distance of about seven feet. The striping on its breast, which distinguished it as a Northern, was plainly visible.

Because I had noticed that Shrikes sometimes carry small birds in their beaks, whereas most birds of prey carry their victims in their claws, I was interested in seeing how this "butcher bird" transported its Sparrow. When it first fell upon the limp little bird, it used its savage hooked beak to tear some of the feathers out of its breast. Then, noticing me at the window, it lifted the Sparrow in its beak and attempted a getaway, which was foiled by the fence. Failing that, the Shrike seized its victims in its claws and flew over the fence and into the grove.

Last summer I surprised a Shrike eating a small bird which it had impaled on a thorn of a Russian Olive tree. I was amazed at the dexterity with which it removed the dead bird from the thorn, carried it to another tree a short distance away, and fastened it on another thorn by the skin of its neck. All his was done with the beak, the feet being used for nothing but balancing in the branches.—**Velma DeVries, Belvidere.**

* * * *

THE MALADY LINGERS ON—The persistence of DDT was well documented in the recent report by the Division of Fisheries and Game that the pesticide load in the Assabet-Concord-Sudbury River system has decreased 60 per cent.

William A. Tompkins, chief aquatic biologist, noted that four towns on the watersheds had sprayed 6000 pounds of DDT in 1962; less than 2000 pounds in 1963; and less than 100 pounds in 1964. It is a record of excellent progress in restraint of this damaging pesicide. But, it is equally obvious that the decline from 6000 pounds to less than 100 pounds of DDT should have reduced the rivers' contamination by more than 60 per cent. Such persistence emphasizes the conservationist's alarm over the damage that DDT does to the ecosystem.

Commenting on the decline in the use of DDT, Red Chapter, Division publicist, wrote: "The biologist feels that this is a result of increased awareness of the dangers of unwise use of pesticides pointed out by concerned conser-

vation agencies, and is reflected by the hesitancy of many municipalities to use this pesticide in the face of mounting public interest."

It is also a by-product of the growing recognition that DDT has lost its killing power in relation to many insects.—**Massachusetts Audubon Newsletter.**

* * * *

ODDLY COLORED HOUSE SPARROW AT HURON—On March 5, 1966, the second day of the big blizzard, we saw a light tan House Sparrow among some 20 others at the feed tray in our back yard. The bird stood out strongly in the midst of the normally colored flock. Later in the day it rested with them in a clump of shrubbery near the house.

The bird's eyes appeared dark in the pale brown face. The primaries and tail feathers were considerably lighter than the body feathers of the upper parts. The breast was light gray with hardly a tinge of brown. A light yellow cast was barely noticable at the throat and a slight brownish spot of small area was plain just below the throat. The beak was light with a pinkish tinge, hardly noticable against the light color of the rest of the bird.

On Sunday, March 6, a bright day after the end of the storm, this tan sparrow was again present in the yard with a small flock of normally colored sparrows. It has not been seen again at the present writing, April 14, 1966.

Presumably this is the same bird we have seen on two prior occasions, one in the yard on December 26, 1964, and the other a few weeks later, some blocks away.—**J. W. Johnson, Huron.**

* * * *

EARLY SPRING OREGON JUNCOS, REDPOLLS ON WHITE RIVER—In checking my records I find that the spring birds are making their appearance earlier this year than last. In 1965, various ducks, male Redwings, Killdeers, migratory Meadowlarks and Flickers made their first showing on March 31 and April 1. This year they began to appear between March 12 and 15. (The first Red-shafted Flicker was spotted March 24.)

We have had Tree Sparrows around all winter, in contrast to a year ago when we saw hardly any. The Chickadees didn't come to the feeder until late in January, but they have been steady customers ever since.

The three-day blizzard which hit here the first week in March killed several Horned Larks. On the second day of the blizzard we saw the first Redpolls that we have ever recognized. A male was looking for food on a bare spot near one of the south windows. Later that day we saw a pair on a fence near the barn. And the next morning the children found a dead female in the yard. At our neighbors, about two miles down the river, the children reported finding a dead "sparrow with a red forehead." I have wondered whether the high winds brought the birds some distance away from their natural wintering location, or whether they have been in the fields or along the river here and we had just never seen them before.

The storm brought several Juncos to share the Chickadees' sunflower seeds. Among them were some Oregon Juncos. This was our first glimpse of these little fellows with their sharply contrasting black heads and pink bills.

The men have spotted a Bald Eagle several times this winter.

Migrating and/or nesting waterfowl will find our area much more to their liking this season, as the stock-water dams which were dry last year are now overflowing as a result of melting snow.

It seems good to note the increasing activity in sky and treetop, and we are looking forward to the return of the songbirds.—**Velma DeVries, Belvidere.**

NATIONAL ECOLOGICAL SURVEY—Senator Gaylord Nelson of Wisconsin has introduced a bill (S. 2282) authorizing the Secretary of Interior to conduct a program of research into our natural environmental systems. An identical measure (H. R. 9955) has been introduced in the House of Representatives.

In introducing his bill, Senator Nelson commented:

"Ecology—the study of the delicate relationships that bind all living creatures to one another and to their natural home, the relationships that make up the balance of nature—is fascinating and valuable for its own sake.

But to a society in which population and technology are pressing even harder against a dwindling natural resource base a more precise understanding of ecology is vitally necessary.

Land use and natural resource use decisions must be made. If they are to be made wisely, we must know more than we do now about ecology."—**Massachusetts Audubon Newsletter.**

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Farm Island Banding

(Concluded from Page 35)

Orchard Oriole, SR, M2	22
Baltimore Oriole, SR, M1, M2	4
Cowbird, SR, M1, M2	9
Scarlet Tanager, SR, M2	2
Cardinal, PR, M1, M2, S1	3
Rose-breasted Grosbeak, SR, S1	1
Black-headed Grosbeak, SR, M1, M2	35
Indigo Bunting, SR, M2, S1, S2	8
Lazuli Bunting, SR, M2	6
American Goldfinch, PR, M2	3
Towhee, Spotted, SR, M1—S2	32
Savannah Sparrow, SR, S2	1
Vesper Sparrow, SR, S2	4
Slate-colored Junco, WR, S2	6
Chipping Sparrow, SR, M1, S1, S2	7
Clay-colored Sparrow, SR, M1, M2, S2	15
Field Sparrow, SR, S2	2
Harris' Sparrow, M, M1, S2	4
White-crowned Sparrow (Gambel's) M, M1, S2	5
White-th. Sparrow, M, M1, S2	28
Lincoln's Sparrow, M, M1, S2	12
Song Sparrow, SR, S2	2
64 Species	718 individuals

—**Brookings.**

* * * *

RAILS—I am beginning my doctoral thesis on the behavior of the sora and Virginia rails. One of the aspects I am working on is their spring and fall migrations, correlated with weather patterns. I hope to follow the rail migrations up and down the Mississippi Flyway by correspondence. Can you help me?

I need to know when the rails migrate through your area, particularly the time of peak migration, and the exact locations where each occurs. If you can help me with this, I would be most appreciative. Even if your information is small and bases on few incidental observations, please let me hear from you. Thank you.—**Gerald Kaufmann, 5550 O'Neil St., Dubuque, Iowa.**

* * * *

UNUSUAL MALLARD NESTING SITE—Last Sunday (May 8, 1966) I found a mallard hen nesting in an old magpie nest. This nest is in a tree about 12 feet above the ground and is one mile from the nearest water. She was still on the nest in the afternoon of May 10. I have found mallard nests before but always on the ground.

I know that wood ducks and goldeneyes nest in trees but isn't this unusual for a mallard?—**T. V. Paulhamus, Rosebud, P. O. Box 8.**

Book Review

J. W. Johnson

BIRDS of Colorado, vols. 1 and 2, by Alfred M. Bailey and Robert J. Niedrauch. Profusely illustrated with black and white photographs and 124 color plates. xxxii plus 895 pages including index, 9" x 12." Denver Museum of Natural History. 1965. $35.

These sumptious volumes surely must mark a peak in state bird books that will not likely be surpassed in our time. For they are not just picture books. The detail of Recognition, Range, Status in Colorado and studies of life histories represent a satisfying mass of accumulated information. And, of the 503 species and subspecies studied, few have not been recorded in South Dakota and most are regular migrants or residents in one part of the state or another.

But picture books they are along with their wealth of concise information: Color plates by 23 artists, including our own Wayne Trimm, our old friends, Roger Tory Peterson and Walter J. Breckenridge and many others we will know better as the years go by. Don Eckelberry did the plate of the Lark Buntings and it is easily my favorite of the lot. No doubt there is at least a secondary correlation between its appeal and its choice for the dust jackets in addition to its being of the state bird.

But, in describing these books, one must save space for the photographs. That they vary from adequate to outstanding is to be expected. While 34 other photographers are listed, numbers of the pictures lack a credit line and so are the work of the authors. Even in black and white their impact is greater than many of the color plates. Selected from an almost unlimited collection of superior pictures, they stand a lot of looking at.

The account of the state of Colorado is informative and interesting, its life zones and plant associations being the stuff of habitat. Those of us hoping to visit Colorado with time to study the birds will find these volumes, large and heavy as they are, a must for reference and advance preparation. Of course they are not for the field but, in the evening and in the car, they will come into their own.

The authors are particularly well suited for their task, really a compilation and refinement of results of a life time of dedicated work by both. Not only have they had long association with Colorado and the Denver Museum but both have spent many years on expeditions throughout North and Central America and the Pacific Islands. Their books are a treasure to own and not just for the people of Colorado.

WINTER MEETING

The dates of November 25-27, 1966 have been selected for the Winter Meeting at Vermillion, according to Byron Harrell, who extended the invitation at the Brookings Meeting. Elections will now be held at the Winter Meetings; arrange your schedule so you can be there.