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The Kentucky Warbler

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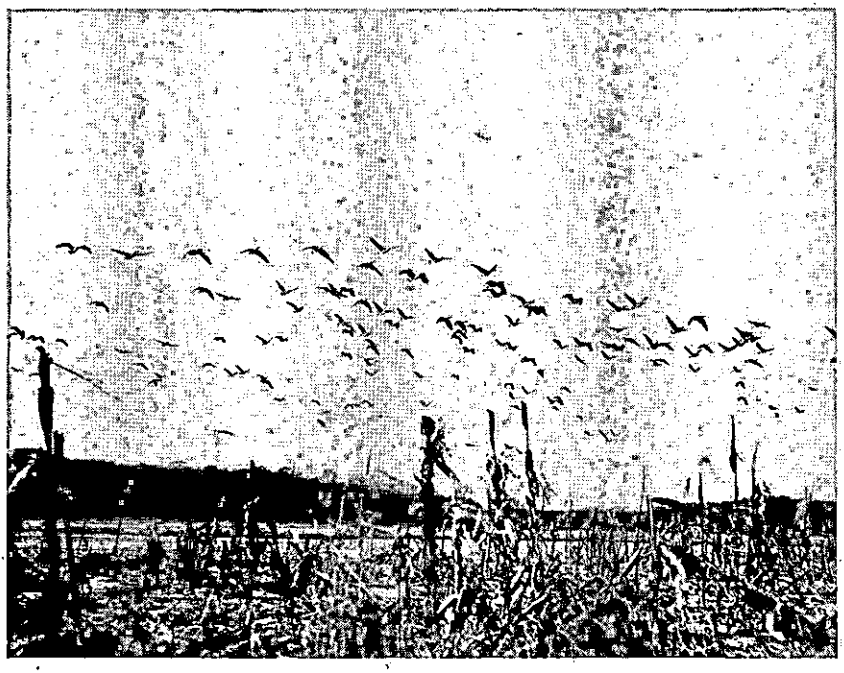

IN THIS ISSUE

THE KENTUCKY ORNITHOLOGICAL SOCIETY

Founded in 1923 by B. C. Bacon, L. Otley Pindar, and Gordon Wilson

THE KENTUCKY WARBLER

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Editor ..... H. E. Shadowen, Biology Department, Western Kentucky Univ., Bowling Green 42101

OUR COVER

The photograph of a flock of Canada Geese passing over Crooked Creek in the Land Between the Lakes was provided by Dr. Ray Nall of the Tennessee Valley Authority.

ORIENTATIONAL RESPONSES IN SELECTED PASSERINE SPECIES

BLAINE R. FERRELL

Migration of birds over long distances has intrigued man from earliest times. Recorded observations date back approximately three thousand years to the records of Aristotle (Lincoln, 1950). Only recently has man developed the equipment and techniques which enable him to test the individual factors involved in the migration of birds.

One such factor is orientation. Experiments have been done under the artificial skies of a planetarium (Sauer and Sauer, 1960; Emlen, 1967, 1970). Their data demonstrate that migratory orientation is dependent upon celestial cues. Outside studies agree with these findings but indicate that these cues may act only in determining compass direction and not position (Kramer, 1959; Wallraff, 1960). Thus, it seems clear that other cues might be involved which supplement celestial cues.

In attempting to test the orientational behavior of certain Passerine species, three Fringillids were chosen. The House Sparrow *(Passer domesticus)* was choosen to serve as a control. Thirteen Dark-eyed Juncos *(Junco hyemalis)*, thirteen White-throated Sparrows *(Zonotrichia albicollis)* and fourteen Purple Finches *(Carpodacus purpureus purpureus)* were captured between February 2, 1974 and April 17, 1974.

This study was initiated to determine whether celestial cues are necessary for the selected Passerine species to exhibit an orientational response in the normal migratory direction. Results from tests conducted in the planetarium were to be compared with results of tests conducted under natural skies. If the responses elicited under both conditions were comparable, it should then be possible by manipulation of the skies of the planetarium to learn whether the birds were using celestial cues in determining migratory orientation. If the birds did orient using celestial cues, they should orient in a direction compensating for the shift in the star pattern.

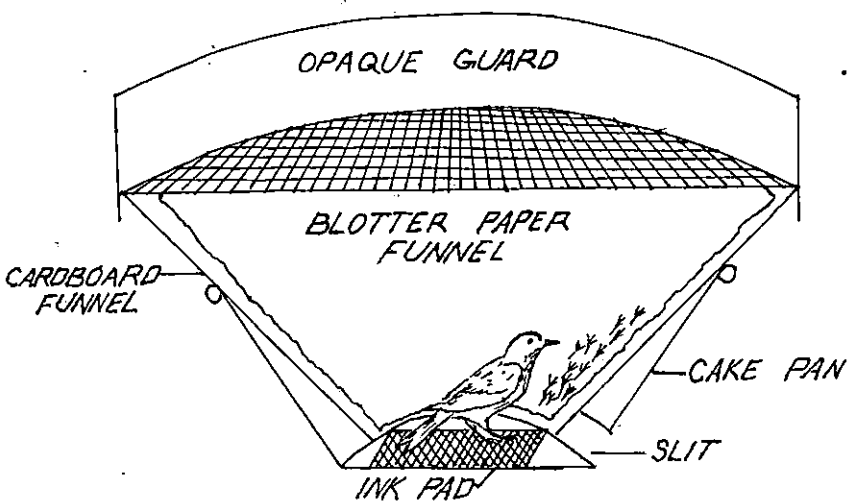
METHODS

All birds were captured with mist nets at least two weeks prior to being tested. They were maintained in twelve wire holding cages, each 38 x 61 x 31 cm., situated on the roof of the Western Kentucky University biology building.

The test cage unit, a modification of Emlen's original design (fig. 1), consisted of a cardboard funnel mounted in a two-quart pan. The actual footprint records of the birds were recorded on blotter paper funnels inserted inside the cardboard funnel. Preliminary tests conducted on the roof of the biology building revealed that the apparatus worked, but horizon glow was an undesirable factor. Therefore, tests under natural skies were conducted five miles south of Bowling Green on the Western Kentucky University farm. The testing apparatus was placed on wooden platforms in an open cow pasture (plate 1). Neither trees nor horizon glow were evident to the birds in the test cages.

The planetarium tests were conducted in the forty-foot Hardin Planetarium on the Western Kentucky University campus. The planetarium skies were set to duplicate the natural star pattern, and skies were rotated

FIGURE 1



four degrees every 15 minutes to simulate the relative movement of the stars (plate 1). All tests were made between nine and 11 p.m.

In order to compare footprint records, it was necessary to convert them to numerical values. Two values, mean angular direction expressed in degrees and activity units, were used. Five activity values were established. The heaviest footprint pattern recorded in the tests was given an activity value of five with the lightest pattern of activity receiving a value of one. The intermediate values represented equal increments of footprint density.

The blotter paper funnels with footprint records were opened after 15 degree sectors were marked on the funnel with 0 representing due north. The activity recorded in each 15 degree section was assigned an activity value, and a vector diagram was drawn for each of the birds tested. The radius of the vector diagram circle was equivalent to an activity value of five. Vectors representing activity values less than five were drawn proportional to the radius. Using these activity value diagrams, it was possible to calculate the mean angular direction using the formula described by Emlen (1967) (figure 2). Since spring migration is usually in a northeasterly direction, any orientation with a mean angular direction between 315 degrees and 90 degrees was considered to be in a normal migratory direction, assuming 0 degree represents due north.

To indicate the intensity of the marking toward the mean angular direction, it was necessary to devise a rough indicator system. This was accomplished by summing all the activity units of a given vector diagram and dividing this total (Nt) by the number of vectors indicating activity (Nv), thus giving what was referred to as an activity ratio (figure 2).

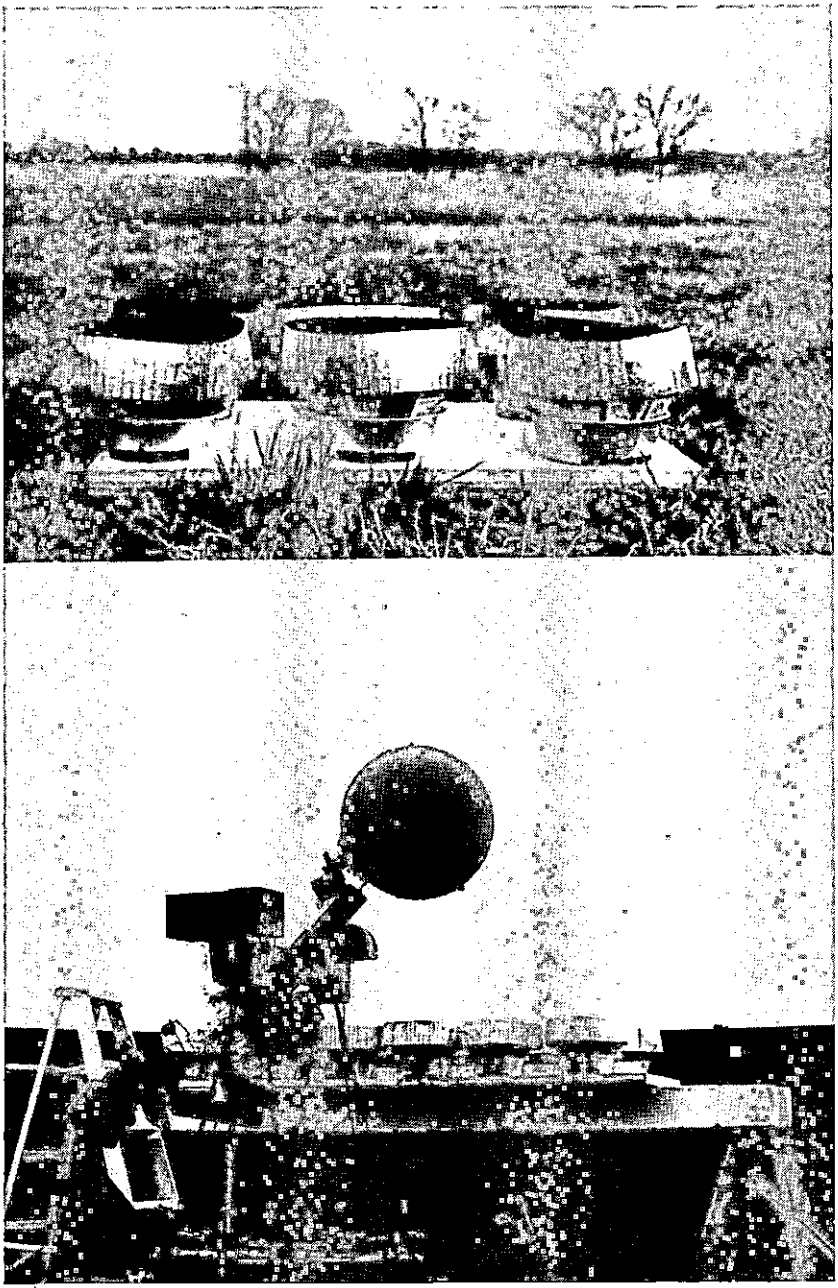


Plate 1. Test apparatus outside and in the planetarium.

Any bird with an activity ratio value below or equal to one was considered to be inactive. Birds exhibiting activity ratio values above one were considered to have exhibited Zugunruhe (nocturnal unrest). Only those birds exhibiting Zungunruhe having vectors with activity units equal to or greater than three and a mean angular direction were considered to have exhibited orientational behavior. This method gave a good indication of those birds orienting their Zugunruhe.

Weather aspects of cloud cover and temperature were monitored by direct observation on each test night. Barometric pressure and temperature patterns were supplied by Mr. Willard Cockrill, meteorologist of Western Kentucky University.

RESULTS AND DISCUSSION

In using the method of analysis described above, 29 of 40 birds exhibited orientational behavior within the test period, but only one bird oriented in the normal migratory direction under planetarium skies.

Preliminary tests on the roof of the biology building involved 37 birds. Nineteen exhibited oriented Zugunruhe, but most of them not in the normal migratory direction. Figure 3 gives roof, farm, and planetarium vector diagrams. It was evident that lights near the roof testing site were influencing the direction of orientation; therefore, the birds were moved to the Western Kentucky University farm.

Orientational behavior was observed in 62% of the Dark-eyed Juncos tested at the farm; eight of 13 birds demonstrated oriented Zugunruhe, and seven oriented in a northward direction, as shown in table 1. Several birds exhibited orientational behavior more than once.

Orientational behavior was observed in 46% of the White-throated Sparrows at the farm test site; of the six birds which demonstrated orientational behavior, all exhibited this behavior in a northward direction as shown in table 2.

Orientational behavior was observed in five of 14 (38%) Purple Finches, with four birds orienting in a northward direction (table 3).

In viewing the results of all three test species, orientational behavior directed in a northward direction was exhibited by all three. Therefore, it appears that these Passerine species did orient their Zugunruhe under natural skies (figure 3).

In analyzing the overall results of tests conducted under artificial skies in the Hardin Planetarium, little orientational behavior was observed and, with the exception of Dark-eyed Junco 2R, none was in the normal migratory direction (figure 3). In comparing the seven Dark-eyed Juncos, six White-throated Sparrows, and the four Purple Finches for which orientational behavior was recorded in a normal migratory direction under natural skies with observations in the planetarium of these same birds, it was apparent that the results of the planetarium tests were negative.

It was also necessary to demonstrate that the birds were physiologically ready to migrate. Zugunruhe has been shown to accompany or follow an increased deposition of subcutaneous fat (Weise, 1956). All but one of the birds which showed increased activity and orientational behavior in tests at the farm experienced increased weight (figure 4). Dark-eyed Juncos, on the average, showed an increase of 17% greater than their original body weights at the beginning of the test. It is possible that the White-

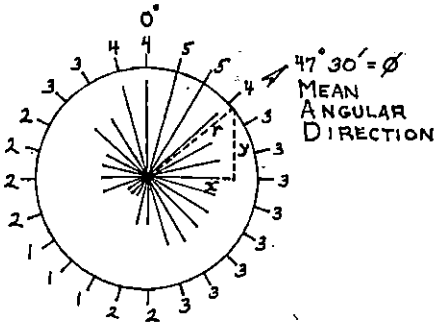


FIGURE 2

MEAN ANGULAR DIRECTION

$\text{Cos } \phi = \frac{x}{r}$ $\quad \text{Sin } \phi = \frac{y}{r}$

IN WHICH $r = \sqrt{x^2 + y^2}$

AND

$$x = \frac{N_1 \text{Cos } 15^\circ + N_2 \text{Cos } 30^\circ + \cdots + N_{24} \text{Cos } 360^\circ}{N_T}$$

$$y = \frac{N_1 \text{Sin } 15^\circ + N_2 \text{Sin } 30^\circ + \cdots + N_{24} \text{Sin } 360^\circ}{N_T}$$

ACTIVITY RATIO

$$\frac{N_T}{N_V} = \frac{67}{24} = 2.79$$

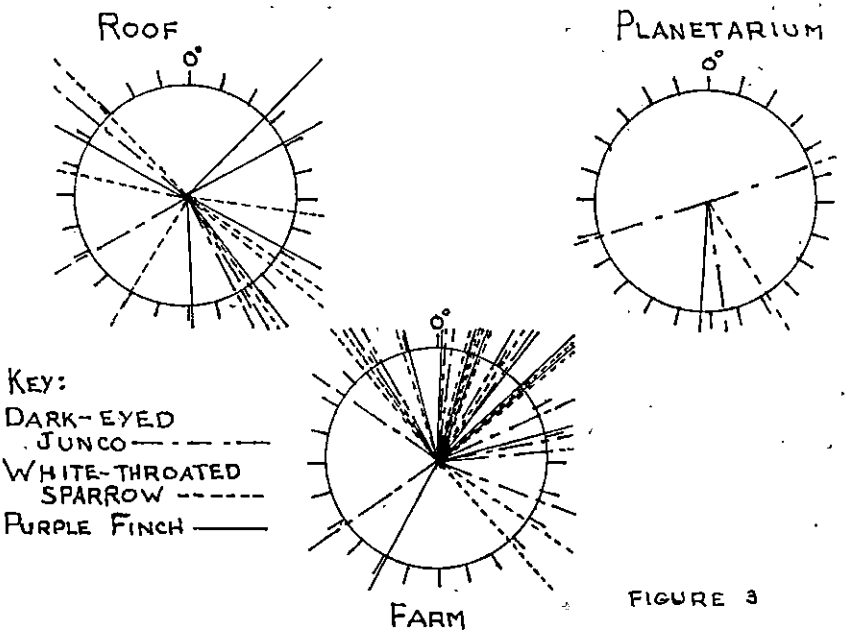


FIGURE 3

Table 1. Summary of the activity exhibited by Dark-eyed Juncos in tests conducted at the Western Kentucky University Farm.

Male Bird	*Date*	*Wt. Gms.*	*Activity Ratio*	*MAD*	*Type of Activity*	*Low Wt.*	*Date*	*Peak Wt.*	*Date*	*Cloud Cover*	*Time*	
2B	4/25	20.6	2.96	111	OB	18.8	3/22	21.0	4/22	C	9-11 p.m.	
	4/26		3.00	102	OB					C	12- 2 a.m.	
	4/26		2.92	128	OB					C	3- 5 a.m.	
2P						17.6	4/03	20.0	4/25			
3R	4/17	17.8	1.27	307	ZU	17.2	4/02	17.8	4/17	C	9-11 p.m.	
	5/02	17.4	1.80	46	ZU					PC	9-11 p.m.	Moonlight
3Y						18.2	3/21	22.8	4/24			
6B	4/16	21.1	1.14	312	ZU	18.1	3/18	21.7	4/23	PC	9-11 p.m.	
	4/23	21.7	2.17	78	OB					C	9-11 p.m.	
	5/05	21.0	2.13	239	OB					C	9-11 p.m.	Moonlight
6R	4/16	20.8	2.08	331	OB	18.5	3/25	21.8	4/27	PC	9-11 p.m.	
	4/23	21.4	3.79	329	OB					C	9-11 p.m.	
	5/05	21.5	2.50	32	OB					C	9-11 p.m.	Moonlight
	5/10	21.3	3.04	14	OB					C	9-11 p.m.	
6Y	4/23	22.6	2.00	82	OB	19.7	3/25	22.6	4/16	C	9-11 p.m.	
	5/05	22.4	2.73	21	OB					C	9-11 p.m.	Moonlight
2R	4/25	21.2	3.25	11	OB	17.6	3/29	21.2	4/25	C	9-11 p.m.	
	4/26		4.13	48	OB					C	12- 2 a.m.	
	4/26		3.29	309	OB					C	3- 5 a.m.	
	5/08	20.6	1.35	355	ZU					PC	9-11 p.m.	
2Y	4/25	21.8	2.25	48	OB	17.3	4/03	21.8	4/25	C	9-11 p.m.	
	4/26		2.30	194	OB					C	12- 2 a.m.	
	4/26		1.31	216	ZU					C	3- 5 a.m.	
2N						15.3	5/04	17.4	3/29		Died at 13.6 gms.	
3B	4/17	18.9	1.17	180	ZU	16.3	3/21	21.2	4/24	C	9-11 p.m.	
3P	4/17	20.0	2.83	29	OB	17.3	3/21	20.8	4/24	C	9-11 p.m.	
	4/24	20.8	1.71	64	OB					C	9-11 p.m.	
6P	4/16	18.2	1.92	308	OB	17.8	4/04	21.0	5/10	PC	9-11 p.m.	
	4/23	19.3	1.83	4	OB					C	9-11 p.m.	

Key: All weights are expressed in grams to the nearest tenth of one gram.
OB=Orientational Behavior
ZU=Zugunruhe
C=Clear skies
PC=Partly Cloudy
OC=Overcast
MAD=Mean Angular Direction

Table 2. Summary of the activity exhibited by White-throated Sparrows in tests conducted at the Western Kentucky University Farm.

Male Bird	*Date*	*Wt. Gms.*	*Activity Ratio*	*MAD*	*Type of Activity*	*Low Wt.*	*Date*	*Peak Wt.*	*Date*	*Cloud Cover*	*Time*	
1B	4/25	27.3	2.05	19	OB	25.5	4/12	27.3	4/22	C	9-11 p.m.	
	4/26		1.85	9	OB					C	12- 2 a.m.	
	4/26		1.55	89	ZU					C	3- 5 a.m.	
	5/04	27.3	2.00	48	OB					OC	9-11 p.m.	
	5/08		1.88	165	ZU					PC	9-11 p.m.	
1R						22.3	4/03	23.3	4/15			
1P						22.8	5/08	24.8	3/29			
4Y	4/17	26.8	1.58	329	OB	26.4	4/24	28.0	3/21	C	9-11 p.m.	
	5/02	28.0	2.13	139	OB					PC	9-11 p.m.	Moonlight
4P	5/02	26.0	1.19	193	ZU	24.3	4/15	26.8	3/26	PC	9-11 p.m.	Moonlight
5B	4/16	22.5	1.58	325	OB	20.9	3/29	23.8	5/10	PC	9-11 p.m.	
	4/23	22.7	1.63	25	ZU					C	9-11 p.m.	
	5/10	23.8	2.92	344	OB					C	9-11 p.m.	
5R	4/16	23.6	1.17	269	ZU	22.4	3/30	23.8	4/04	PC	9-11 p.m.	
	4/23	23.8	1.21	35	ZU					C	9-11 p.m.	
5Y	4/16	23.4	1.08	336	ZU	22.9	3/30	25.3	5/10	PC	9-11 p.m.	
	4/23	24.1	1.20	317	ZU					C	9-11 p.m.	
1Y	4/25	23.2	1.53	55	ZU	22.6	3/29	23.7	4/22	C	9-11 p.m.	
	4/26		1.20	56	ZU					C	12- 2 a.m.	
	4/26		1.24	65	ZU					C	3- 5 a.m.	
	5/04	23.3	1.33	27	ZU					OC	9-11 p.m.	
4B	4/17	27.3	2.79	48	OB	24.6	4/02	27.4	4/08	C	9-11 p.m.	
	4/24	27.0	2.17	21	OB					C	9-11 p.m.	
	5/02	25.2	2.05	122	OB					PC	9-11 p.m.	Moonlight
4R	4/17	20.8	2.17	17	OB	20.5	5/02	21.5	3/26	C	9-11 p.m.	
	5/02	20.5	1.21	191	ZU					PC	9-11 p.m.	
5P	4/16	21.5	1.75	33	OB	20.0	5/01	22.1	3/25	PC	9-11 p.m.	
	4/23	21.9	1.29	55	ZU					C	9-11 p.m.	
	5/05	21.1	1.17	28	ZU					C	9-11 p.m.	

Key: All weights are expressed in grams to the nearest tenth of one gram.
OB=Orientational Behavior
ZU=Zugunruhe
C=Clear skies
PC=Partly Cloudy
OC=Overcast
MAD=Mean Angular Direction

Table 3. Summary of the activity exhibited by Purple Finches in tests conducted at the Western Kentucky University Farm (continued).

Male Bird	*Date*	*Wt. Gms.*	*Activity Ratio*	*MAD*	*Type of Activity*	*Low Wt.*	*Date*	*Peak Wt.*	*Date*	*Cloud Cover*	*Time*	
7R						21.0	4/03	29.9	5/04			
7Y	4/26	29.1	1.05	76	ZU	22.7	3/22	30.0	5/04	C	12- 2 a.m.	
	5/08	28.4	1.30	50	ZU					PC	9-11 p.m.	
7P	5/08	26.8	2.00	74	OB	22.2	4/03	26.8	5/08	PC	9-11 p.m.	
8B						23.0	4/17	35.7	4/29			
8R	4/17	23.2	2.21	209	OB	21.9	3/26	24.2	4/29	C	9-11 p.m.	
8P						22.6	4/02	27.7	4/29			
8N						24.8	4/08	29.2	4/24			
10B						23.8	3/25	30.2	5/01			
10P						21.7	4/04	27.8	5/05			
10N	4/16	22.0	1.53	36	OB	21.3	4/04	27.8	5/01	PC	9-11 p.m.	
	4/23	22.5	1.40	18	ZU					C	9-11 p.m.	
	5/10	26.1	1.14	271	ZU					C	9-11 p.m.	
7B						23.0	3/18	30.4	4/25			
8Y	4/17	24.7	1.68	15	OB	24.2	4/14	30.3	4/29	C	9-11 p.m.	
	4/24	28.7	1.07	43	ZU					C	9-11 p.m.	
	5/02	29.5	1.14	113	ZU					PC	9-11 p.m.	Moonlight
10R						23.3	3/25	30.2	5/10			
10Y	4/16	21.9	1.69	2	OB	21.0	3/25	24.0	5/05	PC	9-11 p.m.	
	4/23	22.7	1.92	345	OB					C	9-11 p.m.	
	5/01	22.4	1.29	286	ZU					PC	9-11 p.m.	
	5/05	24.0	1.55	138	ZU					C	9-11 p.m.	
	5/10	23.4	2.00	44	OB					C	9-11 p.m.	

Key: All weights are expressed in grams to the nearest tenth of one gram.

OB=Orientational Behavior

ZU=Zugunruhe

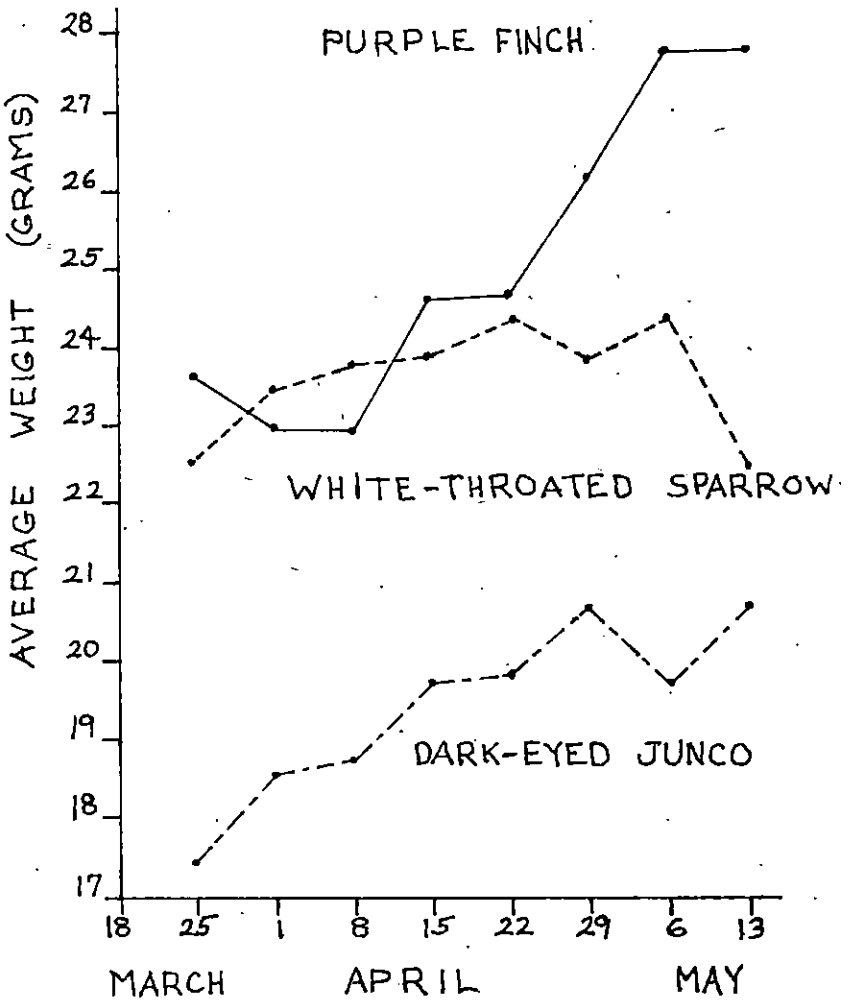
C=Clear skies

PC=Partly Cloudy

OC=Overcast

MAD=Mean Angular Direction

FIGURE 4


PURPLE FINCH
WHITE-THROATED SPARROW
DARK-EYED JUNCO
AVERAGE WEIGHT (GRAMS)
28
27
26
25
24
23
22
21
20
19
18
17
18
25
1
8
15
22
29
6
13
MARCH
APRIL
MAY

throated Sparrows used in this study may have almost reached peak fat deposition levels before the beginning of the test period; they attained weights approximately 8% greater than their weights at the beginning of the study. A great increase in weight was observed in most of the Purple Finches, with an average weight increase of 21%; however, of the four birds which exhibited orientational behavior in the normal migratory direction, three did so at a weight nearer their minimal weights. This finding was compatible with the weight pattern of this species as recorded under natural conditions (Bartleson and Jenson, 1955).

As the main intent of this study was to determine if celestial cues are used in orientational behavior by the three species tested, weather conditions were somewhat neglected. Cloud cover, temperature, and barometric pressure were the only weather factors monitored. Heavy cloud cover may have inhibited orientational behavior. Orientation was noted under a variety of cloud cover conditions (tables 1, 2 and 3) including overcast skies on May 4, 1974.

In summarizing the behavior of the three species with respect to weather conditions, differences were evident. The Dark-eyed Juncos seem to migrate with disregard for particular weather conditions, but they migrate only when near peak weights; the date of actual migration seems to be correlated more with physiological readiness than with a particular set of weather conditions. They may use stars in orienting their migratory response, as one bird did under planetarium skies.

In White-throated Sparrows a peak weight appears to be necessary before orientational behavior will be exhibited. Unlike the Dark-eyed Juncos, these birds may rely heavily upon the presence of proper weather conditions before migration ensues. Their maintenance of peak weight levels may be adaptive in that they will be ready to migrate when the appropriate weather conditions appear.

Purple Finches also appear to migrate under favorable weather conditions but at low weight levels. The fact that these birds initiated migration at low weights and ceased to show orientational behavior during a rapid increase in weight suggests that these birds may initiate migration at night under favorable weather conditions but continue migration while feeding in the daytime.

It was found that the three species may not rely upon the stars for orientational cues; such cues in the planetarium were not sufficient to elicit orientational behavior in birds physiologically ready to migrate. It is apparent from this study that several different migratory mechanisms may be involved. In all cases a combination of factors was probably in evidence. It is necessary to determine such factors and introduce them into planetarium tests before nocturnal migratory orientational cues may be finally determined. It appears that birds can orient under overcast skies and various other cloud cover conditions. The orientational response may be due to a combination of factors which differ for different species. Therefore, each species must be looked at individually.

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KENTUCKY ORNITHOLOGICAL SOCIETY FIFTY-SECOND ANNUAL FALL MEETING

OCTOBER 3-5, 1975

The Kentucky Ornithological Society held its 1975 Fall Meeting at Kentucky Dam Village State Resort Park, Gilbertsville, Kentucky on October 3-5.

Dr. Burt L. Monroe, Jr. opened the Friday evening session with announcements concerning the program of the meeting and field trips to be made in the Land Between the Lakes. He announced that the number of summer breeding bird survey routes had been doubled, that anyone interested in making a survey should let him know, and that the Society can expand the counts within the state. The meeting was then turned over to A. L. Whitt, Vice-president and program chairman, who made a report on recent findings of the Red-cockaded Woodpecker. A former student and current wildlife biologist has found two active nest trees in the Beaver Creek area of McCreary County just north of Whitley City. Mr. Whitt introduced Dr. Clell Peterson who presented a slide program on shore birds. He gave information concerning a wide variety of shore birds including some studied on the mud flats of Blood River and Bailey's Hollow on the west shore of Kentucky Lake — also the islands in the Pine Bluff area.

Dr. W. R. Kingsolver presented some information concerning St. Louis encephalitis, its involvement with birds, and some methods of spraying presently being undertaken.

The Monk Parakeet was discussed — its description and its present range. After further announcements for late arrivals, the Friday evening meeting was adjourned.

A large number assembled at 7:30 a.m. in front of the Village Inn on Saturday morning and drove to the Land Between the Lakes. Several species of migrating warblers were sighted on the Old Ferry Road and along the creeks. Both field groups ended the morning at the silo area and scanned Lake Barkley for shore and water birds. The weather was excellent for the field trips.

The Board of Directors met at 3:30 p.m., followed by the General Business Session at 4:30 p.m. The Minutes of the Spring meeting and the Treasurer's report were approved. Dr. Herb Shadowen announced that Stephen Beatty, Park naturalist at Cumberland Gap National Park, would be conducting a bird count on Saturday, October 25th.

The suggested places and dates for the 1976 Spring meeting were Mammoth Cave National Park and Barren River State Resort Park on April 30 to May 2 or April 23 to 25. The suggested Fall meeting places and dates were Carter Cave State Park, Pine Mountain State Park, and Natural Bridge State Park on October 1 to 3 or September 24 to 26. It was also suggested by the Board of Directors that the selection of places and dates for future K.O.S. spring and fall meetings be moved up to one year and 18 months respectively because of difficulty in reserving space in the state park facilities.

Mrs. Anne Stamm requested that people send in their nest record cards. She has records of nests for over 100 species over a ten-year period, notes on 24 species for this year, and there will be others to add. Cornell is interested in all species and would like comments on findings in unusual localities or circumstances so that the validity of the report will not be questioned.

The report of the nominating committee was given by Dr. Clell Peterson. The following nominations were offered:

President: A. L. Whitt, Richmond
Vice President: Howard Jones, Frankfort
Corr. Sec.-Treasurer: Mrs. Clifford Johnson, Louisville
Recording Secretary: Sister Casimir Czurles, Owensboro
Councilors: Dr. Charles Guthrie, Bowling Green
Virginia Kingsolver, Carlisle

Dr. Shadowen moved that the slate be accepted as presented. The motion was seconded and approved by the voting body.

Dr. Hunter Hancock announced that the Kentucky chapter of the Nature Conservancy had been reactivated and that 47 acres of glacial bluffs in Boone County are under consideration for purchase. Everyone was invited to join.

Announcements were made concerning the banquet and evening program, and plans were made for the Sunday morning field trips with Howard Jones as leader. The meeting was adjourned.

At the banquet and evening program Dr. Monroe introduced present and newly elected officers and guests attending for the first time. He announced plans for the Sunday morning field trips and the possible places and dates of the 1976 Spring and Fall meetings. Attention was called to the exhibit of Mr. N. O. Belt's watercolors on display in the hall. The bird list of the day included 85 species.

Dr. Monroe was given recognition and a round of applause in appreciation for his years of service as president of the K.O.S.

A. L. Whitt introduced Dr. L. S. Putnam, of Ohio State University, speaking on the subject "The Problem of Blackbirds in the Lake Erie

Region." His slides included the biological research station of Lake Erie and the trapping and banding of blackbirds. Dr. Putnam's conclusions were that people have come into the natural environment of the blackbird, planted corn, and caused the problem by extending housing into the blackbirds' nesting, roosting, and feeding areas. We should be more attentive to our disturbance of the environment. He further stated that detergent spraying of blackbirds can be used humanely and effectively and that poisons are not as humane. Hawks are predators of the blackbirds, but few remain for this type of control. After a lively question period the meeting was adjourned.

Sunday morning field trips added a number of species to the total bird count of the meeting, which was 96.

There were 76 members and guests registered for the meeting.

Respectfully submitted,
Virginia Kingsolver
Recording Secretary

BIRD LIST FOR FALL MEETING, KENTUCKY DAM VILLAGE STATE RESORT PARK, 4 AND 5 OCTOBER, 1975:

Pied-billed Grebe, Great Blue Heron, Canada Goose, Mallard, Black Duck, Gadwall, Blue-winged Teal, Wood Duck, Ruddy Duck, Turkey Vulture, Sharp-shinned Hawk, Red-tailed Hawk, Red-shouldered Hawk, Rough-legged Hawk, Marsh Hawk, American Kestrel, Bobwhite, American Coot, Killdeer, American Golden Plover, Black-bellied Plover, White-rumped Sandpiper, Least Sandpiper, Western Sandpiper, Herring Gull, Ring-billed Gull, Caspian Tern, Mourning Dove, Yellow-billed Cuckoo, Black-billed Cuckoo, Barred Owl, Chimney Swift, Belted Kingfisher, Yellow-shafted Flicker, Pileated Woodpecker, Red-bellied Woodpecker, Red-headed Woodpecker, Yellow-bellied Sapsucker, Hairy Woodpecker, Downy Woodpecker, Eastern Phoebe, Eastern Wood Pewee, Olive-sided Flycatcher, Blue Jay, Common Crow, Carolina Chickadee, Tufted Titmouse, White-breasted Nuthatch, Red-breasted Nuthatch, Winter Wren, Carolina Wren, Mockingbird, Catbird, Brown Thrasher, Robin, Wood Thrush, Swainson's Thrush, Gray-cheeked Thrush, Eastern Bluebird, Golden-crowned Kinglet, Ruby-crowned Kinglet, Cedar Waxwing, Loggerhead Shrike, Starling, White-eyed Vireo, Yellow-throated Vireo, Red-eyed Vireo, Philadelphia Vireo, Tennessee Warbler, Orange-crowned Warbler, Parula Warbler, Magnolia Warbler, Yellow-rumped Warbler, Black-throated Green Warbler, Blackburnian Warbler, Chestnut-sided Warbler, Bay-breasted Warbler, Pine Warbler, Yellowthroat, Wilson's Warbler, House Sparrow, Eastern Meadowlark, Redwinged Blackbird, Common Grackle, Brown-headed Cowbird, Summer Tanager, Cardinal, Rose-breasted Grosbeak, Indigo Bunting, American Goldfinch, Rufous-sided Towhee, Slate-colored Junco, Chipping Sparrow, White-crowned Sparrow, White-throated Sparrow, Song Sparrow. Total species 96.

ATTENDANCE OF MEMBERS AND GUESTS AT THE FALL MEETING, 1975

BLANDVILLE: Newton O. Belt.
BOONEVILLE: Jon Gray, Willard Gray.
BOWLING GREEN: Dr. and Mrs. Herbert Shadowen.
CADIZ: Mr. and Mrs. Wesley Kemper.
CARLISLE: Dr. and Mrs. Wendell Kingsolver.
DANVILLE: Mr. and Mrs. W. C. Alcock, Mr. and Mrs. Harry Caldwell.
FRANKFORT: Mr. and Mrs. Howard Jones.
GEORGETOWN: Glen R. Wells.
GILBERTSVILLE: Mr. and Mrs. E. J. Conrad.
JACKSON: Pierre Allaire, Tom Callahan.
LEXINGTON: Mr. and Mrs. Alfred Reece, Dr. and Mrs. Andrew Uterhart.
LOUISVILLE: Jane Bell, Pat Bell, Mr. and Mrs. Jackie Elmore, Sue Hall, Mr. and Mrs. Clifford T. Johnson, Lucille Johnson, George Kinkead, Mr. and Mrs. Kenneth Leggett, Dr. and Mrs. Burt Monroe, Donald Parker, Mr. and Mrs. Jim Pasikowski, Evelyn Schneider, Dr. and Mrs. Frederick Stamm, Mr. and Mrs. Donald Summerfield, Mr. and Mrs. Alfred G. Susie, Audrey Wright.
MADISONVILLE: Thelma Gentry.
MURRAY: Shirley Gallimore, Dr. and Mrs. Hunter Hancock, Mr. and Mrs. Harry McGurk, Michael Miller, Clell Peterson, Paul Sturm.
OWENSBORO: Mrs. Edward Bowne, Sister Casimir Czurles, Mary Lydia Greenwell, Mr. and Mrs. Ramon Iles, Emogene Lashbrook, Wynema Sims, Tracy Thacker, Mr. and Mrs. L. E. Wilson.
PADUCAH: Mr. and Mrs. Lester B. Woolfenden.
PROSPECT: Mrs. Fred Hook.
RICHMOND: Mr. and Mrs. A. L. Whitt.
WILLIAMSBURG: Mr. and Mrs. Howard Partin.
MT. VERNON, ILL.: Mr. and Mrs. Theodore G. Glass.

REPORT OF THE TREASURER
October 1, 1975

GENERAL FUND

Bank Balance as shown by last report, October 1, 1974 ..... $1,687.14

Receipts

Membership Dues	$1,361.00	
Interest Income:		
Certificates (2) of Deposit (Endowment Fund) Colonial Federal Savings & Loan Assoc.	137.10	
Spring Meeting	198.00	
Fall Meeting	588.25	
Sale - Checklists, badges, Occurrences	97.98	2,382.33
Total Receipts		$4,069.47

Disbursements

Printing: Kentucky Warbler, 4 issues	$1,298.48	
Postage and Mailing Permit	110.59	
Supplies: Envelopes, labels, etc.	158.23	
Expenses - Spring Meeting	158.60	
Expenses - Fall Meeting	552.86	
Dues: Kentuckians for Environmental Planning	10.00	
Nature Conservancy	10.00	
Arm Badges	255.37	
Ky. Corporation fee and agent change	18.00	
Miscellaneous	66.77	
Life Memberships (2) to Endowment Fund	100.00	2,738.90
Balance, First National Bank, Louisville, Ky.		1,330.57
		$4,069.47

ENDOWMENT FUND

Balance in Savings Account, Jefferson Federal Savings & Loan Assoc., Louisville, Ky. September 28, 1974	$ 947.93	
Certificates (2) Colonial Federal Savings and Loan Association	2,000.00	$2,947.93

Receipts

Interest Income:		
Certificate, Colonial Federal	137.10	
Savings Account, Jefferson Federal	54.39	
Two Life Memberships	100.00	
Total Receipts		291.49
		$3,239.42

Disbursements

Transfer of Interest on Certificate to General Fund	137.10	
Total Disbursements		—137.10
Total		$3,102.32
Balance in Fund, October 1, 1975:		
Savings Account, Jefferson Federal		1,102.32
Certificates (2), Colonial Federal		2,000.00
Total		$3,102.32

THE GORDON WILSON FUND FOR ORNITHOLOGY

Balance in Savings Account, Greater Louisville Savings & Loan Assoc., Sept. 28, 1974	$ 409.73	
Certificate, Colonial Federal Savings & Loan Association	1,000.00	
		1,409.73
Receipts		
Interest on Savings Account	23.60	
Interest on Certificate	68.10	
Transfer from General Account	58.77	150.47
		$1,560.20
Balance in Savings Account, Greater Louisville Savings & Loan Association		560.20
Certificate, Colonial Federal Savings & Loan Association		1,000.00
		$1,560.20

BALANCE SHEET
October 1, 1975

Assets:	
Cash in General Fund, First National Bank, Louisville	$1,330.57
Savings Account, Jefferson Federal Savings & Loan Assoc.	1,102.32
Certificates (2) of Deposit, Endowment Fund, Colonial Federal Savings & Loan Assoc.	2,000.00
Savings Account, Gordon Wilson Fund for Ornithology, Greater Louisville Savings & Loan Assoc.	560.20
Certificate of Deposit, Gordon Wilson Fund for Ornithology, Colonial Federal Savings & Loan Assoc.	1,000.00
Net Worth: October 1, 1975	$5,993.09

Rose Mary Rommel Johnson, Treasurer

FIELD NOTES

RED-HEADED WOODPECKER MAY BE INCREASING IN FRANKLIN COUNTY

For many years — three or four decades — the Red-headed Woodpecker *(Melanerpes erythrocephalus)* has been quite rare in Franklin and adjacent Counties, though common before this. This year a number of adults have been seen and heard, indicating an increase or some change in dispersion. On June 2, 1975 an adult was seen and heard near Forks of Elkhorn, remaining in the vicinity for at least two weeks, perhaps

longer. On June 10, Sally Rice reported an adult at their farm near Swallowfield. On June 7 an adult was seen flying across Shadrick Ferry Road near Frankfort; on July 8, an adult was noted dead beside Bedford Road near Woodlake; and on July 23, another adult was seen near Switzer. These locations are several miles apart.

McBrayer, one of my Summer Breeding Bird Surveys taken for the U. S. Fish and Wildlife Service, is in Woodford and Jessamine Counties and is typical of Inner Bluegrass farmland. This year four Red-headed Woodpeckers were observed on this run. In the past one might be found about every two years. It was interesting to me that my resident Mockingbird *(Mimus polyglottos)* and others began to include the call of the Red-headed Woodpecker in their repertoire. I have no explanation for the apparent population increase, and I wonder if others have also seen this most welcome change. — Howard P. Jones, Route 6, Box 119, Frankfort 40601.

EARLY MIGRATORY MOVEMENTS THROUGH BREATHITT COUNTY IN JULY

While conducting a study of breeding bird populations during June and July 1975 on a variety of reclaimed surface mine habitats in Breathitt County I recorded a number of unusually early migrants.

My first sighting was on 9 July when two Killdeer *(Charadrius vociferous)*, one Solitary Sandpiper *(Tringa solitaria)*, a "peep" *(Calidris sp.)*, and one Black Duck *(Anas rubripes)* appeared at one of my study areas feeding along the edge of one of the farm ponds (See *Allaire, Ky. Warbler, 50:35, 1974* for the exact location and description of the area). I returned on 15 July and saw two Greater Yellowlegs *(Tringa melanoleuca)*. They too were feeding along the periphery of that particular farm pond. The birds appeared quite docile and not very concerned with my presence. A few days later (19 July) the site was checked again. One Solitary Sandpiper was all that could be found. I suspect that it is probably the same individual previously recorded. Since then I have seen a (this?) Solitary Sandpiper on numerous occasions well up into mid-August feeding around two of the three farm ponds.

Coinciding with this unusual bird activity has been an extremely large concentration of Purple Martins *(Progne subis)* in Quicksand. Quicksand is approximately 5 km south of Jackson and 25 km west of the study area mentioned above and also in Breathitt County. From 15 July to 1 August about 1500+ Purple Martins have lined telephone cables in that community. This is quite an extraordinarily high number since Martins are not considered abundant even during migration in this county. Field notes from the past three years show that Purple Martins are gone by the 9th or 10th of August, but yet this year over 100 have remained in Quicksand past the 15th of August.

A look at recent literature on state birds proved quite worthwhile *(Mengel, The Birds of Kentucky, 1965* and *Monroe, Ky. Warbler, 45:47-56, 1969)*. Solitary Sandpipers, Greater Yellowlegs, any species of "peep," and Black Ducks are considered rare to very rare in July. Most likely they came from elsewhere in the state or perhaps from a more northerly state or province. Martins are abundant summer residents — but very local in Breathitt County — and tend as a rule to leave this area earlier than other passerines.

In trying to attribute some cause or reason for the arrival of these particular bird species I looked at weather conditions in the northern part of the country and Canada. According to weather reports masses of very cool air moved southward from Canada on or about the 6th or 7th of July. Temperatures recorded for the 9th to the 15th of July during this study are rather cooler than the rest of June, July and early August. Therefore, it would be reasonable to assume that severe weather factors north of Kentucky began sending migrants through earlier than usual. The same could be said of the Purple Martins; however, they appeared one week later than the other species, and they arrived during a rainy and foggy period of three or four days. This inclement weather probably kept them stationary until the weather cleared in early August.

The data collected on reclaimed surface mines was part of a research project supported by funds from the USDA Forest Service, Northeastern Forest Experiment Station. Research Work Unit NE-1605. — PIERRE N. ALLAIRE, Department of Science and Mathematics, Lees Junior College, Jackson, Kentucky 41339.

NEWS AND VIEWS

SPRING AND FALL MEETING DATES AND SITES

The Kentucky Ornithological Society will meet at Mammoth Cave National Park, April 30, May 1 and 2, 1976 for its spring meeting. The fall meeting will be held at Carter Caves State Park on October 1, 2, and 3, 1976.

MID-WINTER BIRD COUNT

Forms for the Mid-winter Bird Count will be mailed to participants by the editor. If you desire to conduct or participate in a count, you are urged to do so. For additional information and forms, contact the editor.

ORNITHOLOGY FIELD COURSE

A field course in Ornithology will again be offered during the first five-week term, June 6 to July 10, at Tech Aqua Biological Station on Center Hill Reservoir, 60 miles east of Nashville. Other courses offered during the same term include Local Flora, Freshwater Invertebrates, Freshwater Algae, and Mycology. For further information, contact the editor or Dr. Robert Martin, Dept. of Biology, Tennessee Tech, Cookeville, Tenn. 38501.