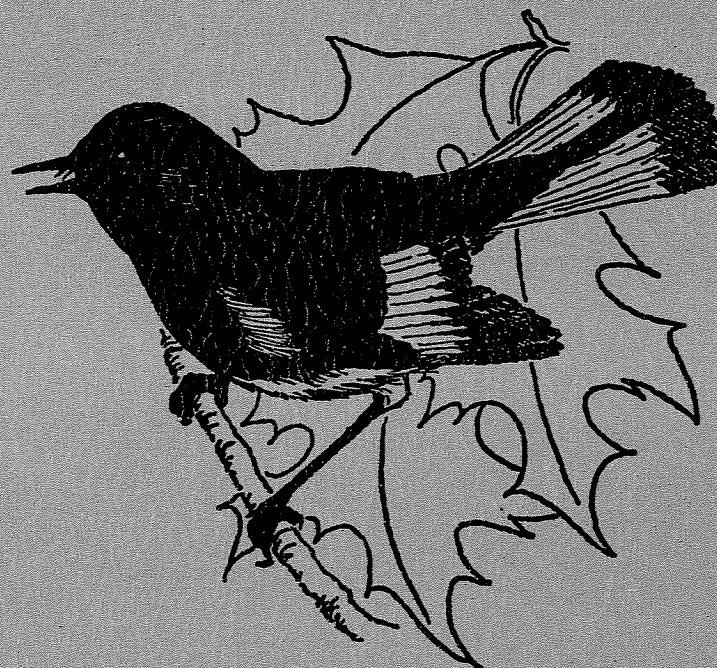


The REDSTART

Volume 32—Number 2

April, 1965



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THE REDSTART is published quarterly in January, April, July and October by Harless Printing Company, St. Albans, West Virginia. The official organ of the Brooks Bird Club, it is mailed to all members in good standing. Non-member subscription price is \$2.50. Individual copies cost \$0.50 except the April issue which is \$1.00. Changes of address and inquiries concerning back issues should be mailed to club headquarters, 707 Warwood Avenue, Wheeling, West Virginia. All articles for publication and books for review should be mailed to the Editor.

AREA SURVEY*

George A. Hall

The 1958 Foray at Camp Thornwood, Pocahontas County, was again held in the heart of West Virginia's mountain "North" country. The area for study was rather arbitrarily fixed as those parts of Randolph, Pocahontas, and Pendleton counties, West Virginia and Highland County, Virginia, included within a circle of fifteen mile radius centered at Camp Thornwood, with a slight bulge added to cover additional parts of the Greenbrier Valley. Included then is a small portion of the Tygart Valley near Huttonsville, the Cheat-Shavers Mountain System, the upper portion of the Greenbrier Valley as far South as Cass, the Burner-Middle Mountain system as far North as Gladys, portions of the North Fork and South Branch Valleys to Circleville and Harper, respectively. The region thus blankets the headwaters of the Tygart, Cheat, Greenbrier, Jackson, Cowpasture and Potomac Rivers.

According to the usually accepted physiographic classification the region West of the Shavers Mountain-Back Allegheny Mountain Ridge is in the Allegheny Mountain Section of the Appalachian Plateau Province while East of that line it lies in the Ridge and Valley Province (Fenneman—1938). The whole region is one of very rugged topography with very little extensive level land. The altitudinal range is from 4860 feet on Spruce Knob to about 2000 feet in the North Fork and Tygart Valleys. Between the Cheat Mountains on the West and Allegheny Mountain on the East most of the land lies above 3000 feet. For ten miles Shavers Mountain runs above 4000 feet and five miles of Spruce Mountain lies above 4500 feet. Elevations in the Ridge and Valley Province to the Eastward do not average so high. This latter region is characterized by highly folded rock strata.

The dominate surface rocks in the whole region are sandstones and shales, the latter more common to the East. In the Ridge and Valley Province the heavy folding of the strata has exposed many limestone outcrops and this has produced many small disjunct habitats of particular botanical interest.

As might be expected of a mountainous region the climate is a mild one with the average June temperature in the Greenbrier Valley being 64° (Price, 1929). The mean annual rainfall at Cheat Bridge is 54 inches (Reger, 1931) and at Marlinton is 47 inches (Price, 1929). This illustrates the existence of a decided rain shadow produced by the higher mountains and further East the precipitation is even less, being only 30 inches at Upper Tract, Pendleton County (out of our region) (Tilton et al, 1927).

Originally the whole region was densely forested and even today only the valleys and some of the more exposed higher peaks have any large amount of open land. Except on some of the higher slopes the forest is all of second growth. The forest associations of the region have been described in some detail by Braun (1950) whose classification is used here. West of Allegheny Mountain the forest is of the Mixed Mesophytic Type. The Tygart Valley contains some of the more Southern and Western elements in the oak-sugar maple association. The middle slopes of the mountains are covered with a predominantly beech-maple association. The tops of the highest ridges were originally covered with a Red Spruce-Northern Hardwoods forest but this has largely been removed by timbering. Only on Shavers Mountain does a nearly virgin stand of this forest remain. Good stands of young spruce occur on Shavers Mountain and on Allegheny Mountain. Balsam Fir occurs in two isolated stands, Blister Pine Swamp in Randolph County, and Blister Swamp in Pocahontas County.

EDITOR'S NOTE

This issue, except for the Winter Season Field Notes, is the report of the investigations and observations made in Pocahontas County, West Virginia June 13 to 21, 1964 during Foray Week. Previously these Foray Reports were published separately and distributed to members who attended the particular Foray. Recent interest by others in these results has prompted the Executive Committee to make the April issue of the Redstart the annual Foray Issue.

Foray, as the BBC defines it, represents an attempted ecological survey of a given area of West Virginia each June by Club members. These areas, generally comprising circles with 15 mile radii, are chosen so that, eventually, all sections and habitats of the State will be investigated. In order to note environmental changes, certain of the more unique areas are revisited on an approximate five year rotation. Thus, the present report for the Camp Pocahontas area represents the fourth visit to this area—previous studies have been made in 1948, 1953 and 1958.

The work is conducted under the supervision of specialists in the particular field of natural history involved. While a few of the participants are professionals, most are amateurs and all work is on a volunteer basis. Thus the completeness of coverage depends on the various disciplines represented among those attending.

The higher ridges are thus characteristic of the transition between the Northern-Hardwoods forest and the true Spruce-Fir forest of Canada. Braun compares these stands with those in the Adirondack Mountains of New York. East of Allegheny and Spruce Mountains the region is of the Oak-Chestnut Forest Type with White and Chestnut Oaks predominating. In the Greenbrier Valley near Cass there is a remnant of the once extensive White Pine Forest.

There are no marsh or open water areas in the region although mountain bogs and swamps occur.

Except for grazing there is little highly developed agriculture in the region, even in the valleys. Most of the region lies within the boundaries of the Monongahela National Forest.

*This is reprinted from the 1958 Foray Report.

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BIRD BANDING

George Ballantine

The Camp Pocahontas area offers a large variety of habitats at various elevations. Mist nets were placed in various situations and while the number of birds caught was not large the number of species made the effort worth while.

Bird banding was introduced to B. B. C. members at Camp Pocahontas (then called Camp Thornwood) in June 1958 by Ralph Bell. This year Ralph recaptured a Song Sparrow banded by him at the 1958 Foray, and at approximately the same spot the bird was originally caught.

The locations chosen for nets this year included (1) crossing the creek at camp, (2) near Route 28 about three miles north of camp, (3) the garage road near camp, (4) about a mile up Burner Mountain road, (5) the 1958 Buffalo Run Study Area and (6) the Burner Mountain Study Area.

When the Singing Male Census on the Burner Mountain Study Area was completed the nets were placed on it to get a comparison of the two methods. Twenty nets were placed on the area in an attempt to cover the area as well as possible without cutting brush. The diagram herewith shows the approximate locations of the nets. Some timbering had been done throughout the area some seven or eight years before and at present the area has a medium growth of tall trees and a considerable growth of brush. An old haul road traverses the area permitting

Density of Birds on Burner Mountain Study Area

Species	By Song	Male	Female	Undetermined
Chestnut-sided Warbler	9	5	7	
Red-eyed Vireo	7	3	4	
Black-throated Blue Warbler	6	—	2	
Rufous-sided Towhee	5	3	3	1
Veery	4	8	5	3
Slate-colored Junco	3.5	3	1	*7
Ovenbird	3	4	—	1
Mourning Warbler	2.5	5	1	
Wood Thrush	1.5	1		
Hairy Woodpecker	1			
Downy Woodpecker	1			
Wood Pewee	1			
Scarlet Tanager	1	—	3	
Rose-breasted Grosbeak	1	1	2	
Indigo Bunting	1	—	—	1
Solitary Vireo5			
Canada Warbler	—	3	1	
Black-throated Green Warbler	—	2	1	
Blackburnian Warbler	—	1		
Magnolia Warbler	—	1		
Totals	48	40	30	13

Note: *Six of the seven Juncos of undetermined sex were immature birds.

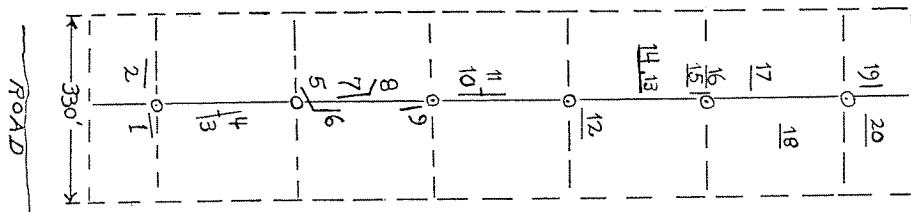
easy access.

Eighty-three birds of 16 species were banded during the 360 net-hours the nets were in operation. The table is a comparison of Pete Chandler's findings by the Singing Male method, with the results from mist netting.

A casual study of the data indicates that the netting should have been continued for a longer period.

In some instances the difference in numbers of species may be attributed to the birds being tree or ground feeders. This is not always true. The Veery nests and feeds on the ground but so does the Towhee and the results shown contradict each other. The Mourning Warbler nests and feeds in low growth and so do the Chestnut-sided Warbler and the Black-throated Blue Warblers but again the records contradict each other. It is very apparent that the netting record is incomplete.

A longer period might also help to determine the bird's feeding territory. As an example: A female vireo caught in Net #1 repeated twice in Net #1 and once in Net #4, a distance of 100 feet. This indicates a nesting bird. A male vireo caught in Net #5 repeated twice in Net #9, a distance of 170 feet; certainly he belongs there. Again a male Veery caught in Net #8 repeated in Net #19, 900 feet distant. Likewise a female Veery caught in Net #20, repeated twice in Net #7, also 900



Plan of Nets on Burner Mountain Study Area

feet distant. Two other Veerys were caught and repeated in nets closer than 100 feet. If these four Veerys had sung in the vicinity of each net in which they were caught they might have complicated the Census of singing males.

A summary of birds banded in all areas shows a total of 145 birds of 27 species banded during Foray. In addition to the 16 species netted in the Burner Mountain Study Area birds banded at the other locations mentioned above included; Catbird, Hairy Woodpecker, Louisiana Water Thrush, Flicker, Chipping Sparrow, Black-capped Chickadee, Goldfinch, Purple Finch, Wood Pewee, Cedar Waxwing and Red-winged Blackbird.

The licensed banders working on the projects were; Anne Shreve, Clark Miller, Ralph Miller, Bunny Cole, Ruth and George Ballantine. Many other campers gave valued assistance in erecting and patrolling nets.

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Charleston, W. Va.

BREEDING BIRD POPULATION STUDIES

Glen Phillips

Members of the 1964 foray worked four population study plots with results that varied widely. This was the fifth in a series of studies made on the virgin spruce and young spruce tracts on Gaudineer knob. The series began in 1947 when Aldrich and Stewart worked these two tracts. The B.B.C. continued the studies in 1948, 1953, 1958 and 1964. In 1948 a study was begun in a mature deciduous forest tract on Burner mountain and has been continued each foray. The fourth plot is a sample of second growth mixed hardwoods along the hillside at approximately the elevation of Camp Pocahontas.

Other activities in connection with population study were continued. The practice of accumulating data by banding on a study plot after the completion of the singing male census was continued on the Burner mountain tract. Some banding was done in the second growth of the Little River plot which was laid out primarily as a training site to teach the techniques of the singing male census method and allow more people to participate as was done in 1958.

A third method of population study was tried on the Burner plot making three different methods used on the same tract at essentially the same time. This third method was an experiment with the quick estimation of populations such as Dr. Hall conducts annually in the young spruce tract on Gaudineer (see The Redstart: 29:89-93).

The virgin spruce study plot showed an increase in overall population density so that the total is now much nearer to the five-study average of 310 males per 100 acres than the 187 pairs that Hall found there in 1958. The greatest increase occurred in Magnolia Warblers, Golden-crowned Kinglets and Juncoes.

Population was higher in the mature deciduous forest also, with the greatest increase occurring among Chestnut-sided and Black-throated blue Warblers. This increase is predictable by one walk through the plot. Brush and briars now hide most of the dead tree tops but the area has not returned to the climax conditions prevailing before it was selectively timbered about 1955.

Hall, when reporting the 1958 studies, questions whether the noticeable drop in population of all areas studied that year was temporary or part of a trend. Results from the above two plots would show that bird populations are returning to normal around Camp Pocahontas but for the results obtained on the young spruce plot. Here the Magnolia Warbler, and consequently, the overall population declined even further. This is quite interesting when one considers the increase of Magnolia Warblers in the virgin spruce tract, a climax forest, less than a mile away.

The second growth hardwoods plot has only been studied in 1958 and in 1964 and the results of both studies are quite similar both in overall population and in dominant species. The Veery population is up, but that seemed to be true of the entire foray area.

Results of the banding will be recorded elsewhere in this report and can be added to other information obtained this way. Eventually, we hope to accumulate enough data for a serious comparison between results of a singing male census study and mist net captures on the same plot at essentially the same time.

Accumulation of data was also the goal of the experiment with the quick census method tried out on the Burner mountain plot. Suffice it to say here that the estimate was within twenty percent of the results obtained by the singing male

method. Comparison of Dr. Hall's 1964 estimate on the young spruce tract on Gaudineer and Hurley's singing male census of the same area shows the results to vary about twenty percent also. The author hopes that further studies will be made to compare the results of this quick method with those obtained by the singing male method.

Virgin Spruce—Northern Hardwood Forest

Location: At the head of Glade Run, a tributary of Shaver's Fork of the Cheat River on the north slope of Gaudineer Knob, Shaver's Mountain in the Monongahela National Forest, Randolph County, West Virginia (about six miles north of Durbin).

Size: 15 acres (rectangular, 110-660 yards, measured).

Topography: The area is a steep mountainside crossed by a small ravine and covered with many rocks and boulders. The elevation ranges from 4000 feet at the lower side to 4100 feet at the upper edge. Since the last census a walking path has been cut through the center of the first 220 yards of the area, but no break in the crown was produced.

Plant Cover: A virgin stand of large red spruce and northern hardwoods. The area was fully described in 1948 by DeGarmo and commented upon in 1953 by DeGarmo and in 1958 by Hall.

Coverage: June 14-19. Trips were made daily from 4:30 a.m. to 7:30 p.m. EST including one trip at mid-day and one in the evening. Total man hours approximately 10.

Species	Census					
	Territorial Males		Males per 100 Acres			
	1964	1947	1948	1953	1958	1964
Magnolia Warbler	7	49	53	42	7	47
Blackburnian Warbler	7	54	66	64	40	47
Golden-crowned Kinglet	6	32	22	16	12	40
Slate-colored Junco	5	21	22	36	13	33
Black-throated Green Warbler	4	30	19	8	35	27
Brown Creeper	3	6	6	12	10	20
Black-throated Blue Warbler	3	16	26	18	0	20
Winter Wren	2	3	19	8	15	13
Canada Warbler	2	16	24	34	12	13
Swainson's Thrush	1	13	6	10	X	7
Red-eyed Vireo	1	10	2	4	3	7
Solitary Vireo	1	26	20	8	7	7
Downy Woodpecker	.5	0	0	0	0	3
Scarlet Tanager	.5	7	10	10	0	3
Cooper's Hawk	X	0	0	0	0	X
Yellow-shafted Flicker	X	0	0	X	X	X
Pileated Woodpecker	X	X	3	0	X	X
Blue Jay	X	0	3	4	0	X
Common Crow	X	0	0	0	0	X
Black-capped Chickadee	X	2	6	8	3	X
White-breasted Nuthatch	X	0	6	4	0	X

Red Breasted Nuthatch	X	6	16	10	8	X	
Veery	X	6	0	6	0	X	
Brown-headed Cowbird	X	0	0	0	0	X	
Rose-breasted Grosbeak	X	3	3	12	1	X	
Robin		3	6	18	5	vis.	
Ovenbird		3	5	6	3	0	
Purple Finch		3	11	4	0	0	
Hairy Woodpecker		3	10	4	3	0	
Cedar Waxwing		0	6	4	0	0	
Wood Thrush		3	6	4	3	0	
Wood Pewee		0	3	4	0	0	
Hermit Thrush		3	0	4	3	0	
Mourning Warbler		0	0	4	0	0	
Worm-eating Warbler		0	0	4	0	0	
Parula Warbler		3	0	X	0	0	
Tufted Titmouse		0	0	X	0	0	
Red-shouldered Hawk		X	0	X	0	0	
Red Crossbill		0	0	X	0	vis.	
Black and White Warbler		3	3	0	0	0	
Yellow-bellied Sapsucker		0	3	0	0	0	
Barred Owl		0	X	0	0	0	
Raven		0	0	X	0	0	
Total species		25	28	29	36	21	25
Total Territorial Males		43	101*	119*	93*	56*	43
Total Males per 100 Acres		287	322	381	372	187	287

X—Less Than 0.5 Territorial Males

Visitors: (1964) Robin, Cardinal, American Goldfinch, Red Crossbill and Rufous-sided Towhee.

Remarks: The Swainson's Thrush never sang on territory, but the nest was found near the center of the area. They were heard to give alarm notes three times only during the study, and these far from the nest, although people frequently walked and stood within a few feet of their nest. The Brown Creeper's nest was found and he was observed to sing only below the nest on the hillside in an oval shaped area, the nest being at the upper end of the oval. The two Canada Warblers were both observed to move and sing around the perimeter of a circular territory.

Census Takers: David Baker, Carol Hand, (compiler), Eugene Hutton, George Koch, Martin Rudy, Maxine Thacker and others.

*Size of area, 1947 and 1948—31 acres; 1953—24 acres; 1958—30 acres.

Young Spruce Forest

Location: Top of Gaudineer Knob, Shaver's Mountain, Monongahela National Forest, on the boundary between Pocahontas and Randolph counties, West Virginia. This is about five miles north of Durbin.

Size: A measured rectangular plot comprising 15 acres (110x660 yards).

Topography: A nearly flat mountain top at an elevation of about 4440 feet above sea level.

Plant Cover: The area was fully described by DeGarmo in the 1953 Foray report. The Red Spruce (*Picea rubra*) which comprises 95 per cent of the tree cover have

reached an average height of about 25 feet. Small areas of the forest floor have become opened enough to permit Laurel (*Kalmia latifolia*) to grow.

Edge: Surrounded on all sides by similar cover. The Forest Service road to the fire tower provides an opening in the dense cover. Laurel is the principal ground cover along both sides of the road.

Coverage: Daily from June 15 through June 18. Total man hours about 20. All trips were at or near daylight except two which were made in the afternoon and evening.

Census Data

Species	Males					
	1964	1947	1948	1953	1958	1964
Magnolia Warbler	9	100	127	127	73	59
Slate-colored Junco	6	53	67	53	30	40
Swainson's Thrush	3.5	40	17	44	37	23
Golden-crowned Kinglet	2	0	0	7	3	13
Northern Waterthrush	1.5	0	0	20	10	10
Winter Wren	1.5	13	13	13	3	10
Robin	1.0	13	34	24	20	7
Black-throated Green Warbler	0.5	3	X	0	0	3
Purple Finch	7	7	7	3	0	
Rufous-sided Towhee	33	37	27	0	0	
Black-capped Chickadee	3	7	13	0	0	
Hermit Thrush	3	X	10	0	0	
Veery	3	X	10	0	0	
Canada Warbler	0	3	7	0	0	
Black-throated Blue Warbler	X	23	3	0	0	
Chestnut-sided Warbler	7	3	X	0	0	
Cedar Waxwing	X	7	X	0	viz.	
Red Crossbill	0	0	X	0	vis.	
Pine Siskin	0	0	X	0	vis.	
Tufted Titmouse	0	0	X	0	0	
Blackburnian Warbler	0	3	0	0	0	
Rose-breasted Grosbeak	X	X	0	0	0	
American Goldfinch	X	X	0	0	0	
Red-breasted Nuthatch	0	X	0	0	0	
Hairy Woodpecker	0	X	0	0	0	
Olive-sided Flycatcher	0	X	0	0	0	
Scarlet Tanager	X	0	0	0	0	
Nighthawk	X	0	0	0	0	
Pileated Woodpecker	X	0	0	0	0	
Total species	8	19	21	19	8	8
Total Territorial Males	25	42	51	55	27	25
Total Males per 100 Acres	164	281	345	372	180	164

Visitors: (1964) Blue Jay, Cedar Waxwing, Red Crossbill, American Goldfinch, Chimney Swift and Pine Siskin.

Census Takers: George Hurley and Morgan Gilbert assisted by Ken Anderson,

George Koch, Treela Miller, Bill Hammerschmidt, Anne Shreve and Helen Strosnider.

Cut-Over Mature Hardwoods

Location: On top of Burner Mountain, Monongahela National Forest, Pocahontas County, West Virginia, about 5 miles northeast of Durbin.

Size: 15 acres—rectangular, 110x660 yards, measured.

Topography: A generally level, broad hogback ridge. Elevation 4000 feet.

Plant Cover: When the site was censused in 1948 and 1953 it was a mature deciduous (hardwood) forest. The principal tree species were Sugar Maple (*Acer saccharum*), Red Maple (*A. rubrum*), Red Oak (*Quercus borealis*), and Beech (*Fagus grandifolium*). It had a dense understory of shrubs and good herbaceous ground cover. Prior to the 1958 census the area, described by George Hall in the 1958 Foray report, had been selectively timbered (probably about 1954-55) and most of the good marketable trees were cut. A good stand of tall trees of poor market value and small diameter remained, with open area in the previously closed crown. The open areas contained dense stands of blackberry (*Rubus sp.*), Greenbrier (*Smilax sp.*), Wild Grape (*Vitis sp.*), young trees of former species and others of shrub size, such as Striped Maple (*Acer pennsylvanicum*), Birch sprouts (*Betula spp.*), Chestnut sprouts (*Castanea dentata*), Red Elder (*Sambucus pubens*), and several species of Dogwood (*Cornus spp.*), these with mixed herbaceous flowering plants completed the ground cover. Since the 1958 census the trees and shrubs have grown, the foliage of the mature trees have spread and open sunlit areas reduced in size.

Edge: Surrounded on all sides by similar cover.

Coverage: Daily June 14-18 at daylight, also early morning and evening trips. Total man hours about 22.

Species	Census Data				
	Territorial		Males per 100 acres		
	males	males	1964	1948	1953
Chestnut-sided Warbler	9	0	X	13	60
Red-eyed Vireo	7	60	94	27	47
Black-throated Blue Warbler	6	7	13	20	40
Rufous-sided Towhee	5	0	0	23	33
Veery	4	34	20	10	27
Slate-colored Junco	3.5	27	20	17	23
Ovenbird	3	67	94	20	20
Mourning Warbler	2.5	0	0	13	17
Wood Thrush	1.5	X	7	7	10
Hairy Woodpecker	1	7	10	0	7
Downy Woodpecker	1	0	3	0	7
Wood Pewee	1	10	13	7	7
Scarlet Tanager	1	13	20	13	7
Rose-breasted Grosbeak	1	0	0	7	7
Indigo Bunting	1	0	0	23	7
Solitary Vireo	0.5	23	17	0	3

Species	Territorial males	Males per 100 acres			
		1964	1948	1953	1958
Ruffed Grouse	X	0	X	7	X
Yellow-bellied Sapsucker	X	0	0	0	X
Black and White Warbler	X	13	7	0	X
Black-throated Green Warbler	94	101	3	vis.	
Blackburnian Warbler	0	7	0	0	
Robin	0	3	0	vis.	
White-breasted Nuthatch	7	X	0	vis.	
Wild Turkey	0	X	0	0	
Pileated Woodpecker	0	X	0	0	
Blue Jay	0	X	0	0	
Flicker	0	X	0	0	
Winter Wren	X	0	0	0	
Yellow-throated Vireo	0	0	7	0	
Yellow-billed Cuckoo	0	0	X	0	
Black-billed Cuckoo	0	0	X	0	
Total Species	19	14	22	18	19
Total Territorial Males	48	54	64	32	48
Total Males per 100 Acres	322	362	429	213	322

Visitors (1964) Crow, White-breasted Nuthatch, Robin, Cedar Waxwing, Black-throated Green Warbler and Canada Warbler.

Remarks: Nest found: Hairy Woodpecker (1), Red-eyed Vireo (1), Adults feeding or with young: Ruffed Grouse (1), Downy Woodpecker (1), Chestnut-sided Warbler (3), Mourning Warbler (1), Junco (1). A marked increase of Chestnut-sided Warblers, Red-eyed Vireos and Veerys over 1958 census was noted. However, a high population of Chestnut-sided Warblers and Veerys was recorded as general throughout the area covered in the Foray.

Census Takers: Hester C. Harrison, Nevada Laitsch, Virginia Olsen, Seal Brooks, Dr. Eugene Hutton, E. R. Chandler (compiler), and members of the Brooks Bird Club.

Second Growth Mixed Hardwoods

Location: Along the forest service road adjacent to Little river, Monongahela National Forest, Pocahontas County, West Virginia (about two miles from State Route 28 and about seven miles East of Durbin).

Size: 15 acres (rectangular, 110x660 yards, measured).

Topography: The Long axis is nearly level, the short axis is along the mountain side at about a 15 degree angle. Elevation about 3000 ft.

Plant Cover: Miller described the plot in 1958 (Redstart, 26, 1-10) as: "A young forest of mixed hardwoods, about 50% of the trees 4 to 8 inches DBH, about 40% from 8-12 inches DBH and about 10% from 12 to 20 inches DBH. Approximately 20% White Oak (*Quercus alba*) and Black Oak (*Q. velutina*), 20% Sugar Maple (*Acer saccharum*), 2% Canada Hemlock (*Tsuga canadensis*), and about 58% equally divided between White Ash (*Fraxinus americana*), Fraser Magnolia (*Magnolia fraseri*), Cucumber Magnolia (*M. acuminata*), Black Locust (*Robinia pseudo-acacia*), Yellow Birch (*Betula lutea*), Black Birch (*B. lenta*), and Sour Gum (*Nyssa sylvatica*).

Species	Census		
	Territorial	Males	Males per 100 acres
Species	1964	1958	1964
Red-eyed Vireo	5	33	33
Veery	3.5	13	23
Indigo Bunting	3	27	20
Chestnut-sided Warbler	3	0	20
Black and white Warbler	2.5	23	17
Ovenbird	2	33	13
Wood Thrush	1.5	0	10
Catbird	1	0	7
Black-throated green Warbler	1	0	7
Rufous-sided Towhee	1	vis.	7
Canada Warbler	0.5	0	3
Scarlet Tanager	0.5	0	3
Slate-colored Junco	X	0	X
Black-capped Chickadee	X	0	X
Barred Owl	X	0	X
Blue Jay	X	vis.	X
American Crow	X	0	X
Black-throated blue Warbler	13	0	
Rose-breasted Grosbeak	0	13	0
Wood Pewee		3	0
Total Species	17	8	17
Total Territorial Males	24.5	24	24.5
Total Males per 100 Acres	163.3	160	163

The understory is medium to dense and consisted of young individuals of the canopy species as well as Witch Hazel (*Hamamelis virginiana*), Sumac (*Rhus typhina*), American Hornbeam (*Carpinus caroliniana*), Alternate-leaved dogwood (*Cornus alternifolia*), and Chestnut sprouts (*Castanea dentata*). The ground cover was well developed, the principal species being False Solomon's Seal (*Smilacina racemosa*), Meadow Rue (*Thalictrum polygamum*), Black Cohosh (*Cimicifuga racemosa*), Common Milkweed (*Asclepias syriaca*), Blackberry (*Rubus sp.*), Jack-in-the-pulpit (*Arisaema triphyllum*), Great Indian Plantain (*Cacalia muhlenbergii*), New York Fern (*Dryopteris noveboracensis*), Interrupted Fern (*Osmunda claytoniana*) and Christmas Fern (*Polystichum acrostichoides*)."

Edge: Bounded on all sides by a similar cover. The road along the center line is now opened to about 20 ft. in width by brush control efforts of road maintenance crews.

Coverage: Daily from June 16 to 19th. Twelve trips between 5:08 A.M. and 8:05 P.M. E.S.T. concentrated at early morning and late evening, with two trips in mid-morning and two in mid-afternoon. Approximately six and one half party hours.

Visitors: (1964) Magnolia Warbler, Goldfinch, Golden-winged Warbler and Yellow-throat.

Census Takers: Rita Cohen, Richard Budris, Seal Brooks, Jack Linehan, Treela Miller, Francis Ault, Florence Brannum, Mary Frank, David Frank, Fred and Pat Temple, Sharla Gladwell, George Koch and Glen Phillips (compiler).

R. D. #2
Triadelphia, W. Va.

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FORAY BIRD LIST

Ralph K. Bell

The twenty-fifth annual Foray of the Brooks Bird Club was held from June 13 to 21 at Camp Pocahontas (formerly Camp Thornwood) near Bartow, Pocahontas County, West Virginia. It was a wonderful Foray, and most of the campers worked hard to compile the very impressive list of 123 species (nine more than in 1958 at the same location). Last year (1963) 117 species were recorded in an area that practically borders the Camp Pocahontas 15-mile radius area to the northeast. It is approximately 23 air miles between the two Foray camp sites.

In general the elevation (above sea level) of this Foray was higher than the area included in the 1963 Foray held at the Pendleton County 4-H Camp. This year the altitudinal range varied from about 1800 feet in the Tygart and North Fork valleys to 4860 feet on Spruce Knob. Last year the elevation varied from 1155 feet along the South Branch of the Potomac River near the Grant County line to 4860 feet on Spruce Knob. One big difference in vegetation (aside from the red spruce-northern hardwood forest areas) was that there were more bushy areas compared to the clean pastures in Pendleton County (caused by a high sheep population).

After checking the 1963 Foray report, this difference in altitude showed up very markedly in the species seen (or not seen).

Recorded in 1963 but not in 1964	Recorded in 1964 but not in 1963
Wood Duck	Cooper's Hawk
Rough-legged Hawk	Yellow-bellied Sapsucker
Carolina Chickadee	Red-breasted Nuthatch
Carolina Wren	Brown Creeper
Cerulean Warbler	Short-billed Marsh Wren
Pine Warbler	Northern Water-thrush
Kentucky Warbler	Mourning Warbler
Hooded Warbler	Bobolink
Dickcissel	Pine Siskin
Lark Sparrow	Red Crossbill
	Savannah Sparrow
	Fox Sparrow
	Swamp Sparrow

The following table lists some birds that were recorded in both areas, but also shows how altitude can affect abundance. A different year could mean some difference, but not likely such an abrupt difference.

	Pendleton County 1963	Pocahontas County 1964
Bob-white	common	rare
Whip-poor-will	common	rare
Bewick's Wren	very common	occasional
Swainson's Thrush	rare	fairly common
Veery	occasional	very common
Magnolia Warbler	rare	common
Louisiana Water-thrush	very common	occasional
Canada Warbler	uncommon	very common

During the 1964 Foray eleven species were recorded that were not seen in 1958. Six of these were new species for the area (marked with an asterisk). Two species recorded in 1958 were not on the 1964 list, and three species found in 1953 were not seen in either 1958 or 1964.

Seen in 1964, but not in 1958

Screech Owl
Red-bellied Woodpecker
*Tree Swallow
Bank Swallow
*Short-billed Marsh Wren
*Blue-gray Gnatcatcher
Loggerhead Shrike
*White-eyed Vireo
*Prairie Warbler
Orchard Oriole
*Fox Sparrow

Recorded in 1958, but not in 1964
Great Horned Owl
Kentucky Warbler
Recorded in 1953, but not in 1958 or 1964
Wood Duck
Carolina Wren
Blue Grosbeak

The following lists are those birds that showed a probable increase (or decrease) since the 1958 Foray. Those marked with an asterisk showed a definite change.

Probable increase

Pileated Woodpecker
Kingbird
*Tree Swallow
*Veery
*Eastern Bluebird
Blue-gray Gnatcatcher
Loggerhead Shrike
Parula Warbler
Prairie Warbler
Mourning Warbler
Hooded Warbler
*Common Grackle
Scarlet Tanager
*Red Crossbill

Probable decrease

*Ruffed Grouse
*Bob-white
*Wild Turkey
*Yellow-billed Cuckoo
*Black-billed Cuckoo
*Chimney Swift
*Least Flycatcher
Blue Jay
Black-capped Chickadee
*Brown Thrasher
*Wood Thrush
Rose-breasted Grosbeak

- Green Heron (*Butorides virescens*)—Not common. Reported by S. Brooks, C. Hand, M. Kiff, G. Hurley, G. Koch, B. and A. Greenlee, G. Phillips in four different locations—mostly around Greenbank. Considered uncommon in '53 and '58.
- Turkey Vulture (*Cathartes aura*)—Common. Observed by most campers. Eight were seen over camp at one time on afternoon of June 19 by Pat Murphy. Considered uncommon in '53, but common in '58.
- Black Vulture (*Coragyps atratus*)—Rare. One was seen near Greenbank by D. McBeth on June 18. Recorded June 20 by B. and A. Greenlee on Top of Allegheny. Also considered rare in '53 and '58.
- Sharp-shinned Hawk (*Accipiter striatus velox*)—Rare. One noted by C. Hand flying over highway near camp on June 13. Also seen by G. Hurley on Burner Mountain. About the same status in '53 and '58.
- Cooper's Hawk (*Accipiter cooperii*)—Occasional. N. Laitsch reported one along the road from Durbin to Burner Mt. C. Hand reported one carrying food near Greenbank, one on the virgin spruce study area, and one over Murphy's farm (Rt. 28 near Bartow). Considered rare in '53 and '58.
- Red-tailed Hawk (*Buteo jamaicensis*)—Occasional. G. Hurley saw two June 13 along U.S. Rt. 250 west of Durbin. Several others reported. Also reported occasional in '53 and '58.
- Red-shouldered Hawk (*Buteo lineatus*)—Occasional. G. Phillips reported one on Buffalo Run. Also reported in other areas by C. Hand, G. Phillips and G. Hurley. Not much change from '53 and '58.
- Broad-winged Hawk (*Buteo platypterus*)—Fairly common. Reported by several observers, and due to its quiet habits is probably even more common than these reports indicate. No definite change from '53 and '58.
- Sparrow Hawk (*Falco sparverius*)—Not rare. A. Shreve saw a female at the top of the Cass Railroad on June 18. M. Rudy found a nest in a woodpecker hole in the Methodist Church not far north of Cass on the back road. N. Laitsch also saw one in the same area. K. Koch reported a pair feeding young in nest on the Bell farm 2 miles from U.S. 219 on Becky Creek road. The Greenlees reported them on the road to Monterey and G. Hurley saw two in the Greenbank area. Only one record in '53 and probably more common than in '58.
- Ruffed Grouse (*Bonasa umbellus*)—Not common. F. Temple saw one about a mile west of Arbovale on county road No. 2 (toward Greenbrier ford). One was seen by C. Doerr, Paul, Barry and R. Murphy on North Fork road. C. Hand reported one on road in front of camp on June 13. R. Bell found one killed on road near the Wanless Church. G. Hurley and G. Phillips considered them scarce compared to '53 and '58.
- Bob-white (*Colinus virginianus*)—Rare. Only one report. Ruth and Harold Burtt reported seeing four cross the road between Spruce Knob Lake and Rt. 28 on June 16. Evidently a definite drop in numbers from '53 and '58.
- Wild Turkey (*Meleagris gallopavo*)—Rare. One reported by Dr. Hutton, N. Laitsch, V. Olsen, H. Harrison and P. Chandler. R. Green found an egg shell (believed to be of this species) near the top of the Cass Railroad. The Turkey was considered common in '53 and '58.
- Kildeer (*Charadrius vociferus*)—Not common but there were several reports. P. Murphy saw one near Judy Gap. C. Hand reported one near Murphy's farm on Route 28. Three were seen near Boyer By C. Katholi, N. Gluck, R. Bell and

- A. Shreve. M. Talbott reported one at Becky's Creek and B. and A. Greenlee saw 12 over the line in Virginia on Route 643. Probably not too much change from '53 and '58.
14. American Woodcock (*Philohela minor*)—One reported by G. Hurley at Blister Pine swamp on June 19. Not reported in '53, but 7 noted in '58.
 15. Spotted Sandpiper (*Actitis macularia*)—Rare. C. Hand reported seeing one on Greenbrier River near Greenbank on June 18, and it acted as though its nest was near. Not reported in '53, but two reports in '58.
 16. Mourning Dove (*Zenaidura macroura*) Rare. Reported by W. Murray and W. Van Eck who heard one near Wanless. Probably not much change from '53 and '58.
 17. Yellow-billed Cuckoo (*Coccyzus americanus*)—Considered not common by most observers. D. Shearer reported one on Buffalo Creek. One reported on Top of Allegheny above Bartow by B. and A. Greenlee. C. Hand reported one on hill above Murphy's farm on Rt. 28. G. Phillips saw two near Greenbank and A. Shreve reported one from the same area. Reported as rare in '53, but common in '58 when the tent caterpillars were plentiful.
 18. Black-billed Cuckoo (*Coccyzus erythrophthalmus*)—Rare. G. Phillips saw one near Hosterman. Also very rare in '53, but very common in '58.
 19. Screech Owl (*Otus asio*)—F. Bartley reported one calling one morning in the woods across the road from camp. Two reports in '53 and none in '58. This owl is probably more common than the records indicate as it is often silent at this time of year.
 20. Barred Owl (*Strix varia*)—Fairly common. Heard by many at camp fire one evening. Also reported by C. Hand on Gaudineer at 5 a.m. on June 18. Also on June 18, two were heard from the Buffalo Run study area by F. Ault, F. Branum and G. Phillips. More reports than in '53 and '58.
 21. Whip-poor-will (*Caprimulgus vociferus*) Rare. S. Brooks and P. Chandler heard three singing on June 14 along road from Frank to Burner Mt. Listed as uncommon in '53 and rare in '58.
 22. Common Nighthawk (*Chordeiles minor*)—Rare. One seen flying over camp by many campers on June 15. It was considered rare in '53 and '58.
 23. Chimney Swift (*Chaetura palagica*)—Occasional. Reported by C. Hand and G. Phillips over Gaudineer on different days. Also seen over road to Middle Mt. by P. and F. Temple and P. Murphy. A big change here as it was considered very common in '53 (even a nest found). Also rated common in '58.
 24. Ruby-throated Hummingbird (*Archilochus colubris*)—Occasional. G. Phillips saw one in four different areas. D. Shearer saw one on Buffalo Creek. Pat Murphy saw a male the first day and A. Shreve reported four seen during the week. Similar reports in '53 and '58.
 25. Belted Kingfisher (*Megaceryle alcyon*)—Occasional. Van Eck and Hutton reported one along the Durbin-Wildell road. D. & K. Anderson found a nest along Shavers Fork of Cheat River between the old and new bridges. C. Hand reported one over dam on Buffalo road; this one was also reported by F. Temple. G. Phillips saw one in valley east of Greenbank on June 19. This species was considered moderately common in '53, but there were only two records in '58.
 26. Yellow-shafted Flicker (*Colaptes auratus*)—Common. All reporters listed this species as common and well distributed. Not much change from '53 and '58.
 27. Pileated Woodpecker (*Hylatomus pileatus*)—Fairly common. S. Brooks reported two on hillside about one mile from Cass on the back mountain road to Durbin. On June 20, B. and A. Greenlee observed a pair for about an hour along Rt. 644 in Virginia, where a nest was found and the female was incubating. C. Hand had one on the virgin spruce study area. N. Laitsch commented on seeing them in several locations. There were more reports than in '53 and '58.
 28. Red-bellied Woodpecker (*Centurus Carolinus*)—Rare. Only one report. Hermann Postlethwaite observed one scolding behind school house at Wildell on June 17. This woodpecker was not recorded in '53 or '58.
 29. Red-headed Woodpecker (*Melanerpes erythrocephalus*)—Occasional. Three reports. On June 17, Dr. Burns, M. Thacker and J. Worthley saw one fly across Route 26. The Temples and J. Worthley saw an adult carrying food across road between Wanless and Hosterman on June 19. On the same day S. Brooks saw an adult feeding on serviceberry about two miles east of Greenbank. This woodpecker was probably more numerous in '53, but reports indicate its status '58 and '64 as the same.
 30. Yellow-bellied Sapsucker (*Sphyrapicus varius*)—Rare. N. Laitsch reported three at the far end of the Burner Mt. study area, and A. Shreve reported evidence (typical Sapsucker drillings on trees) in Blister Pine swamp. Also considered rare in '53 and '58.
 31. Hairy Woodpecker (*Dendrocopos villosus*)—Occasional. Van Eck, B and A. Greenlee saw adults feeding in nest at the Burner study area on June 14. P. Murphy reported one on the back mountain road to Cass on June 20. One reported by A. Shreve and C. Hand at the foot of Gaudineer. In '53 it was rated as being rather common, but just occasional in '58.
 32. Downy Woodpecker (*Dendrocopos pubescens*)—Not common. P. Murphy and D. Shearer reported seeing only one all week. G. Phillips saw one along Rt. 28 north of camp and N. Laitsch saw one at the end of the Cass Scenic Railroad on June 18. C. Hand reported seeing "several". Uncommon in '53 and '58.
 33. Eastern Kingbird (*Tyrannus tyrannus*)—Fairly common. Most observers listed them as fairly common in farm areas (especially orchards). Reports indicate numbers may be up slightly from '53 and '58.
 34. Crested Flycatcher (*Myiarchus crinitus*)—Not common. F. Temple reported a pair 7.5 miles north of Cass along county road No. 1 on June 19. Van Eck reported one near Wanless and G. Phillips saw one between beaver dams on Buffalo Run. Probably not much change from '53 and '58.
 35. Eastern Phoebe. (*Sayornis phoebe*)—Common. Listed as common by all observers. Not much change from '53 and '58.
 36. Acadian Flycatcher (*Empidonax virescens*)—Rare. C. Hand reported one at old abandoned beaver dams on Middle Mt. road on June 15. P. Murphy reports two singing near ranger cabins at Middle Mt. on June 17. Also rare in '53 and '58.
 37. Traill's Flycatcher (*Empidonax traillii*)—Rare. G. Phillips, P. Chandler and J. Linehan heard one between beaver dams on Buffalo Run. No change from '53 and '58.
 38. Least Flycatcher (*Empidonax minimus*)—Occasional to common. N. Laitsch saw one along road from Durbin to Burner Mt. on June 17. G. Phillips saw one at the Pocahontas Motel. A nest was found on the Isaac Moore farm (on the back road to Cass) by R. Bell and L. Wilson. A nest was also found by M. Thacker. Geo. Hurley considered them common along Rt. 250 between Durbin and the top of Cheat, especially at the motel area at the top. A sharp drop in numbers from both '53 and '58 when it was considered very common.

39. Eastern Wood Pewee (*Contopus virens*)—Common. Considered not common in '53, but common in '58.
40. Horned Lark (*Eremophila alpestris*)—Occasional. A. Shreve saw one on lawn at Greenbank on June 18. C. Miller saw two at the Stark School on June 20, and on the same day B. and A. Greenlee saw one on top of Allegheny above Bartow. About the same number of reports in '53 and '58.
41. Tree Swallow (*Iridoprocne bicolor*)—One of the surprises of the Foray. M. Talbott reported a pair nesting along road past camp (these were seen by many campers). D. Shearer saw a pair feeding young at a beaver swamp along railroad on the back road between Durbin and Middle Mt. F. Branum also reported adults feeding young about 35 feet up in a dead tree at an abandoned beaver pond not too far from camp. This species was not reported in '53 and '58.
42. Bank Swallow (*Riparia riparia*)—Rare. C. Miller and M. Thacker saw two at Cheat Bridge near Cromer on June 14. No record for '53 or '58.
43. Rough-winged Swallow (*Stelgidopteryx ruficollis*)—Not rare. Adults were observed feeding young in pipe under bridge near Bartow (same place as observed in 1958). This species was also noted flying under bridges that span the Greenbrier River. Probably not too much change in numbers from former Forays.
44. Barn Swallow (*Hirundo rustica*)—Very common. Abundant in all open farm-lands in the valleys of the region. No change from '53 and '58.
45. Cliff Swallow (*Petrochelidon pyrrhonota*)—Occasional. N. Laitsch reported seeing this swallow while driving along the back mountain road to Cass. C. Hand saw them over Greenbrier Creek near Greenbank, and G. Phillips noted them east of Greenbank. No change from former Forays.
46. Purple Martin (*Progne subis*)—Very rare. Only one report. A large martin box was noted along the road not far north of Cass, but no martins were present. Two martins were reported in '53 and a colony was found in '58.
47. Blue Jay (*Cyanocitta cristata*)—Not common. Van Eck and Hutton reported several along the Durbin-Wildell road. G. Phillips heard a few—particularly on Gaudineer. Several (together) were heard along road to camp (Route 28). Evidently a decrease in numbers since the last two Forays when it was considered common.
48. Common Raven (*Corvus corax*)—Occasional. S. Brooks and J. Linehan saw two over Spruce Knob near the second lookout on road down from the top on June 15. Several were seen (and heard) at the Greenbank dump by numerous observers on June 18. It was considered moderately common in '53, and occasional in '58.
49. Common Crow (*Corvus brachyrhynchos*)—Fairly common, but probably not as common as it was at the last two Forays.
50. Black-capped Chickadee (*Parus atricapillus*)—Not common. There seems to have been a general decline of this species since the 1953 Foray in this area.
51. Tufted Titmouse (*Parus bicolor*)—Rare. N. Laitsch saw a pair along the road from Durbin to Burner Mt. A Shreve recorded one near camp on June 17. S. Brooks heard two calling along the back road to Cass (eight miles north of Cass). They were also considered uncommon in '53 and '58.
52. White-breasted Nuthatch (*Sitta carolinensis*)—Occasional. P. Murphy heard three at different places on a hike at Middle Mt. on June 17. C. Hand heard one on the virgin spruce study area, and several campers saw the adults and young at the end of the Cass Railroad. Rated about the same on former Forays. Their abundance is hard to classify at this time of year when they are usually quiet. This could also apply to the two preceding species.
53. Red-breasted Nuthatch (*Sitta canadensis*)—Not common. G. Phillips heard one at Middle Mt. cabins. C. Hand had one on the virgin spruce study area. They were considered rare in '58, but very common in the spruce forest in '53.
54. Brown Creeper (*Certhia familiaris*)—Not rare. P. Murphy saw one above the cabins on Middle Mt. C. Hand considered them common on Gaudineer. M. Thacker found an occupied nest about 38 ft. above ground in the virgin spruce study area. No apparent change from former Forays.
55. House Wren (*Troglodytes aedon*)—Considered common by most observers in suitable habitat. Probably not much change from former Forays.
56. Winter Wren (*Troglodytes troglodytes*)—Not rare in high elevations. Many campers heard their song on Gaudineer. A. Shreve listed this species at Blister Pine swamp on June 20. One was heard at the top of the scenic railroad by Brooks, Linehan, Gillman, Dill and Phillips. Possibly a slight downturn in numbers from 1953.
57. Bewick's Wren (*Thryomanes bewickii*)—Occasional. Many campers saw the young and heard the very active adult at the top of the scenic railroad. C. Hand reported one at the foot of Gaudineer near the highway on June 15. V. Gilman, L. Artz, P. Murphy, F. Temple and G. Phillips reported one along the back mountain road from Cass. Only one was recorded in '58, but there were three records in '53.
58. Short-billed Marsh Wren (*Cistothorus stellaris*)—Rare. Dr. Hutton, P. Chandler, Hester Harrison and G. Phillips saw one in the Blister Pine swamp on June 19. This is a new species record for this area.
59. Mockingbird (*Mimus polyglottos*)—Occasional. N. Laitsch and P. Chandler each listed two pairs seen. G. Koch saw one bird on Becky Creek road about three miles from U.S. Rt. 219 on June 16. On June 20, A. Shreve found a dead young mockingbird on the back mountain road from Cass. There were three birds seen in '58, but none recorded in '53.
60. Catbird (*Dumetella carolinensis*)—Common in lowland bushy areas. Numbers probably down from '53, but about the same as '58.
61. Brown Thrasher (*Toxostoma rufum*)—This species might also be considered common in lowland bushy areas, but evidently a big reduction from former Forays.
62. Robin (*Turdus migratorius*)—Considered very common over entire area. Same status in both '53 and '58.
63. Wood Thrush (*Hylocichla mustelina*)—Not common. Some observers commented that it was not nearly as common as the Veery. Down in numbers from '53 and '58.
64. Hermit Thrush (*Hylocichla guttata*)—Occasional. A few on Gaudineer reported by C. Hand. P. Gregg, P. Murphy and the Temples heard several singing in the woods on Middle Mountain. Probably about the same numbers as in '58, but less than in '53.
65. Swainson's Thrush (*Hylocichla ustulata*)—Fairly common in suitable habitat. G. Hurley reported this species in good numbers on Gaudineer and several on Burner Mt. A. Shreve heard a single singing in Blister Pine swamp. Less common than '53, but probably about the same as in '58.
66. Veery (*Hylocichla fuscescens*)—Very common. One of the big (and pleasant)

- surprises of the Foray. They seemed to be singing in the woods everywhere, even around camp. More common than in '53 and '58.
67. Eastern Bluebird (*Sialia sialis*)—Fairly common in farm areas. An increase over the other two Forays.
 68. Blue-gray Gnatcatcher (*Polioptila caerulea caerulea*)—Three reports. F. Temple saw one 2.5 miles south of Cass on county road No. 1 near the town of Stony Bottom on June 18. Also on June 18 a nesting female was observed about 3 miles north of Cass along the back mountain road. On June 20, B. and A. Greenlee saw one in Virginia along Rt. 644 from Cherry Grove. There are no past records.
 69. Golden-crowned Kinglet (*Regulus satrapa*)—Not rare, in fact, E. R. Chandler considered them common in suitable habitat. N. Laitsch and C. Hand reported five pairs in the virgin spruce study area. G. Phillips also considered them common at Middle Mt. cabins, Blister Pine swamp and near Spruce Lake. No apparent change from '58, but more common than '53.
 70. Cedar Waxwing (*Bombycilla cedrorum*)—Very common. M. Thacker reported a nest in an abandoned orchard along the back mountain road from Cass and commented that the nest was basically made of wool. Also considered very common in '53 and '58.
 71. Loggerhead Shrike (*Lanius ludovicianus*)—Occasional. N. Laitsch reported one along the back mountain road between Durbin and Cass. Two adults and young were seen regularly by many at the junction of Rts. 28 and 250. Not seen in previous years.
 72. Starling (*Sturnus vulgaris*)—Common in farm and town areas. Same status as at the other Forays.
 73. White-eyed Vireo (*Vireo griseus*)—Rare. One was seen in valley near back road to Burner Mt. from Rt. 250 by V. Olsen, H. Harrison, N. Laitsch and Dr. Hutton on June 17. A new Foray record for the area.
 74. Yellow-throated Vireo (*Vireo flavifrons*)—Rare. One was recorded by Dr. Burns. Considered rare in '58 and uncommon in '53.
 75. Solitary Vireo (*Vireo solitarius*)—Occasional to common. A Shreve reported young being fed out of nest at Blister Pine swamp on June 20. C. Hand had one on the Gaudineer study area. Recorded at top of mountain on the Middle Mt. road by H. Harrison, P. Chandler, S. Brooks, J. Linehan, and G. Phillips. Probably not too much change from former Forays.
 76. Red-eyed Vireo (*Vireo olivaceus*)—Very common. No change from '53 and '58.
 77. Warbling Vireo (*Vireo gilvus*)—Rare. Only one report by G. Hurley at Cass. No change from former Forays.
 78. Black-and-white Warbler (*Mniotilla varia*)—Common at lower elevations. No change from '53 and '58.
 79. Worm-eating Warbler. (*Helmitheros vermivorus*)—Rare. V. Olsen saw a male carrying food on June 16 along road to Hosterman. C. Conrad saw one near camp along road leading to Burner Mountain. Probably not much change from '53 and '58.
 80. Golden-winged Warbler (*Vermivora chrysoptera*)—Not very common, but found in several areas. T. and C. Miller saw a pair carrying food at the Locust Springs picnic area on June 19. A. Shreve reported a nest along the road near our campfire site. The Murphys, Temples and P. Gregg saw adults feeding young at the Greenbank dump. No apparent change from previous Forays.
 81. Parula Warbler (*Parula americana*)—Fairly common in areas where hemlocks

- were found. N. Laitsch reported hearing them in five different locations. Reports indicate a slight increase from 1958.
82. Yellow Warbler (*Dendroica petechia*)—Common at lower elevations. Probably not much change from former Forays.
 83. Magnolia Warbler (*Dendroica magnolia*)—Common at all elevations. No change indicated.
 84. Black-throated Blue Warbler (*Dendroica caeruleascens*)—Common at all elevations, especially on Burner Mt. C. Hand considered it common on Gaudineer also. No particular change in abundance at lower elevations from '53 and '58.
 85. Black-throated Green Warbler (*Dendroica virens*)—Common to very common in the mixed conifer-hardwoods. G. Phillips considered it very common and well distributed. No change from former Forays.
 86. Chestnut-sided Warbler (*Dendroica pennsylvanica*)—Common in bushy areas and edges. Less common than '48 and '53, due to disappearing habitat.
 88. Blackburnian Warbler (*Dendroica fusca*)—Common and well distributed. Not much change from '58, but probably down slightly from '48 and '53.
 89. Prairie Warbler (*Dendroica discolor*)—Not common. One reported by Pete Chandler and W. Van Eck near the Wanless Church. W. Athy and D. Conrad had one definite record on June 16 about one mile north of Cass. Also reported by M. Thacker and N. Laitsch, who heard them in at least four locations. No record in '53 or '58.
 90. Northern Water-thrush (*Seiurus noveboracensis*)—Not rare. G. Hurley reported several in young spruce area on Gaudineer. Many campers saw several adults carrying food in Blister Pine swamp. No evident change from '53 and '58.
 91. Louisiana Water-thrush (*Seiurus motacilla*)—Occasional. A. Shreve banded an immature at the bridge below camp. G. Phillips reported one about three miles north of camp along Route 28. Many campers heard (or saw) at least one along Five Mile Run at camp where it was also recorded in '53 and '58. No change in numbers.
 92. Mourning Warbler (*Oporornis philadelphicus*)—Could be considered common in proper habitat. Many near camp and on road to Burner Mt. where A. Shreve found a nest not far from camp. C. Hand reported them common on Gaudineer. A cycle seems evident here, as they were considered up in '53 also, but down in '48 and '58.
 93. Yellow-throat (*Geothlypis trichas*)—Considered fairly common at lower elevations, but A. Shreve reported one near Spruce Knob at 4200 feet elevation. Probably not too much change from former Forays where habitat is suitable.
 94. Yellow-breasted Chat (*Icteria virens*)—Reported occasional by most observers, but G. Hurley considered them common in suitable habitat. D. Shearer reported two along Buffalo Creek road. Similar numbers in '53 and '58.
 95. Hooded Warbler (*Wilsonia citrina*)—Occasional. A singing male was seen at the Greenbank dump by G. Phillips, S. Brooks and R. and P. Murphy. Also heard by M. Thacker, N. Gluck and P. Murphy at the cemetery above Cass. G. Hurley reported several seen and heard in wooded areas south of Durbin. More reports than in '53 and '58.
 96. Canada Warbler (*Wilsonia canadensis*)—Very common. Appropriately named the Foray bird. Nests were found by D. Frank (2), L. Wilson, W. Worthley and V. Olsen. There were also five records of 'young-out-of-nest'. This warbler

- was also considered common to abundant in '53 and '58.
97. American Redstart (*Setophaga ruticilla*)—Not common. M. Kiff reports a pair of adults along the gravelled road to Thornwood from camp on June 20. N. Laitsch saw one along road to Gaudineer. D. Shearer also recorded one. G. Phillips and G. Hurley classed them as not common. They were considered occasional to rare in '53 and '58.
 98. House Sparrow (*Passer domesticus*)—Common in lowland farms and towns. No apparent change.
 99. Bobolink (*Dolichonyx oryzivorus*)—Rare. Only recorded in the Sinks of Gandy area. Considered rare in '53 and '58.
 100. E. Meadowlark (*Sturnella magna*)—Common in the meadows and pasture fields of the area. Probably not too much change.
 101. Red-winged Blackbird (*Agelaius phoeniceus*)—Considered very common in open country by most observers. G. Hurley considered them up from previous years, but they were called common to abundant in '53 and '58.
 102. Orchard Oriole (*Icterus spurius*)—Only one record. G. Koch found a nest in the top of a pear tree on the Isaac Moore farm (on the back road to Cass). This species may not be as rare as indicated because it is a very early nester and young are often out of the nest by Foray time. Found in two areas in '53, but this species was not recorded in '58.
 103. Baltimore Oriole (*Icterus galbula*)—Not common. D. Shearer noted one at the forest ranger's home in Bartow. G. Phillips saw one on the Presbyterian Church grounds at Greenbank. R. Bell found a nest near the Isaac Moore farm along the back road to Cass. G. Hurley saw several near Cass. No change from '53 and '58.
 104. Common Grackle (*Quiscalus quiscula*)—Considered common in lowlands. An increase in numbers over the last two Forays.
 105. Brown-headed Cowbird (*Molothrus ater*)—Occasional to common. Not as many around as one would expect and half of the reporters listed them as uncommon. C. Hand reported one on Gaudineer. No evident change from former Forays.
 106. Scarlet Tanager (*Piranga olivacea*)—Most reporters listed this species as fairly common. It was listed as uncommon in '58, but moderately common in '53.
 107. Cardinal (*Richmondena cardinalis*)—Occasional. F. Temple saw one on June 19 at ford across Greenbrier River on county road No 2. N. Laitsch reported a pair along the road from Burner Mt. to Durbin, and another pair along the back mountain road between Durbin and Cass. G. Phillips saw two pairs in valley east of Greenbank and D. Shearer reported two pairs in the town of Greenbank (one had nest containing three young). Listed as occasional to rare in '53 and '58.
 108. Rose-breasted Grosbeak (*Pheucticus ludovicianus*)—Listed as fairly common by most observers. A singing male was noted near the entrance to the virgin red spruce on Rt. 250 by H. Boecker, C. Katholi and C. Conrad. G. Hurley considered them common on Burner Mt. There seems to have been a gradual decline in numbers since 1953 when they were considered very common.
 109. Indigo Bunting (*Passerina cyanea*)—Listed as very common by most observers. Probably not too much change.
 110. Purple Finch (*Carpodacus purpureus*)—Fairly common in spruce trees throughout the area. A pair was seen and heard about four miles from Durbin along the back mountain road to Cass (across from the Wanless Church). K. Anderson reported a pair near the Cheat River bridge. Probably not too much change from 1958, but more common than in 1953.
 111. Pine Siskin (*Spinus pinus*)—Rare. G. Hurley saw two at the Gaudineer fire tower on June 14 and again the next day when they were feeding in the grass at the corner of the parking lot. P. Chandler reported hearing this species once. They were also rare in '53 and '58.
 112. American Goldfinch (*Spinus tristis*)—Common. No change.
 113. Red Crossbill (*Loxia curvirostra*)—One of the nice surprises of the Foray. At least 93 (by count) were noted by many campers on June 15 when we took our trip to Spruce Knob. There were probably many more as flocks were continually flying over. G. Hurley reported they were seen or heard almost every day on Gaudineer. A big increase over '53 and '58.
 114. Rufus-sided Towhee (*Pipilo erythrophthalmus*)—Common in suitable habitat. No change.
 115. Savannah Sparrow (*Passerculus sandwichensis*)—Occasional. G. Hurley found them on the Greenbank Radio Observatory grounds. A. Shreve, C. Katholi, N. Gluck and R. Bell heard (and saw) at least three singing on the Havener farm near Greenbank. This species was noted near Blister Pine swamp in '58 and there was one record for 1953.
 116. Vesper Sparrow (*Pooecetes gramineus*)—Not rare. The Ballentines, Boechers, and the Conrads heard and saw a pair in a field about four miles from Durbin along the back mountain road from Cass. N. Laitsch noted one just north of Cass along the same road. C. Hand reported one on Murphy's farm along Route 28. R. and P. Murphy saw a pair in field on the top of Allegheny. A. Shreve, C. Katholi, N. Gluck and R. Bell heard one on the Havener farm near Greenbank. There is probably not much change from former years.
 117. Grasshopper Sparrow (*Ammodramus savannarum*)—Considered occasional by most observers. They were considered rare in '58, but common along the Greenbrier River (in farming country) in '53. This species is noted for its fluctuations.
 118. Junco (*Junco hyemalis*)—Very common. Also considered very common in '53 and '58.
 119. Chipping Sparrow (*Spizella passerina*)—Very common. Considered common in both '53 and '58.
 120. Field Sparrow (*Spizella pusilla*)—Occasional. No apparent change.
 121. Fox Sparrow (*Passerella iliaca*)—The big find of the Foray (and the occasion for a lot of good-natured kidding until the second find was made). The first Fox Sparrow was seen and heard singing on June 16 near the Wanless Church by Kay and Chuck Conrad, Helen and Harold Boecker and Ruth and George Ballentine. The second Fox Sparrow was seen and heard on June 18 by E. R. Chandler, H. Harrison, J. Hutton, V. Olsen, and Nevada Laitsch not far north of Cass on the back mountain road. This species was not seen at former Forays.
 122. Swamp Sparrow (*Melospiza georgiana*)—Occasional. E. R. Chandler reported seeing one at beaver ponds in three areas — Buffalo, Middle Mt. and Blister

- Pine swamp. R. Bell saw adults and young at a swamp below Spruce Knob lake on June 15. Called rare in '58, but several noted in '53.
123. Song Sparrow (*Melospiza melodia*)—Occasional to common. A Song Sparrow captured and banded at the bridge below camp in 1958 was again captured at this Foray. No great change in status indicated from former Forays.

R. D. 1, Clarksville, Penna.

FORAY BIRD PROJECT

Harold E. Burtt

Introduction

The notion of a Foray Bird project came from our BBC research committee and a modest beginning was made at the 1964 Foray. The idea was publicized in the *Mailbag* prior to the Foray. It was to involve intensive study of a single species (Canada warbler this year) with everybody writing down all his observations of this species. An additional phase was to locate a few territories and have botanists and other specialists analyze these territories in detail.

At the first general Floray meeting the project was discussed. A mimeographed page was distributed suggesting things to watch for such as habitat, nest location, behavior. Cards with a printed caption were made available for recording observations and a file-box was placed at headquarters for the filled out cards. The project was mentioned from time to time during the week but no special motivation devices were applied. It was hoped that sheer scientific interest would furnish adequate motivation.

The amount of data submitted and analyzed herewith was meager. Only 20 reports of observations were turned in. The territorial study phase did not materialize. However enough was done to suggest that the project has possibilities and perhaps if continued will build up in interest and magnitude.

It might be interesting to compare participation in this project with that in the Nesting Contest, both projects being aimed at scientific information. Our 20 odd observations (some cards included more than one bird) do not compare favorably with the 503 breeding records of 1963. But it would be more illuminating to make our comparison with the first nesting contest. The earliest contest report available to the writer was 1953 when 155 nests were found and this was said to be the "highest in several years". So there is some hope that the Foray Bird project will build up similarly through the years.

The most obvious organizational difference between the two projects is the matter of motivation. Both presumably (and hopefully) involved interest in making a scientific contribution. But the Nesting Contest has in addition the competitive aspect. Presumably the Foray Bird project will involve only the scientists, while the Contest will include scientists and casuals. Perhaps this is as it should be in the interest of accurate observation and report. Just identifying the parent bird, counting the young or eggs and applying a tag does not require as much scientific acumen as reporting how the warbler with food spirals around the nesting area and what sounds it makes during the process.

Without more ado let us summarize the data submitted, keeping tongue-in-cheek because of the possibility of sampling error when dealing with only 20 reports. The only outside source to which reference will be made is: Bent, Arthur C., *Life*

Histories of North American Wood Warblers. New York, Dover Publication, pp. 646-656. This is a reprint of the original publication by the Smithsonian Institution.

Habitat

The reports revealed no consistent pattern as to habitat. A considerable variety of trees and other plants was noted—beech, red oak, sugar maple, spruce, birch, rhododendron, laurel, hemlock, cherry, black locust, blackberry bushes, ferns and mosses. Roadside habitats were mentioned in about one fourth of the reports. But perhaps this proportion should be discounted somewhat because the observers presumably had more mileage on roads than in woods. Bent quotes one author to the effect that the bird "avoids purely coniferous woods" but he cites another to the effect that "a favorite haunt is a ravine with a dense hemlock overstory and an understory of tangled rhododendron." In our reports we had one mention of spruce woods and another of deciduous with hemlocks mixed in. It would seem that the coniferous question is still open. We frequently found the birds near the water—either a stream or a damp area. Nobody reported the warbler in the tree-tops.

So it appears impossible to pin down the Canada warbler to any very specific habitat. At this juncture we cannot answer our research committee's query as to "just what this bird is looking for when it picks out its territory".

Territorial Behavior

We had only two reports of the warbler on territory. One observer returned to the spot daily for 7 days. She had two birds, one occupying about 100,000 square feet and the other about 50,000. Another observer estimated a territory at 18,000. These figures give quite a range and suggest that sheer size is not a major factor in delimiting territory. The first two birds sang in a circular pattern around the edges of the territory rather than at some single favorite perch.

General Behavior

Most observers reported the warbler as very "nervous" although two persons found it quite the contrary as it "sang and fed in plain sight". It may be that we are dealing with individual differences rather than a species characteristic. Also "nervous" may not be the same as shy or timid. Some birds moved rapidly alright but would follow along in the branches overhead while the observer walked down the trail. Of course the presence of the observer is a variable in itself and so is his proximity to the nest. The excited birds may be responding to the person near the nest, while the stable ones merely see a person in the woods with no nest involved. More critical observations of behavior could be made from a blind.

None of our observers reported a behavior of the Canada warbler mentioned by Bent, viz. catching insects on the wing in typical flycatcher fashion. We did have three reports of the broken-wing act. One observer was "attacked" by a male warbler "buzzing around my head like a fly".

Nest

The locations of the 4 nests reported were low, somewhat concealed, as under an overhanging bank, and near water. These items correspond well with Bent. We had only one mention of nest material—grass and fiber. Bent mentions this, but also dried leaves on the outside of the nest. We have no data on eggs, just one report of 3 eggs in a nest.

Feeding Young

Our observations were complicated by the bird's awareness of the presence of the person. Observations from a blind (Bent) found the Canada feeding young at intervals of 3 to 6 minutes. Our birds did nothing like that and spent considerable time just approaching the nest. However this approach behavior is interesting in its own right. In some cases it followed a circular pattern with decreasing radius, i.e. a spiral. Sometimes the male sang nearby while the female circled. But both sexes were seen carrying food. (Bent agrees). Usually it is considered that the female does all the incubating. We had one instance where the female flew completely out of the territory and the observer wondered if the male was taking her place on the nest. He could not check on this. We have no information as to the kind of food furnished the young except for an occasional mention of "caterpillar".

Voice

A few observers tried to describe the Canada's song—"a fast jumble with an abrupt ending". Such descriptions are not too profitable now that we have portable tape recorders wherewith we can study the song in detail and at leisure. Some of our folks did notice a little "tick" or chirp preceding the song which might be helpful in identifying the song when one cannot see the bird. Singing on territory was mentioned above although no rivals were visible to the observer. In one case a singing male was joined by a female and a lot of chasing ensued. In a few instances a bird sang with a caterpillar in its mouth.

We have a little information on frequency of singing. One observer reported singing perches of about 5 minutes. Another found a male singing every 11 seconds until alarmed. Still another clocked the performance for an extended period as follows: 30 minutes song, 20 min. silence, 45 min. song, 25 min. silence, 35 min. song. Par for the singing periods was about 5 or 6 songs per minute but occasionally dropping much below that. We know at least that the warbler does not sing continuously. The song sometimes is preceded by some twittering.

Chirps and alarm notes are reported more frequently than actual songs. The presence of our observers presumably precipitated some of the chirping. Chirps generally follow each other closely, 4 to 5 seconds in one instance and 15 to 20 in another.

Conclusions

So our initial Foray Bird project was modest in scientific results but encouraging in the interest shown by a few members. We were unable to pin down any preferred habitat for the Canada warbler. There was wide variation in the size of territory. We observed considerable nervous or excited behavior partly due, at least, to the presence of the observer which thus constituted a contaminating variable. We also noted the broken-wing act. Nests were low, concealed and near water. Feeding young when an observer is present involves a gradual approach to the nest usually in a spiral. Singing is interspersed with silent periods and we obtained some notion as to the time schedule for singing and chirping.

It was encouraging to have even 20 participants in this first round. Some of them put in quite a bit of time and effort. One person went back to the nest area daily for 7 days. Another spent an entire afternoon and most of the next morning watching a particular territory. If a goodly number of us did likewise another year we might come up with some worth while conclusions. It is hard to predict. With so many interesting things to do on the Foray one finds it difficult to decide just how

much time to devote to a particular project.

One aspect of our methodology worries the writer. If we are concerned with the warbler's behavior under normal conditions that is exactly what we do not get. We move in and scare the bird and continue to sit there while it reacts abnormally. Ideally we should sit in a blind like the photographers or else perhaps back off some distance and use a telescope. There is presumably some critical distance, for a given species, beyond which a human observer has little impact on the bird. If that distance is still within telescope range, well and good.

The foregoing discussion may be regarded as a modest beginning of a project that has potentialities if it is continued through the years. It is partly a question of how many people want to spend how much time.

2163 N. Starr Ave., Columbus, Ohio

TREES AND SHRUBS

Lena Artz and Elizabeth Gilman

Since lists of trees and shrubs of Camp Pocahontas area have been made in previous years, it was not considered necessary to make such lists in 1964. See Foray reports for 1958 and 1953.

Instead, something new in trees and shrubs was suggested by Kenneth Anderson and George Hurley. In spite of very unfavorable weather for pressing and drying, a fairly representative collection of leaves was made. At the end of the week these leaves were mounted on standard mounting paper by George Hurley.

This is the beginning of what we hope will be a useful and permanent collection, well worthwhile for nature study purposes. Those of us who work on shrubs and trees are very enthusiastic about continuing to work on such a project.

Since Camp Pocahontas is located in the mountains of West Virginia, many species of both trees and shrubs are more northern than southern in their distribution. Conspicuous among such trees are: *Betula lenta* L., Cherry Birch, *B. lutea* michx., Yellow Birch, *Prunus serotina* ehrh., Rum Cherry, *P. pennsylvanica* L., Pin Cherry, *Quercus rubra* var. borealis (Michx. f.) Farw., Northern Red Oak, *Fagus grandifolia* ehrh., Beech, *Fraxinus americana* L., White Ash, *Acer saccharum* marsh., Rock Sugar Maple, *A. rubrum* L., Red Maple and *Tilia americana* L., Basswood, or Linden. *T. heterophylla* vent., White Basswood, is found here, too. But, since it is chiefly southern in distribution, it was not seen as often as *T. americana*.

Liriodendron tulipifera L., Tulip Tree, one of the most beautiful of all our native trees, once grew to immense size in the rich coves of our Appalachian forests. Relatives of Tulip Tree, but more southern in range are *Magnolia tripetala* L., Umbrella Tree, and *M. Fraseri*, Fraser's Magnolia. The range of the latter is Virginia, West Virginia, Eastern Kentucky, and Georgia to Alabama, where it grows chiefly along streams and in swamps. Hence it is less common around Camp Pocahontas than is the Umbrella Tree.

Among the northern evergreens are *Abies balsamea* (L.) Mill., Balsam-Fir or "Blister Pine." The latter common name is the one commonly used in the Alleghenies. This name is given because of the resinous, warty blisters on its bark. This Fir and *Picea rubens* Sarg., Red Spruce, are the chief evergreens found in Blister Swamp. They also occur elsewhere in the county. Two other northern evergreens are *Tsuga canadensis* (L.) Carr, Hemlock, and *Pinus Strobus* L., White Pine.

There are many beautiful and interesting shrubs in the camp area. Among these,

chiefly of northern distribution, are: *Viburnum alnifolium* marsh, Hobblebush V. *cassinoides* l., Wild Raisin, *Sambucus pubens* michx., Red Elder, *Diervilla lonicera* mill., Bush Honeysuckle and *Nemopanthus mucronata* (l.) Trel., Mountain Holly. Another *Ilex*, not listed in previous lists for this area, is *I. longipes* Chapm, Long-stalked Holly. It is southern in its range.

One of the most interesting shrubs is *Aristolochia durier* Hill., Dutchman's Pipe-Vine. It is an inhabitant of rich woods and stream banks in Pennsylvania, Virginia, West Virginia, and southward in the uplands to Georgia and Alabama. With its odd brown blossoms, shaped like a Dutchman's pipe, and its large luxuriant leaves, it is a desirable cultivated plant, and it is much used for that purpose.

Waterlick, Virginia

BREEDING BIRD RECORDS FOR THE 1964 FORAY

Maxine Kiff

The B.B.C. Foray in its carefully planned programs and varied activities dealing with some phases of natural history, commands the imagination and energies of all campers during the crowded eight days of camp. Major emphasis is placed upon the study of bird life. To meet the interests and needs of a family camp dealing with persons of all ages this study is developed along many different lines—bird banding, population studies, morning walks, films, afternoon excursions over the countryside, etc. The common meeting ground (ornithologically speaking) for both seasoned and fledgling camper since the first foray, has been the institution known as the "Nesting Contest." Many of the contestants feel it is a matter of honor to find at least one nest. It gives a sense of solid achievement to the hunter, regardless of whether he is a charter member or a small David or Donna, to be able to report a "find." The 1964 contest was no exception to the preceding ones. Over 100 persons participated and 73 individuals actually found at least one nest or reported young out of the nest. All of this fun and hard work netted a total of 437 breeding records and a record number of 72 species for the Thornwood Forays.

Persons responsible for the organization and direction of the 1964 nesting contest were as follows:

Director of the Contest	Maxine Kiff
Coordinators	Leon Wilson, Ken Anderson
Coordinator for Juniors	Joyce Koch
Team Captains	Pat Temple, Ben Kiff, and Constance Katholi

Rules and regulations used in past forays were compiled by the directors and coordinators, and a list which was felt to be most applicable to the Thornwood Foray was printed and distributed to each contestant. In most respects the rules established for the 1963 contest were followed. The major difference was that points for each species were assigned at the beginning of the contest. These were based on the records of preceding camps held at Thornwood.

The Red Team, captained by Connie Katholi (Martha Shearer and Norris Gluck took turns in leading this team when Connie was unable to stay the entire week), was first place winner in number of points and number of nests located. The Yellow Team led by Ben Kiff, was second in both events. The White Team, whose captain was Pat Temple, was third. Individual winners were:

Total number of nests and young out of the nest reported:

First place: Virginia Olsen; Second place: Norris Gluck; Third place:

Donald Shearer.

Total points:

First place: Virginia Olsen; Second place: David Frank; Third place: Leon Wilson.

Best nester: David Frank. Donna Shearer and Cheryl Olsen in the junior division tied in number of nests found, with Donna having the edge on points.

An innovation this year was the use of the nesting cards distributed by the Cornell Laboratory of Ornithology instead of the regular B.B.C. nesting cards. These cards differed from those formerly used in that more specific data was required, and space was given for observations on subsequent days. Data on these cards were copied in order to preserve the sequence of B.B.C. records and the cards were then returned to Cornell University.

For those who are wondering why the type of nesting card was changed for this foray, the following explanation is offered: An article appeared in the February (1964) issues of *Audubon Field Notes* entitled "Nest-Record Card Program of North America." The author, David B. Peakall, described how these programs operated and gave a list of those currently in operation. He explained that the cards were designed to obtain information on four major phases of a species breeding biology—nest site and habitat, size of clutch, breeding success, duration and peaks in the breeding season. The Foray Director, Chuck Conrad, wrote to Mr. Peakall requesting more information. As a result the B.B.C. carried out not only its own program, but participated in the one instituted by Cornell University. The data in the attached annotated list of species have been collated from the information gathered from these cards.

A summary of the breeding birds of the Thornwood Foray area was written by Glenn Phillips in 1958. This covered the foray at Cheat Lodge in 1945 and the three following Thornwood forays. Table I consists of the data compiled by Phillips with the additional information obtained from the 1964 foray. Data of the Cheat Lodge Foray have been omitted.

Species	Census Data					
	1948		1953		1958	
	Nests	Young	Nests	Young	Nests	Young
	Out	Out	Out	Out	Out	Out
Sharp-shinned Hawk		1				
Broad-winged Hawk		2				
Sparrow Hawk						3
Ruffed Grouse	3	22			11	9
Turkey		5			22	
Killdeer			1			
Mourning Dove				1		
Yellow-billed Cuckoo				6		
Black-billed Cuckoo	1				3	
Chimney Swift	1		1			
Belted Kingfisher						1
Yellow-shafted Flicker				8	21	
Pileated Woodpecker						1

Species	1948				1953				1958				1964			
	Nests	Young Out Of Nest														
Red-headed Woodpecker					2											
Hairy Woodpecker	1								1							
Downy Woodpecker			1						1							
Eastern Kingbird	1				5				7							
Crested Flycatcher									1							
Eastern Phoebe	3		4		5		1		13							
Trail's Flycatcher			1		1											
Least Flycatcher	2		2		3				2							
Eastern Wood Pewee	1		1		1				1							
Horned Lark						1			1							
Tree Swallow									3							
Bank Swallow										1						
Rough-winged Swallow					4		1		2							
Barn Swallow	4		2		1		11		20		2					
Cliff Swallow			1		3				2							
Purple Martin					1											
Common Crow			1		1											
Black-capped Chickadee	3		2		3		1		2							
White-breasted Nuthatch	1															
Red-breasted Nuthatch			1													
Brown Creeper	1								1							
House Wren	3		3		5				12		3					
Winter Wren										1						
Bewick's Wren										1						
Mockingbird					1				1							
Catbird	10		12		17				12		2					
Brown Thrasher	1		7		3				8							
Robin	10		19		29				45		3					
Wood Thrush	2		2		3				2							
Hermit Thrush			2													
Swainson's Thrush	1								1							
Veery			3		1		3		3		2					
Eastern Bluebird	1		1		2				8		1					
Blue-gray Gnatcatcher									1		1					
Golden-crowned Kinglet	1								1							
Cedar Waxwing	5		—	15	—	11	—	—	20		1					
Loggerhead Shrike			—	—	—	—	—	—	—	1						
Starling			—	—	1	—	10	—	23	—	—					
Yellow-throated Vireo			—	—	—	—	—	—	—	1						
Solitary Vireo	1		—	4	—	—	—	—	—	1						
Red-eyed Vireo	3		—	5	—	7	—	—	9	—						
Black & White Warbler	—		—	—	2	—	—	—	—	—	4					
Golden-winged Warbler	2		—	2	—	1	—	—	2	—	2					
Parula Warbler	1		—	—	—	—	—	—	—	—	—					
Yellow Warbler	—		—	—	—	2	—	1	4	—						

Species	1948				1953				1958				1964			
	Nests	Young Out Of Nest														
Magnolia Warbler	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—
Black-throated Blue Warbler	1	—	—	—	5	—	—	—	1	—	—	—	—	1	—	—
Black-throated Green Warbler	2	—	—	—	—	1	—	—	—	—	—	—	—	—	1	—
Blackburnian Warbler	—	—	—	—	—	—	—	—	—	—	1	—	—	1	—	1
Chestnut-sided Warbler	—	—	—	—	—	8	—	2	5	2	10	2	—	—	2	2
Ovenbird	1	—	—	—	1	—	2	—	2	4	2	—	—	—	—	—
Northern Waterthrush	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—
Louisiana Waterthrush	—	—	—	—	—	1	—	3	—	—	—	—	—	2	1	—
Mourning Warbler	1	—	—	—	3	—	1	—	1	—	—	—	—	2	4	—
Hooded Warbler	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—
Yellowthroat	—	—	—	—	2	—	—	1	2	—	—	—	—	1	—	1
Canada Warbler	2	—	—	—	—	5	—	—	1	2	4	6	—	—	—	—
House Sparrow	1	—	—	—	1	—	—	—	8	—	—	14	—	—	—	—
Eastern Meadowlark	—	—	—	—	—	—	—	—	1	—	—	1	—	—	—	—
Red-winged Blackbird	1	—	—	—	5	—	—	2	—	—	—	10	3	—	—	—
Orchard Oriole	—	—	—	—	—	1	—	—	—	—	—	1	—	—	—	—
Baltimore Oriole	—	—	—	—	—	—	—	—	1	—	—	3	—	—	—	—
Common Grackle	1	—	—	—	2	—	—	4	—	—	—	2	1	—	—	1
Brown-headed Cowbird	—	—	—	—	2*	—	—	3	—	—	—	2*	—	—	—	—
Scarlet Tanager	1	—	—	—	2	—	—	—	1	—	—	1	1	—	—	—
Cardinal	—	—	—	—	—	—	—	—	1	—	—	1	—	—	—	—
Rose-breasted Grosbeak	3	—	—	—	—	—	—	—	1	—	—	1	1	—	—	—
Indigo Bunting	—	—	—	—	—	1	—	—	3	—	—	3	3	—	—	3
Purple Finch	1	—	—	—	—	—	—	—	—	—	—	1	1	—	—	1
Rufous-sided Towhee	1	—	—	—	4	—	—	2	—	—	2	—	2	2	—	2
Savannah Sparrow	—	—	—	—	—	—	—	—	1	—	—	1	—	—	1	—
Vesper Sparrow	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
Slate-colored Junco	5	—	—	—	—	8	—	3	7	2	18	5	—	—	—	—
Chipping Sparrow	7	—	—	—	—	7	—	—	19	—	—	23	11	—	—	—
Field Sparrow	1	—	—	—	—	5	—	—	4	—	—	5	1	—	—	1
Swamp Sparrow	1	—	—	—	—	—	—	1	—	—	1	—	—	1	—	1
Song Sparrow	1	—	—	—	—	1	—	2	2	1	—	4	3	—	3	3
Total Breeding Species	41	—	—	—	—	—	—	46	—	—	54	—	72	—	—	—

- Thirteen new species were added to the Thornwood list during the week of camp. Nests were found for the following species: Sparrow Hawk, Belted Kingfisher, Pileated Woodpecker, Crested Flycatcher, Tree Swallow, and Blue-gray Gnatcatcher. Young out of the nest records were established for the Bank Swallow, Winter Wren, Bewick's Wren, Blue-gray Gnatcatcher, Loggerhead Shrike, Yellow-throated Vireo, Northern Waterthrush, and Hooded Warbler.

Eighteen species were missing from this list. From the records of Ralph Bell, compiler of the Camp Bird List for 1964, it was found that each of these species was present during the period of camp. Eight species were classed as rare, and the remaining species uncommon or seen only a few times. According to past records it is evident that with the exception of the Turkey, Yellow-billed Cuckoo, Black-

billed Cuckoo, and the Magnolia Warbler, only one or two breeding records have ever been collected for these species. The Broad-winged Hawk, Killdeer, Common Crow and Magnolia Warbler were considered common by the campers. Only one Turkey and one Black-billed Cuckoo were seen and only six Yellow-billed Cuckoos were reported.

When the records of the individual species were tabulated it was found that despite the great increase in the quantity of reports over that of 1958, the relative number of breeding records for many of the species had not changed. The most abundant breeding species was the Robin, with a total of 48 records. The seven species in Table II account for about 44% of the total records established.

TABLE II

SPECIES	RANK	TOTAL BREEDING RECORDS
Robin	1	48
Chipping Sparrow	2	33
Starling	3	25
Cedar Waxwing	5½	21
Flicker	5½	21
Barn Swallow	7	18

Three families accounted for a total of 201 records. The Fringillidae with 11 members, was responsible for 84 of the reports; Turdidae and its five representatives, 65; Fourteen members of the Parulidae brought its total to 52.

It was interesting to note that many of the species which showed some increase were those that nested in holes or cavities. Among those were Flickers, Eastern Bluebirds, Starlings, and House Wrens. This was also reflected in several of the new species such as the Sparrow Hawk, Tree Swallow, Crested Flycatcher and the various woodpeckers. Most of these were nesting in natural cavities rather than in man-made structures.

The most rewarding habitats for sheer numbers were farmlands, and edges, or open areas in forests. Sixty two nests were located around the Thornwood area: 92 near Rt. 28; and 50 in the countryside near Rt. 250.

Higher elevations in the National Forests such as Gaudineer Knob (16), Top of Allegheny (16), Middle Mountain (13), and Burner Mountain (23), yielded fewer species but many of the rarer and unusual ones were reported from such areas. Two extremely interesting areas for investigation in future Thornwood Forays are Blister Pine Swamp near Gaudineer and the I. Moore Farm on Back Mountain Road.

Ona, W. Va.

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ANNOTATED LIST OF BREEDING BIRDS FOR THE 1964 FORAY

Sparow Hawk: Nest—3 Out of nest—0

For the first time nests of the Sparrow Hawk were reported. One nest with young was located in the belfry of the Presbyterian Church at Greenbank by Bill Athey. Martin Rudy found another nest about 20 feet up in the front of the Wanless Methodist Church. Judging from the dead mouse smell around the nest, young were present. George Koch found the third nest in the broken tip of a large Sugar Maple, 35 feet from the ground, at Becky Creek.

Ruffed Grouse: Nest—0 Out of nest—9 broods (41 young)

Five of the broods were seen near Camp Pocahontas, along Burner Mountain Road or near the study area there. In four of the reports the protective behavior of the female grouse was mentioned. One report was of a female grouse performing the broken wing act while 3 chicks watched from a small bush nearby. A female stood in the middle of Forest Service Road 55 at the Top of Allegheny while 8 chicks crossed the road one at a time. Near the junction of Forest Roads 55 and 57, a hen was observed giving alarm calls. Later her 6 or more chicks from the cover they had taken when human intruders came into sight. Eight young were seen crossing the Back Road to Cass. In this instance the female reached the middle of the road before the young came out of cover. As she continued walking, the young, one at a time, ran full speed across the road.

Belted Kingfisher: Nests—1 Out of nest—0

On June 15, Ken Anderson saw a Kingfisher enter and later leave a hole in a bank along Cheat River near the new bridge on U.S. 250. A mirror was focused so that he could see three feet down into the cavity, but as it seemed to drop off at the end so no nest could be observed. No nests of the Kingfisher have been found in previous Thornwood Forays.

Yellow-shafted Flicker: Nests—21 Out of nest—0

The nests ranged from 1½ feet to 50 feet in height, but of the 21, 16 were under 15 feet. Dead trees, stumps, fence posts, and apple trees, were the usual nesting places, but one pair chose a hole in a summer cottage. Three nests had 2-3 eggs. Four nests had 3 young but there were 1-2 in three others. Dorothy Conrad found a nest with 2 eggs in a fence post at Cass on June 16. A second observation on June 20 revealed 2 young were present.

Pileated Woodpecker: Nest—1 Out of nest—0

The nest was located on Rt. 644 in Virginia but since it was in the prescribed circle it constitutes a new record for the Thornwood Foray. The nest was about 30 feet high in a dead tree. Betty and Art Greenlee observed the pair for an hour on June 20, during which time the female remained on the nest.

Hairy Woodpecker: Nests—1 Out of nest—0

June 14, Art Greenlee found a nest in the study area at Burner Mountain. It was about 35 feet above the ground in the dead top of a maple tree. Both male and female were feeding the young who frequently were waiting with their heads protruding from the hole. Only one other nest has been reported—that in 1948.

Downy Woodpecker: Nests—1 Out of nest—1

The report of a nest was a new record for this species as previous records were of young out of the nest. The nest was found by Virginia Olsen on June 20, in a

dead snag 35 feet from the ground. Three young out of the nest with parents feeding them were seen on Back Mountain Road, June 17.

Eastern Kingbird: Nests—7 Out of nest—0

These nests were located 15 to 20 feet from the ground. Four were in apple trees and the others in White Oaks and locust trees. Most of the nests were inaccessible, but Chuck Conrad counted 3 young in a nest on an apple tree limb on Back Mountain Road.

Crested Flycatcher: Nests—1 Out of nest—0

A new record was established when on June 20, Virginia Olsen located a nest about 25 feet high in a dead tree near the Wanless Methodist Church. Young were in the nest.

Phoebe: Nests—13 Out of nest—0

Five of these were located under bridges; seven were in, or on barns, sheds, etc. One was being constructed under the roof ledge of the Girls Dorm at camp. These nests were between 8-10 feet from the ground. Four young were in each of two nests, while the number of eggs ranged from 1-5 per nest. Ted Greenlee reported finding a nest off Route 39 on a rock ledge June 15, with young. When he returned the next day a black snake had swallowed the nestlings.

Least Flycatcher: Nests—2 Out of nest—0

Two nests were located on Back Mountain Road. One was found about 18 feet high in an apple tree and another was found 30 feet high in a pear tree.

Eastern Wood Pewee: Nests—1 Out of nest—1

A nest was located at Greenbank about 40 feet high in a White Oak with the female incubating. Three young were reported out of nest near the tent area at camp on June 16.

Horned Lark: Nests—0 Out of nest—1

A Horned Lark feeding young was observed by E. R. Chandler at the Greenbank observatory, June 18.

Tree Swallow: Nests—3 Out of nest—0

This was the first Thornwood Foray in which Tree Swallow nests were reported. Each contained young birds. On June 14, Florence Branum found a nest in a hole 40 feet up in a dead tree over an abandoned beaver pond on Middle Mountain. Martha Shearer found another nest on June 15 along the road between Durbin and Middle Mountain Road. This was about 30 feet high over an active beaver pond. The third nest was located by David Frank, June 20, in a fence post along the dirt road east of Thornwood.

Bank Swallow: Nests—0 Out of nest—1

This was a new breeding record, reported by Virginia Olsen, who saw three young Bank Swallows out of the nest, sitting on a dead tree limb near Greenbank on June 15.

Rough-winged Swallow: Nests—2 Out of nest—0

Both nests were found by Norris Gluck. One was located in a hole under a concrete bridge over the Greenbrier River at Frank. At Cass he found a nest with young in the side of a concrete bridge.

Barn Swallow: Nests—20 Out of nest—2

Nesting sites utilized were barns, a garage, henhouse, shed and a blacksmith shop. Three nests had 4 eggs and two contained 2 each. On June 20, Morton Talbot found a nest with 7 eggs. It was on the side of a beam in a barn near Durbin. Most nests were found 3½ feet to 30 feet high. A colony was also located in the cave at the Sinks of Gandy. Probably 15 nests were active. This was not reported during the contest. More than fifty adults made a beautiful picture as they flew in and around the cave entrances.

Cliff Swallow: Nests—2 Out of nest—0

The two nests were found by Leon Wilson under the rafters of a corn crib near the junction of Routes 250 and 28. Adults were flying around the nests. Active Barn Swallow nests were in the same building only a few feet away.

Black-capped Chickadee: Nests—2 Out of nest—0

Adults were seen carrying insects into a hole in a birch tree near a dense second growth of conifers. The birch was by the side of Shavers Fork River near Road 272. A second nest was found near Greenbank in the side of a pear tree only 1 foot above the ground.

Brown Creeper: Nests—1 Out of nest—0

June 18, Max Thacker reported parents feeding young in a nest in the Virgin Spruce Population Study Area at Gaudineer. The nest was located under a loose piece of bark (seen from the side) about 35 feet high on a Red Spruce. The visits of the parents were recorded during the period of observation at 5:40—5:50—6:03—6:07—6:15—6:25. Only one nest has been reported before. (1948)

House Wren: Nests—12 Out of nest—3

Nests were found in 5 fence posts, a front porch, 2 meter boxes, a steel post, 1 bird house and 2 trees. Ten of these nests were from 3 to 6 feet high but the other two were 20 feet to 25 feet high. Young were being fed in 7 nests. The broods out of the nest were on the Back Mountain Road and at Wildell.

Winter Wren: Nests—0 Out of nest—1

George Hurley reported two young out of the nest, June 17, on Gaudineer Knob near the Virgin Spruce Study Area. This was a new record for this species.

Bewick's Wren: Nests—0 Out of nest—1

Nevada Laitsch saw two young out of the nest at the edge of a meadow near the end of the Cass Scenic Railroad line, June 18. This was also a new record for Thornwood Forays.

Mockingbird: Nests—1 Out of nest—0

The single Mockingbird nest was reported by Don Shearer, June 18, at the intersection of Routes 28 and 250. It was located in a spruce tree some 7 feet above ground and had 4 eggs. One nest was reported in 1958.

Catbird: Nests—12 Out of nest—2

Four nests contained 2-4 eggs, and eight nests with young averaged about three per nest. Nesting sites were blackberry vines, rhododendron bushes, quince bushes, hawthorns (5), and an apple tree. These nests averaged 4-6 feet from the ground.

Brown Thrasher: Nests—8 Out of nest—0

One nest was being constructed and eggs (2-4) could be seen in three nests. One

to four young were in three nests. Four of the nests were located in hawthorns and the others in briars, hemlock and laurel.

Robin: Nests—45 Out of nest—3

One pair was constructing a nest, eggs were in 11, young in 20 nests, and adults refused to leave the nest in 12 other instances. Twelve different species of trees were selected for nesting sites, but the favorites were apple trees (15) and white oaks (5). Five nests were found on, or in buildings. Three eggs were counted in one nest and four in another. Three nestlings were found in 10 nests and four were in 2 other nests.

Only 3 nests were built below 5 feet and only five above 30 feet. Nineteen were constructed between 10-20 feet and fourteen between 5-10 feet. The nests were found over the varying elevations of the territory. (One young was seen at Blister Pine Swamp). However, almost all nests were found at lower elevations near human habitation or on abandoned farms.

Wood Thrush: Nests—2 Out of nest—0

Both nests were found June 14. One was located in a small yellow birch at Camp Pocahontas and had three eggs in it. The other was in the Gaudineer area in a small Red Spruce with 3 young almost ready to fledge.

Swainson's Thrush: Nests—1 Out of nest—0

Art Dunnell reported observing a Swainson's Thrush June 19 construct a nest at Gaudineer Knob in the Virgin Spruce study area, about 12 feet from the ground.

Veery: Nests—3 Out of nest—2

Each nest was located about a foot from the ground. The nest on Buffalo Creek Road had 4 eggs and was found in a rhododendron bush. Another was found at the intersection of Forest Roads 55 and 57 in a blackberry thicket, completely covered over at the top with vegetation. Three eggs were observed in it on June 16 and again on June 20. The female remained on the nest until the observer was only a foot or so away in both instances.

The third nest, which was found by Marie Masteller, was seen by many of the campers as it was only a short distance from camp. A road crew had cut off the cover within 4 inches of the nest several days before. Marie's observations were as follows: June 15, three young about $\frac{1}{2}$ feathered; June 17, larger, with more feathers; June 19, 2 out of the nests but one was nearby; June 20, nest empty.

Eastern Bluebird: Nests—8 Out of nest—1

Three nests were located in fence posts and the other four in holes in trees, from $3\frac{1}{2}$ to 40 feet from the ground. One nest on Back Mountain Road had 6 eggs in it and another near Camp Allegheny had only 2 eggs. Young were thought to be in the other nests. Three of the nests were in trees on the hillsides near end of the Cass Scenic Railroad line. Three young out of the nest were observed near Bartow.

Blue-gray Gnatcatcher: Nests—1 Out of nest—1

Virginia Olsen found a nest 25 feet high in a locust tree on Back Mountain Road on June 18 and Betty Greenlee reported adults feeding 4 young high in the trees, on Rt. 644 over the state line in Virginia. These were new records for Thornwood Forays.

Golden-crowned Kinglet: Nests—1 Out of nest—0

Virginia Olsen watched a pair of Golden-crowned Kinglets for an hour as they

built a nest at Spruce Lake about forty feet high in a spruce tree.

Cedar Waxwing: Nests—20 Out of nest—1

Seven of the nests were in apple trees, four in hawthorns and four in evergreens. They were located from 6 to 60 feet from the ground, which made it difficult in most cases to count either eggs or young. From 3-5 eggs were in ten nests. Young were in 6 nests and 2 nests were being constructed. Four young out of the nest were being fed by parents. Most of the nests were located at a lower elevation. The localities mentioned most were Cass, Durbin, Bartow, Back Mountain Road, and Camp Pocahontas.

Loggerhead Shrike: Nests—0 Out of nest—1

Several persons, including the writer saw a pair of shrikes with four immature young at a farm near the intersection of Rt. 28 and U.S. 250. (Bartow) No one reported this in the contest. The adults and young sat on a wire fence several minutes, flew to the ground, and returned back to the fence which enabled the observers to get a close look. No shrikes have been on any of the lists for preceding Thornwood Forays so this would constitute a new record.

Starling: Nests—23 Out of nest—0

Churches, barns, sheds were the sites for 8 nests and the rest were in cavities in various trees, one electric pole and one telephone pole. No young out of the nest were seen but 13 of the nests contained young. One to four eggs were found in four of the nests. The height of the nests varied from 1-50 feet.

Yellow-throated Vireo: Nests—0 Out of nest—1

New Record. June 20, on Rt. 644 in Virginia the Greenlees observed a female Yellow-throated Vireo feeding 2 young in a basswood tree, while the male sang nearby.

Solitary Vireo: Nests—0 Out of nest—1

Ann Shreve on June 20 observed one rather large fledgling being fed by its parents in the Blister Pine Swamp area at Gaudineer.

Red-eyed Vireo: Nests—9 Out of nest—1

The Red-eyed Vireo was well distributed over the area from Cass and Greenbank, to Burner Mountain and Gaudineer Knob. The nests were from 6 to 50 feet in height and three of these were located in Maple trees. One nest was being constructed, six had eggs, and young were being fed in two others.

Black and White Warbler: Nest—0 Out of nest—4

No nests of the Black and White Warbler have been found on any of the Thornwood Forays, but young out of the nest were reported in 1953. Three of the 1964 reports were from the Thornwood area and one was from Old House Run Park on Route 250.

Golden-winged Warbler: Nest—2 Out of nest—2

A nest being constructed was observed at Camp Pocahontas. It was in a small shrub a foot above ground on a road bank. Another with 4 young was found along the East Fork of Greenbrier River in a clump of weeds almost on the ground on June 15. The adults were feeding the nestlings small green worms $\frac{1}{2}$ " long. The nest was empty on June 17. The young out of the nest were seen along a stream bank by Route 250 and along the Thornwood road.

Yellow Warbler: Nests—4 Out of nest—0

Nests were found at Greenbank, Boyer, Thornwood, and Back Mountain Road. Oliver Johnson counted 3 young in a nest 15 feet high in a Sugar Maple. Young were in two other nests. These were located on apple and oak tree limbs from 10-15 feet from the ground.

Black-throated Blue Warbler: Nests—1 Out of nest—0

A nest located by Ann Shreve at Camp Pocahontas on June 15, contained four eggs. It was about a foot above the ground in Beech sprouts on a road bank. The male was observed chasing a chipmunk from the nest.

Black-throated Green Warbler: Nests—0 Out of nest—1

Young out of the nest of this species were observed by David Frank on June 20. The young were being fed by the adults in a tree along the dirt road east of Thornwood.

Blackburnian Warbler: Nests—1 Out of nest—1

A nest was found by V. Olsen, June 20, on Gaudineer Knob. Young were in the nest which was about 50 feet high on top of a horizontal branch. A female feeding young was seen by E. R. Chandler in the Middle Mountain Cabin Area. One out of the nest was reported in 1953.

Chestnut-sided Warbler: Nests—10 Out of nest—2

The Chestnut-sided Warbler has been the most abundant breeding warbler at each of the Thornwood Forays with the exception of the one in 1948 when none were reported. The nests ranged from 2 feet to 4 feet in height, six of them being 3 feet. Tangles of blackberry bushes were sites for seven nests. The other 3 were found in brushy surroundings in woods. A party watched a nest being constructed on Middle Mountain Road. They returned the next day and found the nest was much more rounded, bulky, and very compact.

Two nests were being constructed, eggs were in 2, and young in 6. The young in numbers ranged from 2-4 and there was no mention of cowbird nestlings. However, both Glen Phillips and George Hurley saw a cowbird egg in each of the nests they reported. (This, incidently, was the only mention of the cowbird on any of the cards handed in.) Both Phillips and Hurley made a second observation at a later date and found the number of the eggs in the nest unchanged. Nests were also located on Forest Roads 54 and 55, Camp Pocahontas, and the road between Durbin and Wildell. Ann Shreve found a nest tipped over by rain on Burner Mountain. She anchored the nest with banding wire in order to keep the 3 nestlings from falling out. Young out of nest were seen in the Burner Mountain study area.

Oven Bird: Nests—2 Out of nest—0

Clark Miller found a nest, June 20, on the ground near an old logging road eight miles from camp. There were three eggs in it. Another nest found the same day at Camp Pocahontas by Carol Hand had five young in it. This was beside a stream, in grass and dead leaves.

Northern Waterthrush: Nests—0 Out of nest—1

A new record. E. R. Chandler and party reported seeing an adult Northern Waterthrush with 2 well grown young in Blister Pine Swamp, June 20.

Louisiana Waterthrush: Nests—2 Out of nest—1

A Louisiana Waterthrush was observed constructing a nest along the Greenbrier

River in the Thornwood area on June 20, by Anna Dressel. Maxine Kiff found two nearly ready-to-fledge young near the mouth of Grassy Run. These were in the bank about 2 feet from the water. An immature bird was caught in the net beneath the bridge at camp and banded. The only nest reported before was during the 1953 Foray.

Mourning Warbler: Nests—2 Out of nest—4

One nest was found with eggs (4) by Clark Miller at Whittaker Station, about 1½ feet from the ground in a Flowering Raspberry thicket. Another with 3 young was found on Burner Mountain Road near camp, in clematis and blackberries by Ann Shreve. Young out of the nest were reported in the Burner Mountain study area, Burner Mountain Road, and Gaudineer.

Yellowthroat: Nests—0 Out of nest—1

An adult feeding young was observed by Gladys Murray, June 18, on Buffalo Fork Road.

Hooded Warbler: Nests—0 Out of nest—1

This was also a new record. On June 16, George Hurley saw two young out of nest on a wooded hillside at Hosterman, W. Va.

Canada Warbler: Nests—4 Out of nest—6

The Canada Warbler was chosen for the 1964 Foray Bird and a detailed article has been written describing the observations made by campers. Ten breeding records were written up for the nesting contest. Six of these were young out of the nest which were seen in the following localities: Burner Mountain study area, Burner Mountain Road, Middle Mountain Cabins, and Camp Pocahontas. Nests were found by Leon Wilson, David Frank, and Bill Worthley. One nest with three eggs was found on Buffalo Fork Road in the ground under the overhang of the stream bank, hidden under blackberry briars. Another nest was found on Long Run Road. This nest was near the top of a road side bank almost completely covered with a grass sod and ferns. Wilson observed the nest several days. He reported as follows: June 16, 1 egg; June 18, 2 eggs; June 20, 3 eggs. The other two nests had three young each. One was located at the top of a road bank and the other at the base of the road grade. A total of 14 young and 6 eggs were counted.

House Sparrow: Nests—14 Out of nest—0

The House Sparrow following the haunts of man, built 10 nests in various barns, houses, and sheds. Five nests were found in trees and shrubs near dwellings. Of interest was the report of Leon Wilson who discovered that in two different localities, House Sparrows had added more material to a Barn Swallow nest and laid their own eggs in it. Whether the nests were old or new nests taken over by the Sparrows was not known.

Eastern Meadowlark: Nests—1 Out of nest—0

Only one nest has been previously reported for the Thornwood Forays. The 1964 nest was found in a pasture field at Bartow by Ken Anderson and son, Dick. Five very young birds and one beige egg with brown specks were in the nest.

Red-winged Blackbird: Nests—10 Out of nest—3

One to four young were reported in 6 of the nests. Eggs were in the other four. Three reports were of young out of the nest. Nests were found at Spruce Knob Lake and lower elevations at Greenbank, Bartow, and Thornwood, usually in swampy

areas or near meadowland.

Orchard Oriole: Nests—1 Out of nest—0

The adults were feeding young in the only nest reported for the Orchard Oriole. This was located on Back Mountain Road by Leon Wilson in a pear tree some 20-25 feet high.

Baltimore Oriole: Nests—3 Out of nest—0

Only one nest had been reported in previous Thornwood Forays (1958). Three nests were observed this year. Kay Conrad found a nest in the Blackhurst apple orchard at Cass. The nest with young was about 20 feet from the ground. David Frank found a nest, also on an apple tree limb, about 45 feet high in an orchard east of Thornwood. The third nest was seen by Ralph Bell on Back Mountain Road near the Moore Farm. The young were sitting on a limb by the nest in a maple tree. This nest was about 40 feet high.

Common Grackle: Nests—2 Out of nest—1

A nest was found at Greenbank in a White Oak tree about 60 feet high. The parents could be seen feeding young. Another nest at Cass was located forty feet high in a White Pine. A young grackle out of the nest was observed near Greenbank beside Deer Creek.

Brown-headed Cowbird: Nests—2 (in host nests) Out of nest—0

One cowbird egg was found in a nest of a Chestnut-sided Warbler in a blackberry bush about 3 feet high. This was about 3 miles from camp on Rt. 28. When observed five days later the nest still contained only one warbler egg and one cowbird egg. Another nest about three feet high in a Sugar Maple on Burner Mt. had two Chestnut-sided Warbler eggs and one cowbird egg.

Scarlet Tanager: Nests—1 Out of nest—0

The single report of the Scarlet Tanager nest was made by Art Rybeck, who discovered the nest along Buffalo Creek Road, June 18. The female was incubating in the nest which was about 30 feet off the ground in a Red Oak Tree.

Cardinal: Nests—1 Out of nest—0

Donald Shearer found the only Cardinal nest, on June 19. The nest with 3 young was located 7 feet high in a spruce tree in a yard at Greenbank.

Rose-breasted Grosbeak: Nests—1 Out of nest—0

This nest was found at the Top of Allegheny, June 16, by Martha Shearer. It was located about 10 feet high in a Rhododendron bush on a dry hillside. The nest contained eggs.

Indigo Bunting: Nests—3 Out of nest—3

Three persons reported young out of the nests at Camp Pocahontas, end of the Cass Railroad line and the road to Top of Allegheny. Three nests were found which were one to two feet from the ground in blackberries, ferns, grass, and in weeds. Ted Greenlee watched a nest being constructed at camp on June 19. His second observation on the 20th found the nest to be completed despite considerable attention from campers. Three young were found in a nest along the Durbin Road and 4 eggs in one along forest roads.

Purple Finch: Nests—1 Out of nest—1

Nest records of the Purple Finch had not been reported since the 1948 Foray.

Frances Ault found a nest with three eggs on June 16 at Elk Mountain Chapel on Route 28. The nest was in an old apple tree about 15 feet high.

Rufous-sided Towhee: Nests—2 Out of nest—2

Two nests were located. One with 4 eggs was found at the junction of Forest Service Roads 55 and 57 about 3 feet high in a blackberry thicket. The other with 3 young, was on the Burner Mountain Road in a low branch of an old spruce tree, three feet from the ground. Out of nest young were reported at Camp Pocahontas and Top of Allegheny.

Savannah Sparrow: Nests—1 Out of nest—0

Ken Anderson discovered the Savannah Sparrow's nest at Blister Swamp at the Pocahontas-Randolph County Line on June 20. The four brown eggs, very heavily mottled or speckled, were in a nest on the ground in the grassy mountain meadow.

Slate-colored Junco: Nests—18 Out of nest—5

Man with his modern road building machinery has slashed his way through the mountain forests of West Virginia and the Junco has found the banks to his liking. All but one of the 18 nests were found in such a habitat. All nests were on the ground either under roots, mossy pockets, or sod overhang, or in sparse grass. The one exception to the bank was the one found in the yard at Middle Mountain Cabins by Florence Branum. The adult bird when flushed from the nest did the broken wing act for its audience. Five nests contained 1-4 eggs; 13 had 2-4 young. There were also 5 reports of young out of the nest.

Three persons were able to make second observations of junco nests. Norris Gluck reported 3 young in a nest at Gaudineer Road on June 14. The nest was empty on June 15. Glen Phillips found a nest with 2 eggs near Rt. 28 about 3 miles from camp on June 15. There were 4 eggs June 20. Another nest being constructed on June 15 was located by Maxine Kiff along the side of Burner Mountain Road. It was completed when observed on June 19, but there were no eggs in it.

Chipping Sparrow: Nests—23 Out of nest—11

This was the second most abundant breeding species. Two pairs were observed constructing nests, eggs were in 9 nests and young were in 12. There were eleven out-of-the nest reports. The eggs numbered from 2-4 and the nestlings ranged from 1-4. Three young were in 5 nests. Sites in apple and evergreen trees were the choice of 13 pairs, but various shrubs and trees were chosen by the others. As for the height, 10 nests were under 6 feet. Ten nests were from 10-15 feet and 1 was over 40 feet.

Field Sparrow: Nests—5 Out of nest—1

Four nests were found (3 with 3 eggs and 1 with 4; 1 with young) usually in open fields, either on the ground or a foot or so high in a small shrub or tree. These on Middle Mountain Road, end of the Cass Railroad line, Wanless Methodist Church, and Back Mountain Road. There was one report of young out of the nest.

Swamp Sparrow: Nests—0 Out of nest—1

The one report of the Swamp Sparrow was by Ralph Bell, June 15. In the swampy area below Spruce Lake, he observed a parent carrying food to one young with a very short tail.

Song Sparrow: Nests—4 Out of nest—3

Three of the nests were on the ground. The fourth was in a wild cherry in a fence

row, 4 feet from the ground. Three of the nests contained 4 eggs, the fourth, 5 eggs. Back Mountain Road, the junction of U.S. 250 and Rt. 28, near Bartow, and the area around camp, were the locations for the nesting sites. There were three reports of young out of the nest.

PHYSIOGRAPHY, GEOLOGY AND SOILS OF THE CAMP POCOHONTAS AREA

W. A. van Eck

Camp Thornwood is located in the northeastern corner of Pocahontas County, West Virginia, at the border between the Appalachian Plateau and the Appalachian Ridge and Valley province, in an area often referred to as the Alleghenies.

This is geologically part of a vast area of Paleozoic sedimentary formations which stretch out between the Blue Ridge to the east and the Rocky Mountains to the west. Sedimentary rocks originate from mineral and organic deposits in the waters that once covered this entire area. Since Paleozoic times, or about 200 million years ago, the seas permanently retreated and no more sediments were deposited. Instead, rock folding and water erosion sculptured the earth. Wherever folding of rocks occurred, erosion removed the rock almost as fast as it was raised up so that none of the upward folds or anticlines remained intact except where hard sandstone rock prevented their erosion.

Camp Thornwood is centered on such an upward fold from which the top layers of younger Pennsylvanian and Mississippian rocks were removed by erosion leaving the underlying Devonian sandstones and shales exposed at the surface. To the west at Shavers and Back Allegheny Mountains is a downfold where the younger rocks were not removed, and yet the mountains are higher. So it appears that it is primarily the resistance of the rock layers to erosion, not the original folding, that determines the elevation of the land surface.

Sandstone is hard sedimentary rock whereas shale and limestone are relatively soft. That is why anywhere there is a ridge or a knob one can suspect a sandstone formation at its core, while the broad valleys are cut out in the soft shales and limestones. Actually, stream valleys may occur anywhere, even in sandstone, because water tends to carve out a gully wherever it goes, but you will have noticed the steep narrow canyons it forms when rocks are hard.

To the east of Camp Thornwood across the Virginia State line is Allegheny Mountain which continues into Spruce Mountain in Pendleton County. This ridge is referred to as the Allegheny Front, or the eastern edge of the Appalachian Plateau. East of this line the rocks are sharply folded, North Fork Mountain being the first fold and Seneca Rocks a spectacular cross section of it, showing a resistant sandstone remnant folded to a 90 degree angle.

Elevations in the area vary between 2730 feet in the Greenbrier Valley at Durbin to 4860 feet at Spruce Knob. Camp Pocahontas itself is at 3000 ft., with Burner Mountain to the west rising to 3900 ft., and Smoke Camp Knob just to the east rising abruptly to 4200 ft. Shavers Mountain at Gaudineer Knob is 4450 ft. and Cheat Bridge 3500 ft. Relief at the camp area is from 500 to 1200 feet between streams and ridge tops.

Camp Pocahontas is near the point where Pocahontas, Randolph and Pendleton Counties meet. From here Gandy Creek flows northward (while briefly disappearing in the Greenbrier limestone at the Sinks of Gandy) to join the Dry Fork of the

Cheat River at Gandy; Elk Run flows eastward to join Big Run and the North Fork of the Potomac River; the East Fork of the Greenbrier River flows southwest to join the New River at Hinton.

Over 90 percent of the soils of the Thornwood area are weathered from underlying sedimentary rock. Their nature varies with the type of rock, the steepness and orientation of the slope, and the kind of vegetation. On steep terrain and hard rock they are generally shallow and stony. Soil colors often resemble colors of the parent rock, hence the reddish tinge in the soils around Camp Thornwood and Burner Mountain which is inherited from the Devonian rocks. Most of the soils are well-drained, medium-textures, very acid and of low fertility. They will support abundant forest vegetation depending on soil depth and availability of adequate moisture. Abundant rainfall throughout the year (41 inches per year at Arbovale) causes excessive soil leaching but forest trees are able to recirculate soil nutrients in their foliage and forest litter.

Lower slopes have deeper soils as erosion materials accumulate through gravity. The stream valleys are filled up with mixtures of erosion materials which gravity and water brought downhill, and soils vary accordingly.

The common soil series found on the slopes and ridges in the Thornwood area are Dekalb and smaller areas of Teas, Lehew and Leetonia.

1505 Woodland Ave.
Morgantown, W. Va.

INSECTS COLLECTED AT THE 1964 FORAY

Maxine Kiff

The number of insects collected this year was somewhat smaller than in past years due to excessive rain and the cool weather, both of which had an adverse effect on the collecting of insects. However, we can proudly announce that we had one hundred per cent participation this year as everyone present collected at least one Ceratopogonidae. We had specimens of only ten orders compared to twelve for last year. This represented forty-one families compared to fifty-seven last year.

The annotated list follows.

ORDER EPHemeroptera—Mayflies

Family—Ephemeridae

Family—Baetidae

ORDER ODONATA—Dragonflies and Damselflies

Family—Zygoptera (Damselfly)

ORDER ORTHOPTERA—Grasshoppers, Crickets, Roaches etc.

Family—Blattidae—(Roaches).

Parcoblatta virginica. Virginia Wood Cockroach

Family—Arididae (Grasshopper)

Camnula pellucida. Clear-winged Grasshopper

Dissosteira carolina. Carolina Grasshopper

Appalachia hebardii. Appalachian Grasshopper

Family—Ceuthophilus (Cricket).

Ceuthophilus maculatus. Spotted Camel Cricket

ORDER HEMIPTERA—True Bugs

Family—Anthocoridae (Flower bugs).

Family—Miridae (Leaf bugs).

Poecilocapsus lineatus. Four-lined Leaf Bug

Lygidea mendax. Apple Red Bug

Family—Reduviidae (Assassin Bugs).

Narvesus carolinensis

Family—Neididae (Stilt Bugs).

Family—Aradidae (Flat Bugs).

Family—Pentatomidae (Stink Bugs).

ORDER HOMOPTERA—Cicadas, Aphids, Leaf-hoppers, etc.

Family—Cicadellidae (Leaf-hoppers).

ORDER NEUOPTERA—Nerve-winged

Family—Corydalidae (Dobson Flies).

Family—Chrysopidae (Lacewings).

ORDER COLEOPTERA—Beetles

Family—Cicindelidae (Tiger Beetles).

Family—Carabidae (Ground Beetles).

Family—Silphidae (Carriion Beetles).

Family—Staphylinidae (Rove Beetles).

Family—Elateridae (Click Beetles)

Family—Meloidae (Blister Beetles).

Family—Scarabaeidae (Scarab Beetles).

Phyllophaga (May Beetles).

Family—Cerambycidae (Long-horned Wood-boring Beetles).

Desmocerus palliatus (Elderberry Long-horned Beetle).

ORDER LEPIDOPTERA—Butterflies and Moths

Family—Papilionidae (Swallow-tails).

Papilio glaucus (Tiger Swallow-tail).

Family—Nymphalidae

Limentis arthemis astyanax (Red-spotted Purple).

Nymphalis antiopa (Mourning Cloak).

Vanessa atalanta (Red Admiral).

Speyeria cybele (Great Spangled Fritillary).

Speyeria atlantis (Atlantis Fritillary).

Euphydryas phaeton (Baltimore).

Family—Hesperiidae

Eparygyreus clarus (Silver-spotted Skipper).

Atrytone zabulon (Hobomok Skipper).

Family—Sphingidae

Calasymbolus excaecatus (Blinded Sphinx).

Ceratomia amyntor (Four-horned Sphinx).

Family—Saturniidae

Tropaea luna (Luna Moth).

Family—Citheroniidae

Anisota rubicunda (Rosy Maple Moth).

Family—Noctuidae

Euparthenos nubilis

Family—Geometridae

Euchlaena amoenaria

Euchlaena obtusaria

Eugonohapta nivosaria (Snowy Geometer).

Heliomata cycladata

ORDER DIPTERA—Flies

Family—Tipulidae (Crane Fly).

Family—Ceratopogonidae (Biting Midges or Punkies).

Family—Tabanidae (Horse Flies and Deer Flies).

Tabanus

Chrysops

Family—Bombyliidae (Bee Flies).

Family—Asilidae (Robber Flies).

Family—Syrphidae (Flower Flies).

Family—Tachinidae (Tachnid Flies).

ORDER HYMENOPTERA—Wasps, Bees, Ants etc.

Family—Ichneumonidae (Ichneumons).

Family—Vespidae (Paper Wasps).

Vespula maculata (Bald-faced Hornet).

Vespula maculifrons (Yellow Jacket).

Family—Apidae (Bees).

Apis mellifera (Honey Bee).

Bombus (Bumble Bee).

Ona, West Virginia

REPTILES AND AMPHIBIANS

Jeff Lightburn

The 38 species of reptiles and amphibians collected during the 1964 Foray in Pocahontas County included 11 snakes, 2 turtles, 13 salamanders, 2 toads, 8 frogs and 2 lizards.

In the Herptile department this Foray was one of the most successful due principally to the great amount of time spent collecting specimens by a number of the boys attending. Considerable rain was a factor in finding some of the herps. Contributors are named in the Mammal report. Miss Maxine Thacker and Mr. Pete Chandler helped in the identification of certain species.

SNAKES

1. Eastern Garter Snake. (*Thamnophis s. sirtalis*). Both adults and young were found.
2. Pilot Blacksnake. (*Elaphe o. obsoleta*). Three were collected, two of which had been killed by cars. The dead two, females, were mounted.
3. Eastern Ring-neck Snake. (*Diadophis punctatus edwardsi*). Very common. At least 50 were collected and released.
4. Timber Rattlesnake (*Crotalus h. horridus*). A female with 7 rattles which was 50 inches long was found by Maxine Thacker. Major Weaver brought in a male 60 inches long which had 8 rattles.
5. Red-bellied Snake. (*Storeria o. occipitomaculata*). Several were collected and released.
6. Smooth Green Snake. (*Opheodrys v. vernalis*). Three were found.
7. Eastern Black Racer. (*Coluber c. constrictor*). One was seen.
8. Northern Water Snake. (*Natrix s. sipedon*). Found in the Greenbrier River.
9. Eastern-hog-nosed Snake. (*Heterodon p. platyrhinos*). One reported near Five Mile Run.
10. Copperhead. (*Ancistrodon contortrix makesen*). Only one reported.
11. Milk Snake. (*Lampropeltis doliata triangulum*). Several were found.

TURTLES

1. Snapping Turtle. (*Chelydra s. serpentina*). Several reported and one was turned in by F. Temple.
2. Eastern Box Turtle. (*Terrapene c. carolina*). Only one was reported.

SALAMANDERS

1. Red-spotted Newt. (*Diemictylus v. viridescens*). Found throughout the area.
2. Red Eft. The land phase of the Red-spotted Newt, it was also common.
3. Northern Dusky Salamander. (*Desmognathus f. fuscus*). Very common.
4. Seal Salamander. (*Desmognathus*). Several were collected.
5. Allegheny Mountain Salamander (*Desmognathus o. ochrophaeus*).
6. Northern Two-lined Salamander (*Eurycea b. bislineata*). Collected at the Sinks of Gandy.
7. Long-tailed Salamander. (*Euryceall. longicauda*). Observed along the Greenbrier River and the creek behind the dining hall.
8. Northern Red Salamander. (*Pseudotriton r. ruber*). Collected in stream behind dining hall.
9. Mud Puppy. (*Necturus m. maculosus*). Several collected.
10. Ravine Salamander. (*Plethodon richmondi*). Collected near Five Mile Run.
11. Slimy Salamander. (*Plethodon g. glutinosus*). Two were collected.

TOADS

1. Fowler's Toad. (*Bufo woodhousei fowleri*). Very common.

2. American Toad. (*Bufo terrestris americanus*). Also very common.
FROGS

1. Pickerel Frog. (*Rana palustris*). Two specimens.
2. Green Frog. (*Rana clamitans*). One collected.
3. Wood Frog. (*Rana s. sylvatica*). One found by Don Shearer.
4. Northern Leopard Frog. (*Rana p. pipiens*). Collected by several members and identified by Pete Chandler.
5. Bull Frog. (*Rana catesbeiana*). Heard but not collected.
6. Cricket Frog. (*Acris gryllus crepitans*). One collected.
7. Northern Spring Peeper. (*Hyla c. crucifer*). One immature specimen taken.
8. Common Tree Frog. (*Hyla v. versicolor*). One specimen collected and released.

LIZARDS

1. Broad-headed Skink. (*Eumeces laticeps*). Either this species or the more common Five-lined Skink was reported but not collected.
2. Northern Fence Lizard. (*Sceloporus undulatus hyacinthinus*). Reported by a local resident.

905 Lucas Drive
Danville, Illinois

FLOWERING PLANTS

Maxine Thacker

Only flowers not found at Thornwood in 1953 and 1958 are listed in this report. For the complete list see Foray reports for those years. The 1958 report contained 482 plants including 59 grasses, 35 sedges and 4 rushes. Many of these were identified by Floyd Bartley.

The additional plants found this year (1964) are listed at the end of this article. Especially impressive were the showy masses of Goat's Beard, Purple Fringed Orchids and the Round-leaved Orchis. Several large clumps of Fraser's Sedge, past blooming, were seen along the road to Gaudineer Knob. On the Spruce Knob to Spruce Lake road Monk's Hood, Pink Corydalis and Oak Fern were found. Along the highway near the Blister Pine swamp it was interesting to see the marker referring to the visit of Asa Gray, the famous botanist, to the area.

IRIDACEAE	The Iris Family
Sisyrinchium mucronatum	Michaux's Blue-eyed Grass
ORCHIDACEAE	The Orchid Family
Habenaria flaya	Green Wood Orchis
Cypripedium acaule	Moccasin Flower
RANUNCULACEAE	The Crowfoot Family
Aconitum sp.	Monk's Hood
Delphinium exaltatum	Tall Larkspur
FUMARIACEAE	The Fumitory Family
Corydalis glauca	Pink, or Pale, Corydalis
ROSACEAE	The Rose Family
Potentilla tridentata	Three-toothed Cinquefoil
LEGUMINOSAE	The Pulse Family
Lotus corniculatus	Bird's-foot Trefoil
Coronilla varia	Coronilla

DuPont High School, Belle, W. Va.

MAMMALS RECORDED DURING THE 1964 FORAY

Jeff Lightburn

The following list is the result of trapping in the vicinity of Camp Pocahontas, Pocahontas County, West Virginia and field observations by campers in the area during the week. Fifty traps were run nightly in selected locations. Sight records and dead animals on the road helped determine the relative abundance of certain species. Members of a study class learned the basics of collecting mammals and preparing study skins of them. Assisting in the projects were Chuck Hammerschmitt, Dick Pyles, Jim Lightburn, Bill Worthley, Buzz Greenlee, Tom Greenlee, David Greenlee and Curt Doerr.

SHREWS

1. Short-tailed Shrew. (*Blarina brevicauda kirtlandi*). Common in wooded areas. One taken with a baited trap.
2. Smoky Shrew. (*Sorex fumeus*). One observed on an early morning walk.

BATS

1. Little Brown Bat. (*Myotis lusifusus*). Several observed. One collected.
2. Big Brown Bat. (*Eptesicus fuscus*). Several observed.
3. Red Bat. (*Laisurus borealis*). One was seen.

RODENTA

1. Deer Mouse (*Peromyscus maniculatus*). Also called Whitefooted Mouse. Several were caught.
2. House Mouse. (*Mus musculus*). Two were caught in the dormitories.
3. Eastern Chipmunk. (*Tamias striatus*). Fairly common. Several were trapped.
4. Meadow Mouse. (*Microtus p. pennsylvanicus*). Two were collected.
5. Woodchuck. (*Marmotamonax*). Don Shearer brought a female. Others were seen.
6. Eastern Gray Squirrel. (*Sciurus carolinensis*). A few were seen.
7. Eastern Red Squirrel. (*Tamiasciurus hudsonicus*). Smallest tree squirrel. It was very common in the area.
8. Eastern Fox Squirrel. (*Sciurus niger*). Several were reported.
9. Eastern Flying Squirrel. (*Glaucomys volans*). Reported near camp.
10. Eastern Harvest Mouse. (*Reithrodontomys humilis*). One was collected.
11. Eastern Cottontail Rabbit. (*Sylvilagus floridanus*). Was seen by numbers of the campers.
12. Varying Hare. (*Lepus americanus*). Also called the snowshoe rabbit. It was seen on Burner Mountain by M. Weaver, H. Boecker and C. Conrad.
13. Beaver. (*Castor canadensis*). Reported by J. Lightburn, Shearers, K. Anderson, F. Ault and other campers.
14. Muskrat. (*Onadatrazibethicus*). Reported by M. Hammerschmitt and J. Lightburn.
15. Woodland Jumping Mouse. (*Napaezapus insignis*). One at the stone quarry above camp by Dr. Van Eck.
16. Southern Wood Rat. (*Neotoma floridana*). One was found in the stomach of the male Timber Rattlesnake which was collected.

CARNIVORES

1. Black Bear. (*Ursus americanus*). A young cub was seen by one of the campers. Hammerschmitt and Lightburn found tracks on Burner Mountain.
2. Raccoon. (*Procyon lotor*). Tracks were seen in several places and C. Miller, M. Thacker and others saw one on the road to Blister Swamp.

CAT FAMILY

1. Bobcat. (*Lynx rufus*). Tracks were seen by J. Lightburn and R. Langdale-Smith reported seeing one on Forest Road #14.

WEASEL FAMILY

1. Mink. (*Mustela vison*). Hammerschmitt saw one at the ford on Slaven Hollow Road.
2. Striped Skunk. (*Mephitis mephitis*). G. Phillips and P. Temple saw one on the road to Burner Mountain.

DOG FAMILY

1. Red Fox. (*Vulpes fulva*). One was seen on the Burner Mountain Study area.
2. Gray Fox. (*Urocyon cinereoargenteus*). Sight records by Boechers, Lightburn and Ruth Hemmerle.

HOOFED ANIMALS

1. White-tailed Deer. (*Odocoileus virginianus*). Reported by Hammerschmitt, J. Lightburn, B. Murphy, P. Temple and the Ballentines.

MARSUPIALS

1. Opossum. (*Didelphis marsupialis*). One camper and a local resident each reported seeing one.

905 Lucas Drive, Danville, Illinois.

FERNS AND FERN ALLIES

John Laitsch, Floyd Bartley, Mrs. Harold Burtt

The following ferns are additions to the 1958 Foray listings for the Thornwood area. Studies were carried out in the usual manner and a specimen of each new species was collected. A correction should be made in the 1958 report where *Athyrium angustum* should be *Athyrium asplenioides* (Southern Lady Fern).

Athyrium pycnocarpon. Narrow-leaved Spleenwort.

Athyrium thelypteroides. Silvery Spleenwort, cut-leaf form.

Athyrium asplenioides F. *subtripinnatum*, Southern Lady Fern, lacy form.

Athyrium asplenioides F. *ellipticum*. Southern Lady Fern, small form.

Botrychium matricariaefolium. Daisy-leaf grape fern.

Botrychium lanceolatum, var. *angustisegmentum*. Lanceolate Grape Fern.

Gymnocarpium dryopteris. Oak Fern.

Matteuccia pennsylvanica. Ostrich Fern.

Thelypteris palustris. Marsh Fern.

Equisetum hyemale. Scouring Rush.

Selaginella rupestris. Rock Spike (moss)

Lycopodium tristachyum. Ground Cedar or Slender Ground Pine.

MC 21

East Liverpool, Ohio

MOSSES AT THE 1964 FORAY

Harold E. Burtt

The moss project at the 1964 Foray was conducted in the usual fashion. The procedure was described fully in the 1963 Foray report and will not be repeated in detail here. Suffice it that we devoted most of our Foray time to collecting in the field and listed for local publicity only species that we were able to identify expeditiously. Then I took home a large boxfull of specimens and spent quite a bit of the summer time studying them under a microscope. Bartley helped with some dubious specimens which I sent him. This year we had a third bryologist who was in the field the first part of the week and subsequently did considerable home work. The assistance of Miss Betty Fisher is hereby gratefully acknowledged. She contributed a goodly number of species which otherwise would not have appeared in our list.

The table lists all the species found at the 1964 Foray. The bryologist usually is concerned with the mere presence of a species in an area and not with its frequency. As usual the mosses are listed in the table under families (in capitals) in the conventional family sequence used in most manuals. Under family they are alphabetical by genus and under genus are alphabetical by species. Only the scientific names are given. Very few mosses have English names. In a few cases an alternate name is listed. The taxonomists do persist in changing things around.

As to the overall results we collected 115 species in 57 genera. Our best previous performance was 89 species in 1963 in Pendleton County. The increase may be due to the territory or to the enlarged personnel. There is considerable similarity in the ecology of Pendleton and Pocahontas Counties so major differences in results would not be expected. Actually Bartley and I collected only a few more species this year than last. This suggests that the principal variable was personnel. Even three people cannot cover all the ground in a 15 mile circle but they are a lot better than two people.

The 1963 report tabulated the species for the four years 1960-1963. It does not seem worth while to present this table again and the reader is referred to the 1963 report in connection with the following discussion. Twenty species were found in all five years. These are the identical ones that appear all four times in the 1963 table. All of them were found this year. They are the generally common mosses and all but three can be recognized in the field. It begins to look as if these species are "state-wide".

On the other hand 29 of the species were "new" in the sense that we had not collected them in any previous Foray. These species are starred in the table. Some of them are universally rare and seldom found anywhere, e.g. *Andreaea rothii* and *Paludella squarrosa*. We were lucky. On the other hand some are fairly common elsewhere but we did not manage to find them until this year, e.g. *Dicranum montanum* and *Mnium punctatum* var. *elatum*.

Then there are a few that appeared in three previous Forays but not this year for some reason, such as *Polytrichum piliferum* and *Leskeia polycarpa*. And of course there are many that appeared at least once before but not this year.

A few possible trends may be noted by considering this year's table along with that in the 1963 report. The sphagnums (peat moss) were found only in Preston County until this year when we evidently got into another bog. The haircap family (Polytrichaceae) does fairly well generally except for its *Pogonatum* genus which was absent the last two years. It grows in bare clayey soil and perhaps things had not been denuded hereabouts. *Fissidens* species were scarce from '61 to '63 but

picked up in '64. The Dicranums are always with us as is true elsewhere.

Gymnostomum was found only in '62 until one species appeared this year. It grows on wet cliffs, usually limestone, which are not very prevalent in our areas. In 1960 we had a considerable number of *Bryum* species and likewise this year but with a meager showing in between. The big *Hypnum* family did very well the last two years. Three of the Anomodonts appear consistently year after year—here and in most places.

In last year's report we presented a rather inconclusive analysis of species we had found in West Virginia that were rare for this part of the country in the sense that they were not listed for Ohio or for Western Pennsylvania or both. We might look at the species that were new for us this year in West Virginia with reference to whether or not they occurred in the other two areas. Four of our new ones are not listed for Ohio although they are present in Western Pennsylvania, viz. *Oncophorus wahlenbergii*, *Hylocomium squarrosum*, *Thuidium abietinum* and *Hypnum cupressiforme* var. *filiforme*. One of ours is missing in Pennsylvania although present in Ohio viz., *Orthotrichum anomalum*. Three of our new species are absent in both Ohio and Pennsylvania viz., *Paludella squarrosa*, *Leskeia nervosa* var. *nigrescens* and *Leskeia polycarpa* var. *paludosa*.

For only two of the foregoing species do we have any satisfactory explanation of their distribution. *Oncophorus wahlenbergii* is "usually in mountains" according to Jennings, and Ohio has no mountains while the other areas do. Incidentally Grout mentions Ohio as having this species but Giesy could not find it in any of the herbaria of the state and lists it under "doubtful". *Paludella squarrosa* according to Grout is frequent in Arctic-Alpine regions but comes south to Vermont and New York. It would seem that we are south of its range and our specimen is a real "find". In this respect we are more fortunate than Ohio or Pennsylvania. *Leskeia polycarpa* var. *paludosa* is "more common in the Northwest" but there is no obvious reason why it should skip Ohio and Pennsylvania and come to West Virginia. With reference to the remaining species there is nothing as to habitat or distribution mentioned in the manuals that will throw light on our results.

As time goes on we shall accumulate a goodly moss list for the state. It is upwards of 190 at the moment but still far behind the 331 for Ohio or the 286 for Western Pennsylvania. Give us time! But the bryophytes will doubtless outlast the bryologists. The former have been around since the Silurian some 350 million years ago and the latter only since about 1890. The list would also build up more rapidly if mosses were more conspicuous and more accessible.

SPHAGNACEAE

Sphagnum capillaceum

TETRAPHIDACEAE

Tetraphis pellucida

ANDREAEACEAE

**Andreaea rothii*

POLYTRICHACEAE

Atrichum angustatum

Atrichum crispum

Atrichum undulatum

Polytrichum juniperinum

Polytrichum ohioense

FISSIDENTACEAE

Fissidens cristatus

**Fissidens minutulus*

Fissidens esmundioides

DITRICHACEAE

Ceratodon purpureus

Ditrichum pusillum

DICRANACEAE

Dicranella fitzgeraldi

Dicranella heteromalla

Dicranella rufescens

Dicranella varia

Dicranum flagellare

Dicranum fulvum

*DICRANUM

Dicranum montanum

Dicranum rugosum

Alt: *D. undulatum*

Dicranum scoparium

*ONCOPHORUS

Oncophorus wahlenbergii

LEUCOBRYACEAE

Leucobryum glaucum

ENCALYPTACEAE

**Encalypta streptocarpa*

BUXBAUMIACEAE

Webera sessilis

Alt. *Diphyscium foliosum*

POTTIACEAE

Barbula fallax

Barbula unguiculata

Gymnostomum calcareum

Weisia viridula

GRIMMIACEAE

Grimmia apocarpa

Hedwigia ciliata

FUNARIACEAE

**Funaria flavicans*

Funaria hygrometrica

**Physcomitrium turbinatum*

ORTHOTRICHACEAE

**Orthotrichum anomalum*

Orthotrichum ohioense

**Orthotrichum stellatum*

Ulota americana

Ulota crispa

AULACOMNIACEAE

Aulacomnium palustre

BARTRAMIACEAE

Bartramia pomiformis

Philonotis fontana

MEESIACEAE

**Paludella squarrosa*

BRYACEAE

Bryum argenteum

Bryum bimium

Bryum capillare

**Pohlia annotina*

Pohlia nutans

Pohlia wahlenbergii

Alt: *Mniobryum albicans*

Rhodobryum roseum

MNIACEAE

Mnium affine var. *ciliare*

Mnium cuspidatum

Mnium hornum

MNIUM

Mnium punctatum

**Mnium punctatum* var. *elatum*

HYPNACEAE

Amblystegiella confervoides

Amblystegium compactum

Amblystegium juratzkanum

Amblystegium kochii

Amblystegium riparium

Amblystegium serpens

Amblystegium varium

Brachythecium acutum

Brachythecium exycladon

Brachythecium reflexum

**Brynnia novae-angliae*

Calliergonella schreberi

Campylium chrysophyllum

Climaciump americanum

Climaciump kindbergii

Entodon cladorrhizans

Entodon seductrix

Eurhynchium serrulatum

Hygroamblystegium orthocladon

**Hygrohypnum eugyrium*

Hygrohypnum montanum

Hylocomium brevirostre

Hylocomium splendens

**Hylocomium squarrosum*

Hylocomium umbratum

**Hypnum crista castrensis*

Hypnum cupressiforme

**Hypnum cupressiforme* var. *filiforme*

Hypnum curvifolium

Hypnum fertile

Hypnum haldanianum

Hypnum imponens

**Hypnum molluscum*

Hypnum patientiae

Hypnum recurvans

Hypnum reptile

Plagiothecium denticulatum

**Plagiothecium elegans*

Platygrgium repens

Rhytidiodelphus triquetrus

Rhytidium rugosum

**Sematophyllum adnatum*

Alt: *Rhaphidostegium adnatum*

Sematophyllum carolinianum

Alt: *Rhaphidostegium carolinianum*

LESKEACEAE

Anomodon attenuatus

Anemodon minor	*Thuidium scitum
Anomodon rostratus	Thuidium virginianum
*Leskeia nervosa var. nigrescens	LEUCODONTACEAE
*Leskeia polycarpa var. paludosa	Leucodon julaceus
*Thelia asprella	FABRONIACEAE
Thelia hirtella	*Anacamptodon splachnoides
*Thuidium abietinum	*Schwetschkeopsis denticulata
Thuidium delicatulum	FONTINALACEAE
Thuidium recognitum	Fontinalis dalearcarlica

REFERENCES

- Giesy, Robert M., Studies in Ohio Bryophytes
Ohio Journal of Science 57, 290-312 (1957)
- Grout, A. J., Mosses with Hand Lens and Microscope, New York. Published by the author 1903.
- Jennings, O. E., A Manual of the Mosses of Western Pennsylvania and Adjacent Regions. University of Notre Dame Press, South Bend, Indiana 1951.

CLIMATIC REPORT

Date	Time	Temp. Humidity	Weather Condition
Sun.	9:00 A.M.	77°	Light shower, slight breeze.
June 14	12:00 Noon	74°	Light shower
	6:00 P.M.	76°	Clearing, no wind—total rainfall 0.1 inch
Mon.	6:00 A.M.	74°	52%
June 15	12:00 Noon	76°	Wind 2½ mph from south
	6:00 P.M.	58°	Overcast 0.2 inch of rainfall. Calm.
Tues.	6:00 A.M.	54°	70% Rain 0.9 inch. Calm.
June 16	12:00 Noon	58°	Wind from the n.e., calm to 5 mph.
	6:00 P.M.	60°	Light breeze from s.w.
Wed.	6:00 A.M.	39°	45% Calm and clear.
June 17	12:00 Noon	70°	35% Slight breeze. Clear.
	6:00 P.M.	62°	30% Clear and calm.
Thurs.	6:00 A.M.	40°	65% Cloudy. Calm.
June 18			Sunshine during the day.
	6:00 P.M.	72°	52% Cloudy. Calm.
Fri.	6:30 A.M.	62°	73% Raining.
June 19			
	6:00 P.M.	72°	49% Rain gage full.
Sat.	A.M.	58°	70%
June 20	12:00 Noon	79°	41% Trace. Winds up to 5
	6:00 P.M.	76°	43% mile from west.



FIELD NOTES

Mrs. Nevada Laitsch, Editor
MC 21, East Liverpool, Ohio

Contributions Due

Winter Season (Dec. 1-Feb. 28) . . Mar. 15
Spring Season (Mar. 1-May. 31) . . June 15
Summer Season (June 1-Aug. 31) . Sept. 15
Fall Season (Sept. 1-Nov. 30) . . Dec. 15

The Winter Season was unusually mild. There were no prolonged periods of extreme cold and streams and lakes remained open most of the time. The snowfall was sparse and did not remain on the ground at any one time more than two or three days. Rainfall was about normal.

Most reporters complained that this was a dull season birdwise. There was no invasion of northern species. The most exciting event of the winter was the appearance of Harris Sparrows at Morgantown, W. Va. and Barnesville, Ohio.

Loons, Grebes and Herons—A **Common Loon** was recorded at Lake of the Woods in Preston County, W. Va. on December 6 (GAH) and at Chesapeake, Ohio Feb. 2 (TI). **Horned Grebes** were on Lake of the Woods, Preston County, W. Va. on Dec. 6 and Feb. 28 (GAH). Two **Pied-billed Grebes** were seen near Zanesville, Ohio, on Jan. 2 (VTS). Two **Great Blue Herons** were listed regularly on the Ohio River at Wheeling, W. Va. during the winter (CC) and one was recorded at Winfield, W. Va. (Putnam County) Dec. 22 (CK).

Waterfowl—Small flocks of **Canada Geese** were reported from several areas. 182 were listed on the Youngstown, Ohio Christmas count. The wintering population at the McClintic Wildlife Station near Pt. Pleasant, W. Va. was considered good and included at least one **Snow Goose** and two **Blue Geese**. A **Snow Goose** wintered on the Olentangy River at Columbus, Ohio (MT). **Mallards** and **Black Ducks** were present in fairly good numbers. **Gadwalls** were recorded at the McClintic Wildlife Station near Pt. Pleasant, W. Va. Dec. 26 (TI) and on the Sciota River at Columbus, Ohio Jan. 1 (MT). **Pintails** and **Green-winged Teal** were reported on these dates at these same locations. 10 **American Widgeons** were seen at McClintic Wildlife Station near Pt. Pleasant, W. Va. Dec. 26 (JS). Two **Shovelers** were observed at the Hebron fish hatchery in Licking County, Ohio on Feb. 14 (VTS). **Redheads** appeared in good numbers. Rafts numbering in the hundreds were seen in Muskingum County, Ohio in February (VTS) and large numbers were in the Sciota River bottomlands north of Portsmouth, Ohio during the month

(MT). Some 250 were banded at the McClintic Wildlife Station near Pt. Pleasant, W. Va. between Feb. 19 and March 1 (COH). Smaller groups were reported in other locations. **Ring-necked** and **Canvasbacks** figured in several reports. 3 **Greater Scaup** were on Lake of the Woods, Preston County, W. Va. Dec. 6 (GAH) and **Lesser Scaup** were first seen in Preston County on Feb. 14. **Common Goldeneyes** were still present at the end of the season. A pair of **Barrow's Goldeneye** was observed in the Muskingum River about five miles south of Zanesville, Ohio on Jan. 31 (VTS). **Buffleheads** were listed sparingly in several reports. The appearance of 3 **Oldsquaw** and 3 **White-winged Scoters** at Lake of the Woods, Preston County, W. Va. on Dec. 6 was unusual (GAH). A **Surf Scoter** was at Hoover reservoir northeast of Columbus, Ohio Mar. 1 (HB).

Hawks—More than usual numbers of hawks were reported to be wintering in the region. **Red-tailed** seemed to be the predominant species. **Red-shouldered Hawks** were fairly common around Charleston, W. Va. (AS&NG). 5 **Rough-legged Hawks** were listed on the Youngstown, Ohio Christmas count (ED) and one was seen in Perry County, Ohio Feb. 14 (VTS). A **Bald Eagle** was reported at Portsmouth, Ohio (MT) and one was seen at fairly close range along the Ohio River north of Wheeling, W. Va. Dec. 30 (CC). **Marsh Hawks** wintered in suitable habitat in Ohio and 2 were reported at McClintic Wildlife Station near Pt. Pleasant, W. Va. (JS). **Peregrine Falcons** were found near Ashton, Mason County, W. Va. Dec. 26 and across the Ohio River on Ohio Route 7 on Dec. 27 (TI). 2 were observed near Portsmouth, Ohio Jan. 17 (MT). **Sparrow Hawks** were considered plentiful.

Grouse, Bobwhites and Pheasants—**Ruffed Grouse** enjoyed a good population in the Tri-state area of Hancock County, W. Va., Beaver County, Pa. and Columbiana County, Ohio (ERC&NL). 8 were listed on the Christmas count at Wheeling, W. Va. (CC) and Wayne Bailey fide (COH) found them feeding in multiflora hedges on several occasions in Pocahontas County, W. Va. A covey of 14 **Bobwhites** was noted in Coonskin Park, Charleston, W. Va. Jan. 4 (NG). 26 **Ring-necked Pheasants** were listed on the Youngstown, Ohio Christmas count (ED).

Shorebirds—A few **Killdeer** wintered in the region. **Woodcock** first appeared at Charleston, W. Va. on Jan. 20 and were plentiful in the latter part of February (AS). A good population of wintering **Common Snipe** was reported in the eastern panhandle of West Virginia (CM). A **Dunlin** was listed on the Christmas count in Berkeley County, W. Va. (CM).

Gulls, Doves and Owls—**Herring** and **Ring-billed Gulls** appeared occasionally on the Ohio River during the winter. **Mourning Doves** were considered plentiful by most reporters. 2 **Great Horned** and 2 **Barred Owls** were listed on the Youngstown, Ohio Christmas count and both **Screech** and **Barred Owls** were considered in normal numbers in the Huntington, W. Va. area. A **Snowy Owl** was seen on Jan. 14 about eight miles north of East Liverpool, Ohio by Robert Klubert fide (NL). Several were reported wintering near Columbus, Ohio (HB). A **Saw-whet Owl** was observed at the McClintic Wildlife Station near Pt. Pleasant, W. Va. on Dec. 26 (TI).

Woodpeckers—More **Flickers** than usual were reported to have wintered in the region and other woodpeckers appeared to be in normal numbers.

Chickadees, Titmice and Wrens—**Black-capped Chickadees** were not reported out of their normal range. The **Carolina Chickadee** population appeared good. **Red-breasted Nuthatches** and **Brown Creepers** were extremely scarce. A **Winter Wren**

was listed on the Charleston, W. Va. Christmas count and listed in January near East Liverpool, Ohio (ERC). **Carolina Wrens** appeared in most reports were not listed as common by anyone.

Mimics and Thrushes—**Mockingbirds** continue to increase as a wintering species especially in the southern part of the region. A **Catbird** was banded at Wheeling, W. Va. on Feb. 4 (EV). 3 **Brown Thrashers** were listed on the Charleston, W. Va. Christmas count. **Robins** wintered in great flocks throughout the region. On Jan. 20 flocks totaling 3000 or more were seen on top of Shavers Mountain in Randolph County, W. Va. fide (COH) and Jan. 28 estimated flocks of 2500 were seen feeding in Pocahontas County, W. Va. Only one **Hermit Thrush** was found on the Charleston, W. Va. Christmas count and the only other record submitted was a single at Wheeling, W. Va. (CC). **Bluebirds** appear well on their way back to normalcy.

Kinglets and Waxwings—Both **Golden-crowned** and **Ruby-crowned Kinglets** were scarce. **Cedar Waxwings** appeared to be in normal numbers.

Warblers—Some **Myrtle Warblers** wintered in the region but reporters complained that they did not frequent the feeders. A flock of about 150 was seen several times in a swampy area containing an abundance of poison ivy berries near Charleston, W. Va. (AS&NG). 5 **Pine Warblers** frequented a feeding station in the South Hills section of Charleston, W. Va. during late December and early January (CK). One was observed at Huntington, W. Va. on Jan. 6 (TI). A **Palm Warbler** was reported near Wheeling, W. Va. on Dec. 30 fide (CC).

Meadowlarks and Blackbirds—**Eastern Meadowlarks** were listed on Christmas counts at Charleston, W. Va., McClintic Wildlife Station near Pt. Pleasant, W. Va. and at Youngstown, Ohio. Some **Red-winged Blackbirds**, **Grackles** and **Rusty Blackbirds** wintered in the region and large flocks were appearing in late February. There were several reports of **Cowbirds** remaining throughout the winter.

Finches and Sparrows—There were a few scattered reports of **Evening Grosbeaks**. Three were seen at Huntington, W. Va. on Jan. 26 (TI); about 15 at St. Marys, W. Va. on Feb. 20 (DS) and a flock of about 40 stopped for an hour on one occasion near Wheeling, W. Va. in February (CC). **Purple Finches** failed to show up in numbers and were completely absent in the northern part of the region. Small flocks visited feeders in Charleston in January (DS). **Pine Siskins** were even less common. **Rufous-sided Towhees** wintered in fair numbers. They were considered fairly common in the Charleston, W. Va. area (NG, CK & AS); 3 appeared regularly at a feeder at Wheeling, W. Va. and they were listed several times at East Liverpool, Ohio. **Slate-colored Juncos** were considered plentiful by most reporters. An **Oregon Junco** appeared at a feeder at Willoughby, Ohio (MS). **Tree Sparrows** appeared normal in most areas with exceptions being Morgantown, W. Va. where they were very scarce (GAH) and Wheeling, W. Va. where they were below normal (CC). 31 **Field Sparrows** were listed on the Charleston Christmas count and they were listed regularly at East Liverpool, Ohio (NL). Unusual was the appearance of **Harris Sparrows** both in West Virginia and Ohio. A second year adult male **Harris Sparrow** appeared at Maurice Brook's feeder at Morgantown, W. Va. in January and was still present at the end of the period fide (GAH). On December 18 an immature **Harris Sparrow** was banded by Mabel Edgerton at Barnesville (Belmont County), Ohio. It was still there through February. Three **White-crowned Sparrows** wintered at Clarksville, Pa. (RKB). **White-throated Sparrows** were considered plentiful at the McClintic Wildlife Station near Pt. Pleasant, W. Va. and normal in the southern part of the region. Two **Fox Sparrows** were listed near

East Liverpool, Ohio on Jan. 1 (ERC&NI). Song Sparrows were considered plentiful by most observers.

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DATA. The actual results of the investigation along with the methods used for collecting the information.

CONCLUSIONS. Interpretation of the data.

FUTURE WORK. As a result of the investigation, what work remains to be done.

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