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This paper constitutes a progress report, prompted by the current interest of ornithologists in the comparatively recent discovery that Swainson's warbler (Limnothlypis swainsonii) is not restricted as a breeding bird to the cane swamps of the Atlantic Coastal and Gulf regions, of a concentrated study of the species in West Virginia, particularly in Kanawha county where it is a common breeding bird.

Swainson's warbler was first established as a summer resident in West Virginia through the careful work of Legg in Nicholas county in 1939 and 1940 (Brooks and Legg 1942). Previous to this time, two isolated records for the species, one from Monongalia county (Bibee 1934) and the other from Lincoln county (Netmore 1937), were insufficient to establish the bird as a summer resident. During the past seven years considerable effort on the part of local observers has been spent in determining the breeding range of Swainson's warbler in the state. The known range has been extended from Nicholas to Webster, Upshur, Braxton, Fayette and Kanawha counties, a more or less continuous territory at the southwestern edge of the Allegheny plateau.

It was in June 1943 that the junior author of this paper saw birds in Kanawha county which he believed to be Swainson's warblers. The following spring, more intensive field work definitely established the bird as a common inhabitant of the forested slopes bordering the Great Kanawha river in the immediate vicinity of Charleston (Handlan 1944). About this time there was organized in Charleston a local chapter of the Brooks Bird Club. The excellent opportunity afforded the group to undertake a study of Swainson's warbler made the selection of such a project a natural course of action. It is unnecessary to add that it has remained so to this day. Many of the data have been assembled through the cooperative efforts of the various members of the club.

In spite of the comparative abundance of the bird in many sections of the state, it was not until May 14, 1945 that the senior author found the first occupied nest for the species in West Virginia (Sims 1946). During the same summer, discovery of two additional nests was made in Nicholas county by Legg (Legg 1946). Through the summer of 1946 a series of six nests was found by Sims and during the past summer (1947) a total of eleven nests was under observation. This paper is, therefore, largely based on observations of this series of eighteen nests of Swainson's warbler in Kanawha county, all located in one ravine, the watershed of Donley branch.

Description of the Kanawha County Area - The area in Kanawha county within which the greater part of the study has been conducted is a small territory southeast of Charleston. It comprises, for the most part, drainages of Jenkin's branch, Chappel branch, and Donley branch, small tributaries which flow directly into the Great Kanawha river. Here, the river, which dissects Kanawha county, flows in a generally northwesterly direction. The terrain is broken into a series of narrow deep V-shaped valleys and narrow hogback ridges. The elevation ranges from 608 feet at the lowest point to about 1250 feet along some of the higher ridge tops.
Outcropping stratified rocks are chiefly of the upper Pottsville and Allegheny series with small amounts of those of the Conemaugh series along some of the ridges. Soil series are, for the most part, Holston silt loam along the narrow valleys, Dekalb silt loam on the slopes, and some Dekalb stony silt loam at higher elevations.

The lower Kanawha valley is one of the warmest sections of the state. The mean annual temperature is 53\(^\circ\) F. The annual rainfall is slightly higher than the average for the state, 42.33 inches.

Aspects of the Habitat - A comparison of the various habitats within the range of Swainson's warbler is in many respects a study within itself. When first discovered in Nicholas county it was supposed that in West Virginia the species was closely associated with evergreen tangles of rhododendron (Rhododendron maximum), mountain laurel (Kalmia latifolia), hemlock (Tsuga canadensis) and American holly (Ilex opaca). In such locations the bird seldom ranges far from a stream, even though such stream may be small or provide only a temporary source of water. The overstory in many such localities is fairly open, at times made up of such cove hardwood species as red maple (Acer rubrum), tulip (Liriodendron Tulipifera), Fraser's magnolia (Magnolia Fraserti) and black birch (Betula lenta); but in other areas it comprises components of an oak-hickory association, namely, white oak (Q. borealis), hickory (Hicoria) and black gum (Nyasa sylvatica). On June 28, 1947, the junior author heard a Swainson's warbler singing along William's river in Webster county at an elevation of 2700 feet (DeGarmo 1947). Here there was the characteristic evergreen thicket bordering the stream, but the overstory was a dense young growth of northern hardwoods made up of such species as black birch, yellow birch (Betula lutea), sugar maple (Acer saccharum), striped maple (A. pennsylvanicum), hemlock, and Fraser's magnolia.

This type of habitat is in many respects a direct contrast with that in which the bird is common in the Charleston area. At no point in Kanawha county has it yet been found associated with the type of ground cover previously described. Here there are no rhododendron thickets, yet there is, in the opinion of the authors, a direct relationship between the two types of habitat and that they are ecologically similar. The bird is most abundant along the wooded slopes and ravines in which the major tree species are tulip, sweet gum (Liquidamber styraciflua), elm (Ulmus americana), sugar maple, red maple, black gum, beech (Fagus grandifolia), oak (Quercus velutina), white oak, magnolia (Magnolia tripetala), walnut (Juglans nigra) and occasional clumps of pine (Pinus virginiana and P. rigida). The understory is usually fairly dense, varying considerably in its composition. In addition to seedlings of the previous species, there occur commonly such shrubs or low growing trees as spice bush (Benzoin aestivale), ironwood (Carpinus caroliniana), pawpaw (Asimina triloba), hydrangea (Hydrangea arborescens), greenbrier (Smilax rotundifolia and S. glauca), grape (Vitis), honesuckle (Lonicera japonica), bittersweet (Celastrus scandens), sourwood (Oxydendrum arboreum), dogwood (Cornus florida) and maple-leaved viburnum (Viburnum acerfolium). The ground vegetation is in most instances sparse but such species as Christmas fern (Polystichum acrostichoides), jewelweed (Impatiens pallida), pokeweed (Phytolacca decandra), stonecrop (Sedum), aster (Aster), wood nettle (Laporta canadensis), sweet cicely (Osmorhiza) and wild yam (Dioscorea villosa) occur in varying degrees of abundance.

Swainson's warbler is not in any sense confined in its distribution to the lower slopes but occurs regularly up to, or just under, some of the ridge tops.
Wherever the bird is found, however, it is always closely associated with some type of thicket growing under the forest canopy. This thicket is typically largely of greenbrier, yet may contain grape, honeysuckle, blackberry (Rubus), or bittersweet. These thick growths, though largely deciduous, undoubtedly provide a basic requirement of the habitat just as does a cane swamp or a rhododendron tangle.

The authors are also inclined to believe that, at least in West Virginia, the presence or absence of water, even of a temporary nature, is important to Swainson's warbler only to the extent to which it influences the growth of vegetation resulting in the formation of suitable cover. The occurrence of the birds in dense growths of the chestnut sprout association as recorded by Brooks and Legg in Nicholas county and the consistency with which it is found in the thickets along ridge tops in Kanawha county both point to this conclusion.

Other species of birds associated with Swainson's warbler in Kanawha county are not too different from those recorded in Nicholas county. Nine species of warblers recorded in an area on which brief population studies were conducted during the past summer were black and white (Mniotilta varia), worm-eating (Helmitheros vermivorus), cerulean (Dendroica cerulea), oven-bird (Seiurus aurocapillus), Kentucky (Oporornis formosus), yellow-throat (Geothlypis trichas), yellow-breasted chat (Icteria v. virens), hooded (Wilsonia citrina) and American redstart (Setophaga ruticilla). Other birds common on the same area were Acadian flycatcher (Empidonax virescens), red-eyed vireo (Vireo olivaceus), towhee (Pipilio erythropthalmus), scarlet tanager (Piranga olivacea), summer tanager (P. rubra rubra) and wood thrush (Hylocichla mustelina).

Behavior

Migration - Since first noted in Kanawha county in 1944, Swainson's warbler has shown a remarkable regularity in its arrival each spring. First arrivals have been recorded as follows: 1944, April 23; 1945, April 15; 1946, April 23; and 1947, April 17. These arrivals cover an interval of only eight days. The bird arrives in full song, singing regularly and frequently, causing one to wonder how such a remarkable songster could have escaped for so long the attention of ornithologists in so many of the areas in which it is now common.

We do not yet know exactly when the bird leaves in the fall; but during the summer of 1946, singing males were heard briefly in early mornings as late as September 15.

Territory - We have not yet fully established the nature and extent of the territory of the male bird, but from all appearances it is rather extensive for that of a warbler. The male selects a number of singing perches, usually at a height of from ten to fifteen feet, from which he sings for long intervals in an absorbed manner. At such times he can be easily approached, appearing to show little fear in the presence of peering eyes. Singing of the male, however, is not restricted to perches, as the bird often sings while traveling through the dense undergrowth.

Legg (1946) has described a bird's territory in the Nicholas county area as something like 200 feet long and 150 feet wide. In the deciduous woodlands of the Charleston area this territory appears to be considerably larger - birds having been noted singing consistently at distances of 300 feet from the nest. The territory appears to cover an area with a diameter of at least 400 feet.
In respect to the location of the nest, the male Swainson's warbler is much like the prothonotary warbler (Protonotaria citrea) in that no birds have been heard singing within 100 feet of the nest. There is undoubtedly much of interest to be learned in a study now being planned in an effort to determine the size and nature of the territory of Swainson's warbler.

Nesting - Nest construction for at least some mated birds begins within two weeks after the first birds arrive on their breeding grounds. The nest, as has been described, is a loosely constructed affair, usually with a base of dead leaves interwoven in a more or less haphazard fashion. Several nests examined contained leaves of birch, maple, sourwood, beech and wild cherry (Prunus serotina). The base of one especially bulky nest contained a number of magnolia leaves. Now and then, a coarse stem of a dead weed is woven into the base. There is then added a rather compact layer of partially decomposed and skeletonized leaves which fit closely and form, in some respects, the outer lining of the nest. The inner lining is usually of young green grass, although that of one nest was of needles of scrub pine.

For its nesting site in deciduous woodlands of the Charleston area, the Swainson's warbler departs considerably from its habit of frequenting the densest tangles. Of all those examined, not a single nest was located in the midst of a thicket, yet all conformed to a very definite pattern. Of the eighteen nests, ten were in small clumps of greenbrier, two in spicebush and one each in flowering dogwood, honeysuckle, sassafras (Sassafras variifolium), sourwood and in a cross formed by small branches of elm and black birch. The lowest nest was at a height of two feet - the highest at eight feet. The majority were at heights of three to five feet. When greenbrier is chosen as the nesting site, it is no extensive growth, but usually a small vine trailing over a bush or suspended at the base of a tree. Upon carefully studying the series of nesting sites, it became increasingly apparent that the bird avoids placing the nest in dense cover, yet in all instances, a patch of some type of such cover is within a distance of twenty-five to fifty feet. In many cases, this thicket is a growth of greenbrier but may be grape, honeysuckle, blackberry or bittersweet. There appears to be a definite effort to locate the nest in such a manner that it is in close proximity to a screen of protective cover. In two sites, this cover was at least partially provided by the thick branches of fallen trees within a few feet of the nest. The patch of honeysuckle in which one nest was located, at a height of two feet, was low growing and only about ten feet in diameter, yet within thirty feet, was a very dense thicket of honeysuckle 100 or more feet in extent and growing to a height of fifteen or twenty feet. The forest canopy is usually rather open above the nest so that, at some time during the day, it is in partial sunlight. At times, the spot is more like a small woodland clearing with the exception of the more dense understory. There is a wide variation in the location of nests in respect to slopes and ravines, the nest sites extending from the top of the spur of a ridge to the bottom of a ravine, 300 feet below. There appears to be no definite choice of exposure so long as suitable habitat is present.

Egg Laying and Incubation - Once the nest is completed, there may elapse a period of several days before egg laying begins. One such instance was noted in a nest which was empty when discovered on May 10, 1947; nine days later on May 19, there were only two eggs; in another, a nest was found empty on May 1, 1947, and twenty-three days later the bird was still incubating. Once egg laying is started, it proceeds without delay - usually at the rate of one egg each day until the clutch of three or four white eggs has been completed. There may then be another delay before incubation is begun, as is evidenced by a nest discovered
on May 4, 1946, under construction at the time. On May 12, this nest contained three warbler eggs and one cowbird egg. The latter was removed on May 13. On May 14, another warbler egg had been added. A bird was on the nest when it was visited on May 15 and 16, yet the eggs did not hatch until May 30. This sixteen-day interval obviously was not entirely occupied with incubation, unless the incubation period is far in excess of the expected ten or eleven days.

To date, the authors have not been able to definitely determine the incubation period. While incubation is in process the bird, presumably the female, sits closely, often leaving only when an observer extends a hand toward the nest. She then drops quietly to the ground, sometimes feigning injury in the fashion of a mourning dove, and disappears in the underbrush. On only one occasion has an adult been observed to exhibit injury-feigning prior to having young birds in the nest.

When discovered near or at the nest, either bird will suddenly freeze and remain motionless. On May 14, 1946, the senior author visited a nest at 7:45 a.m. and found the female on the nest. For the next hour and fifteen minutes, the nest was kept under observation from three different locations. In the interval between moves, the incubating bird was noted to have changed position on the nest so as to keep the observer in view. At nine o’clock, the male flew to the rim of the nest. There, he froze into immobility, a position which was maintained for a full twenty minutes, then he quietly dropped to the ground and slipped away. This same trait was observed when adult birds were surprised at the nest while feeding the young.

The period of time required for the young birds to develop sufficiently to leave the nest, was rather closely established at ten days. During the last twenty-four hours of this time, the nestling changes in color from gray to brown and the eye stripe appears faintly at this time. During this period the parent birds have on two occasions attempted to lure the senior author from the nest site by injury feigning. Both birds are extremely wary at the nest; thus, it is almost impossible to observe feeding of the young unless it is from a carefully concealed spot. Both sexes feed the young and clean the nest.

In the course of the three years, three of the eighteen nests have been found to contain, in each instance, a single cowbird egg. One such nest was in honeysuckle at a height of two feet, another in greenbrier at three feet, and the other in sourwood at four feet.

**Nesting Success** – The pattern of nesting success in the eighteen nests, while in some instances subject to considerable doubt, is rather remarkable. The first nest found on May 14, 1945, was apparently successful. Of the six nests studied in 1946, five are believed to have successfully produced broods. In contrast to this high success ratio, it is doubtful if any of the eleven nests in 1947 was successful. Six nests were apparently broken up by predators, two disappeared completely; in two nests no eggs were ever found and one was deserted. It will be interesting as a result of this failure to note any possible change in abundance of the species in this region next year.

**Additional Problems**

The contents of this paper are suggestive of the fact that much is yet to be learned about Swainson’s warbler, particularly in West Virginia, but at the same time, are indicative of what can be accomplished by an organized group of amateur
bird students. The group is making plans for a continuation of the study in an effort to obtain much needed additional data.

It is, of course, important that the breeding range of the species be more carefully mapped. Recent work, extending the range to the Briston region of Virginia by F. M. Jones (Murray, 1939), Harlan and Letcher counties in Kentucky (Breiding, 1944) and Lawrence county in Ohio (Green, 1947) all suggest that this range is contiguous with the known range in West Virginia. Much of West Virginia, south of the Great Kanawha river, is terra incognito to the ornithologists; therefore, it is quite probable that the range of Swainson's warbler can be extended southward toward Kentucky and Virginia.

If the species is found south of Kanawha county, it will be interesting to determine the relationship of the bird to its habitat. The authors are of the opinion that even here, when available, the birds will make use of rhododendron thickets. The contrast between an evergreen thicket and a dense growth of greenbrier or grape, is striking and needs additional study. This study when extended to central West Virginia, could conceivably change our ideas of the habitat requirements of the species in these areas. In some sections of Kanawha county, there are areas which comprise components of both types of habitat. Will the species in such circumstances be found in both, or will a preference be exhibited?

Much more detailed work will be required of the bird at the nest. Of the eighteen nests thus far studied, none have been carefully followed from the beginning of construction to the successful rearing of young birds. The painstaking life history study will continue.

Plans are being made to undertake a rather careful study of territorialism in relation to the species. It is hoped that male birds can be captured and marked so as to chart their activities. This can produce much of value to our knowledge of the species.

It is, therefore, obvious that the material presented in this paper is, in reality, a progress report.

SUMMARY

1. Swainson's warbler (Limnothlypis swainsonii) is known as a summer resident in at least six counties in central and southwestern West Virginia.

2. In central West Virginia it is an inhabitant of evergreen thickets, but in Kanawha county it is abundant in deciduous woodlands containing tangles of greenbrier, grape, honeysuckle or bittersweet.

3. It appears that the presence of water is not an essential component of its habitat.

4. The birds arrive in full song from April 15 to April 23 and remain as late as September 15.

5. The territory of the bird is rather large - apparently at least 400 feet in diameter.

6. Notes are given on nest construction, nest sites and nesting activities.
7. Of the eighteen nests, a total of six are believed to have been successful.

8. Much additional study remains to be done on the breeding range and life history of the species in West Virginia.

Literature Cited

Bibee, P. C.

Brooks, Maurice and Legg, Wm. G.
1942. Swainson's Warbler in West Virginia. Auk. 59: 76-86

Breiding, George H.

Chapman, F. M.

DeGarmo, W. R.
1944. Spring Migration Record for Handlan Chapter of Brooks Bird Club. The Redstart (mimeo.), XI, no. 11: 66-68.

Green, N. Bayard

Handlan, John W.
1944. Notes of Swainson's Warbler in Kanawha County, West Virginia. The Redstart (mimeo.), XI no. 12: 70-72

Handlan, Polly and Frankenberg, Ted.
1942. Webster County, West Virginia Observations. The Redstart (mimeo.), IX nos. 10-11; 59-64

Legg, W. C.
1946. Swainson's Warblers' Nests in Nicholas County. The Redstart (mimeo.), XIII, Nos. 6-7: 24-25

Murray, J. J.
Shields, Louise
1945. Spring Migration, 1945
The Redstart (mimeo.), XII No. 11: 59-62

Sims, Eleanor.
1946. An Unusual Site for the Nest of Swainson's Warbler
Auk. 63: 93

Wetmore, Alexander
1937. Observations on the Birds of West Virginia

ACTIVITIES OF THE BROOKS BIRD CLUB

By Charles L. Conrad and James H. Olsen

Ed. Note: Many of our members, who were unable to attend the 1947 national meeting of the Wilson Ornithological Club, have asked that the papers read by B.B.C. members be recorded in The Redstart. Mr. Conrad and Mr. Olsen originally prepared this paper to be read simultaneously with selected slides, to depict the activities of our club, and have now rewritten the material for publication rather than oral presentation.

In this article we have outlined the studies made from 1940 to 1948 - in particular, our studies of living birds in their natural habitats. Of course, we are interested in specimens, textbooks, anatomy, etc., but our primary interest is the study of the living bird and its habitat. For the past 18 years members have been studying wild life and traveling to selected habitats to make these studies. We make many field trips during each year, but every year in the month of June we all get together for a week to camp in and study a selected area. This week of camping we call a Foray.

The Forays, properly, were begun in 1940 when the club sponsored its own studies instead of participating in the work sponsored by Oglebay Institute in Wheeling, W. Va. There are members of the club who are not bird students, but have their other preferences in the study of the out-of-doors; others are excellent bird students, but also have a specialized knowledge of additional types of life forms. We've formulated a plan of basing the week's study on the ecology of the area and each day a certain habitat is selected for discussion. During this period the leaders and campers are encouraged to discuss the species found in such a habitat and to discuss reasons for finding them there. This method gives a very complete word picture of an area and tends to spread the interests of one individual over the entire group.

Another important factor in the success of our Forays is the plan adopted for leadership. Every camper and outside specialist pays the regular fee for the week. Every camper has the privilege of spending his time as he pleases and can always find a number of others interested in his line of work. Those who follow the specialists naturally learn a great deal, but at no time is the leader hampered by being required to conduct formal field trips or conduct classes unless he chooses to do so.
In 1940 we worked the state park at Lost River in Hardy county, West Virginia, near the Virginia border. At its lowest point the park is 1950 feet above sea level and on Blue Ridge reaches an elevation of 3250 feet. More than 3000 acres are heavily wooded and only a few roads cut through what is virtually impassable terrain. The country is wild—probably as untainted as can be found in the eastern part of the country. The mountains are covered with a mixed deciduous and coniferous growth with an exceptionally heavy undergrowth of mountain laurel. Rocky cliffs and steep slopes are plentiful.

One group of members carefully prepared a "forest map" on which names and relative abundance of trees and shrubs were noted. This was used by bird and mammal students as a basis for their study of habitats. We found chestnut trees had all been killed but many second growth chestnuts were found, some of which were large enough to produce fruit. Up to 2500 feet the chestnut oak tree was most common. Scrub oaks and slippery elms were common, but no American elms could be found.

As usual, different groups studied insects, mammals, reptiles, flowering plants, ferns, etc., and related their work to that of the entire group. Our combined list of birds in 1940 reached 100 in number, and we established 25 breeding records for the county. We were particularly impressed by the number, the sheer abundance of certain birds—ruffed grouse were common as were many species of warblers known to most of us as migrants only. A mature bald eagle was observed in good light; quail were common; we did not find any black-billed cuckoos, however. Pileated woodpeckers appeared very plentiful.

We found nests for the black-and-white warbler, worm-eating warbler, golden-winged, parula, chestnut-sided, the ovenbird, Louisiana water-thrush, hooded warbler and redstart. Nineteen species of warblers were observed during the week. One of the nests of the parula warbler was built 50 feet above the ground in a hemlock tree but in such a way as to allow us to watch them feeding the young. Two other parulas sang the "double-song" described by Karl Haller as that sung by the male of Sutton's warbler, but neither of these birds could be observed closely.

A year later, in 1941, we returned to Lost River and added 11 more species of birds to the county list. Birdlife in general was about the same with the exception of the status of the golden-winged warbler; the golden-wing was the outstanding bird in 1940. In 1941 it was scarce. Three nests were found in '40 and none in '41. The second year there were studied 132 nests representing 36 species and thirteen additional breeding records were made for the county. We found least flycatchers more abundant the second year—found 5 nests in '41 compared with 1 nest in 1940.

In 1942 we traveled to the Holly River state park in Webster county, W. Va., to work the 7300 acres set aside as a game refuge. The park ranges in elevation from 1600 feet up to 2800 feet and consists chiefly of second growth timber, with some areas of virgin timber—principally beech, sugar and red maple. It is drained by Laurel fork of the Holly river and abounds with moisture-loving plants, ferns and mosses and thickets of laurel and rhododendron. The purpose of the camp was to make as complete a biological survey of the area as was possible in six days.

We selected the post-breeding season to enable us to accumulate a report of life forms which will be useable as a checklist for an entire summer season.
Seventy-four species of birds were studied and the nests of 25 species were observed during that period. Nineteen different warblers were found and special work was done to determine their status. Relatively few birds were found in the heavily-wooded hillsides and thickly forested valleys; the favorable areas for many different species of birds were at the points where the wooded hillsides came down to the valley, opening out into grassy pasture lands. Another area found particularly favorable was the top of the mountain where the trees had been cleared away, giving a forest edge, a second growth, and a pasture land habitat. Many ferns and mosses were found but the group could not find the climbing fern, the fragile bladder fern, the walking fern, or any horse-tail.

The group studying trees spent the first two days in general work and the last 4 days studying two different types of areas. The first, an area along the stream, was mapped out and the relative abundance of trees and shrubs noted. The second habitat studied was a hill having a southern exposure, and with soil dry and rather thin and shaley. Many discussions were held on the ecology of these areas and the separate groups compared observations frequently. Many species of salamanders, toads, and frogs were found in these two areas.

In 1943 our camp was located on the shores of Lake Terra Alta - elevation about 2600 feet, and located on top of a plateau which rises from the Cheat river (elevation 1200 feet). Numerous peaks and ridges in the vicinity of the camp rise above 3000 feet. Vegetation and animal life are of the upper Alleghenian and Canadian life zones, with a fair representation of the more southern life forms.

All the forest area in the region has been cut over, except a few swamp areas, such as those at Cranesville swamp and Deep Hollow on the road to the swamp. Hardwood trees predominate, with hemlocks found along the streams and red spruce found where the Canadian life zone is indicated. Ninety-one species of birds were found within the camp area. Veteran campers at Terra Alta were particularly pleased to find rose-breasted grosbeaks present in greater numbers than ever before; to find the numerical volume of the veery increased; and to accomplish such finds as two nests of the Canada warbler in the immediate vicinity of the camp. Positive breeding records were established for 39 species and 18 different warblers were found during the week at Lake Terra Alta.

As an example of the continuing study of bird habitats conducted by the club, we can cite this lake area in Preston county. Members of the club began studies there in 1939, and we've been there several times each year since. That changes were noted can be indicated by quoting two sentences from an article written for The Redstart by John Handlan: "The writer recalls vividly his experiences when he first encountered . . . mountain bird life - from all sides came the song of the least flycatcher, and at dusk the chorus of veerys. Next morning the prominent bird song was that of the rose-breasted grosbeak."

Ten years later in 1939 no nests of the least flycatcher or rose-breasted grosbeak could be found. However, 1939 found many birds on hand that were not observed in '29 - nests of the cardinal were found and many catbirds and robins were there. Briefly, there seems to be a definite trend toward an increase in the more common species and a decrease in numbers of the more wild or retiring birds. There has been a change in the plant life, too, and members of the club have kept careful and detailed records of these changes through the past 18 years.
In 1944 the club held a Foray at Tomlinson Run state park in the northern tip of West Virginia - Hancock county. In general, the wooded sections of the park are typical of the Carolinian life zone, while along the steep hillsides of the central gorge are found many examples of the flora more common in the mountainous regions of a Canadian life zone. The general topography is described as steep hills reaching 1200 feet and descending to 700 feet at the level of the streams. There are many grassy fields, knobs and slopes, narrow strips of stream-bottom-land with alder thickets, blackberry clumps, and weeds. The hillsides are dotted with locust and crabapple thickets. The central gorge drops 100 feet per mile down to the Ohio river and the sides are heavily forested with outcropping cliffs of sandstone, shale and coal. During the week the war-thinned group studied 86 species of birds and 74 nests, representing 33 different nesting species. Nests of the golden-winged warbler were found, and nests of the ovenbird, Louisiana water-thrush, and hooded warbler. Thirteen species of wood warblers were observed during the week. The group identified 23 different ferns, three club mosses, and one horsetail. The lance-leaved grape fern was collected for the first time in that park, during the Foray. One hundred and three trees and shrubs were found and a vast amount of information concerning the plants was compiled. Daily discussions emphasizing the ecology of the area were featured to show all the studies as related to each other. These biological relationships are always emphasized on Forays.

In 1945 we studied the area around Cheat Bridge in Randolph county, West Virginia. The stream running alongside camp is at an elevation of 3500 feet while surrounding mountains, including Gaudineer Knob, reach as high as 4445 feet. In the immediate vicinity can be found red spruce, balsam fir, hemlock, blister pine and rhododendron. Various orchids occur here in the moist, high coniferous woodland and the area is headquarters for thrushes - hermit thrush, olive-backed wood thrush, veery, and robin. The winter wren, purple finch and mourning warbler are also found here. A total of 79 species of birds was reported by the 23 observers and 127 nests were found, representing 37 species of birds. Many mammals, plants, ferns and reptiles were also studied during our stay there.

Although there is an abundance of purple finches at many points in West Virginia mountains, no occupied nests of the species were found until the 1945 Foray. W. R. DeGarmo and William Strunk found three nests of purple finches near Cheat Bridge. The first West Virginia nest was found in a balsam fir near the lodge in which the campers lived.

In 1946 we went to Watoga state park in Pocahontas county. It is rugged in every respect and is the largest state park - more than 10,000 acres in area. Throughout the week we studied species representing a variety extending from those typically Carolinian and Alleghenian to those of the Canadian. Ranging from 2000 feet elevation at the Greenbrier river to 3200 feet on the ridges, such Carolinian species were found as Acadian flycatcher, Bewick's wren, mockingbird, yellow-breasted chat, hooded warbler, redstart, and cardinal. On the other hand we found black-capped chickadees, red-breasted nuthatch, mountain vireo, magnolia warbler, Cairn's warbler, Blackburnian warbler and rose-breasted grosbeak.

Excursions were made to Cranberry Glades (as in many past years) and to Gaudineer Knob at an elevation of 4445 feet. For the county we recorded 111 species and 41 breeding records were established. We found nests of such birds as the
woodcock and mountain vireo, and in the warbler group we found nests of the black-and-white, worm-eating, golden-winged, parula, magnolia, chestnut-sided, ovenbird, hooded, and Canada warbler. Actually 130 nests representing 34 species were studied.

In 1947 we conducted an intensive biological survey in the vicinity of Camp Caesar in Webster county, West Virginia. The woodland there is a mixture of various-aged second growth of oak-hickory and cove hardwood. The elevation along Gauley river near camp is about 2250 feet and the ridges of mountains about 2650 feet. Between this range in elevation is a wide variety of habitats ranging from open farmland, through brushlands to mature forests. The wide variety of habitats quite naturally produced a large number of species — 94 were studied. We established breeding records for 45 species and observed 192 nests. Twenty-two different warblers were found and nests of ten warbler species discovered.

Over the past eleven years we've examined and studied nearly 2000 nests in the state of West Virginia. Next year we will work at Camp Thornwood near Gaudineer Knob in the heart of the spruce belt, where Dr. John Aldrich and Robert Stewart made breeding population studies this past summer. We hope to follow up these studies with our own population studies. In 1949 we hope to work the area in which Sutton's warbler has been found. To you Wilson Club members we say: if you have suggestions and ideas you can give us, please do so; we will appreciate them very much.

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**PROPOSED PROGRAM 1948 - 1949 BROOKS BIRD CLUB**

| October | 3  | Work Day  
| ---     | --- | ---       |
|         | 8, 9, 10 | Annual Reunion, Oglebay Park  
|         | 21 | Executive Committee Meeting  
|         | 29 | Monthly Meeting  
| November | 2  | Work Night  
|         | 7  | Winter Walk  
|         | 11 | Audubon Screen Tour  
|         | " | "Music of the Out-of-Doors" - Harwell  
|         | 21 | Winter Walk  
|         | 26 | Monthly Meeting  
|         | 28 | Work Day  
| December | 3  | Audubon Screen Tour  
|         | " | "Saguroland" - Maslowski  
|         | 5  | Winter Walk  
|         | 19 | Winter Walk  
|         | 21 | Christmas Party  
| January | 2  | Christmas Census  
|         | 9  | Winter Walk  
|         | 23 | Winter Walk  
|         | 25 | Audubon Screen Tour  
|         | " | "Lakelore" - Orians  
|         | 28 | Monthly Meeting  

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<tr>
<th>Month</th>
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<td>20</td>
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<td>May</td>
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<td>Field Trip - Charleston, W. Va.* or Pymatuning Lake, Pa.*</td>
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<td>18</td>
<td>Field Trip - Jefferson Lake, Ohio</td>
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<td></td>
<td>30</td>
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* Tentative Trips
FINE Grosbeaks at Cheat Lake, Monongalia County – On October 12, 1948, while
looking over Cheat Lake, near Morgantown, I observed a large, yellow-headed
finch perched in a dead tree across the road from the beach. Seen in full
sunlight the head and breast appeared bright yellow, shading to grey on the
under parts and back. The size and bill shape immediately suggested a pine
grosbeak (Pinicola enucleator) but unfortunately the bird flew from the tree
before a positive identification could be made. After searching the area for
an hour, I came upon the bird again, bathing in a small stream about twenty-
five yards from the road. Almost immediately it flew to a dead limb overhanging
the stream where it remained motionless in a "robin-like" attitude for several
minutes. During this time I was able to observe it leisurely from all angles
with 10x glasses and definitely identify it as a female pine grosbeak. The
head, breast and rump were all greenish yellow, noticeably duller than when
seen in bright sunlight. The wings were black with two narrow white wing
bars, and with white edgings on the coverts; the tail was also black, fairly
long, and forked. The absence of any reddish tints in the yellow indicated
a female, and the brightness of the color, especially when seen in full sun-
light, a first year bird (Chapman, Birds of Eastern North America, 1940).

There was ample opportunity to check its size with the many cedar waxwings
(Bombycilla cedrorum), and robins (Turdus migratorius) in the vicinity; it was
observed to be larger than a cedar waxwing but slightly smaller than a robin.

Altogether the grosbeak was watched for about ten minutes in this location.
During this time it was observed to take two more baths, both times returning to
its perch over the stream. When I finally approached it too closely it flew
across the road and momentarily disappeared. On following and "squeaking,"
it reappeared followed by two identical birds. These were watched for a short
time, and finally all three disappeared through the woods up the north hillside.

A check of this same area on October 15 failed to reveal any of these birds,
although large numbers of other birds were still present.

The presence of pine grosbeaks in West Virginia at such an early date is of con-
siderable interest. Brooks (Brooks, A Check List of West Virginia Birds, 1944)
mentions only a very few records for the state, and these all appear to be for
winter birds. Somewhat the same situation appears to be true for western Penn-
sylvania (Todd, Birds of Western Pennsylvania, 1940) although there is one record
for October 22, from Hollidaysburg. While it is only speculation, it is possi-
ble that the birds seen at Sunset Beach were attracted to this area by the
heavy concentration of fall birds and by the abundant supply of dogwood berries
upon which many of these birds were feeding. The fondless of pine grosbeaks for
many berries (Todd mentions the berries of the mountain ash and sumac) is well
known and possibly dogwood berries can be added to this list. – Robert C. Conn,
769 Park Avenue, Bound Brook, New Jersey.

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A Marsh Hawk Nest in Canaan Valley – Each spring for the past three years a
pair of marsh hawks (Circus cyaneus hudsonius) have nested in a swampy area
adjacent to the Blackwater river in Canaan valley. Although West Virginia is
in the breeding and nesting range of the marsh hawk it is unusual to find a pair
nesting in the state.
The marsh hawks were observed in Canaan valley by Ben Thompson in 1946 when one descended on his chicken lot and carried away a young chick. Thereafter, observations by Mr. Thompson noted that the activities of the pair were confined to the swampy pastureland across state highway #32. They were again noted in 1947; and on June 17, 1948, while on a field trip in Canaan valley I observed a marsh hawk, showing the identifiable whitish grey color of the male, flying low over the marsh and higher fields nearby.

We had been watching the bird for only a few seconds when it glided sharply down into the shrubby vegetation, and as it disappeared the brown-colored female ascended from the same location. Paying particular note to landmarks where the birds were apparently nesting we made our way across drainage ditches and swampy areas to come unexpectedly upon the marsh hawk sitting on the nest. A quick exit by the bird revealed five white eggs in the center of a nest composed of small sticks and dead grasses. The nest, a low platform in the shape of an irregular circle of approximately two feet in diameter, had been built on the ground on a dry site surrounded by Shrubby St. John's-wort which was waist to shoulder-high.

Observations were made at the two-week intervals, and within the first fourteen days three eggs were hatched. The next observation revealed four young hawks in the nest and no trace of the fifth egg. Two of the birds were more advanced toward maturity than the others, and the least was still quite white with down. By August 15 all four were flying over the fields and marshes in search of food as tirelessly as their parents. One grassy area of about ten feet in diameter was discovered where they had been feeding. The remains of a small rabbit, an unidentifiable bird skull, small pieces of rodent fur, and many feathers and droppings were noted within this area.

The adults never became exceedingly excited by our presence at the nest during the observations. They would usually fly off quietly and gracefully to a great height above us where they circled and kept watch, and their "pee-pee-pee" cry was sounded at regular intervals of about five seconds. - Larry Ward, Elkins, West Virginia.

Late Warbler Migrants — With the sun shining nearly all day and the thermometer in the middle 60's during most of the afternoon, November 5, 1948, seemed more like a day in September than the usual dark November days of northern Ohio.

About 4 o'clock, I received a call from Mr. B. T. Barnes whose office is in the same building as mine at Nela Park, in East Cleveland, Ohio. He stated that he had been observing a Blackburnian warbler (Dendroica fusca) in a crabapple tree just outside his office window. I hurried downstairs and sure enough, just outside the window was an immature Blackburnian warbler busily engaged in feeding on small bugs or insects it was evidently finding on some leaves remaining on the tree.

After a few minutes, the bird was joined by an immature Cape May warbler (Dendroica tigrina) which was also quite active and fed in the same manner. The yellow rump and the cheek patch could be easily seen without the aid of a glass as the three was only ten feet from the window.

Neither Mr. Barnes nor I had ever seen these warblers on so late a date here in Ohio. - M. B. Skaggs, 2066 Alton Road, East Cleveland, Ohio.
Herons in Greenbrier County, West Virginia – During early July, 1948, I spent some time at the West Virginia University Forestry Camp near Alvon, Greenbrier county. On the morning of July 10, with a group of students, I was driving up Anthony's creek, near Neola. Two medium-sized herons were seen feeding in a riffle, and they allowed us to approach them. One was an immature black-crowned night heron (Nycticorax nycticorax hoactli) and the other, to our surprise, was a little blue heron (Florida caerulea caerulea) in adult plumage. Although immature little blues, in white plumage, are not rare in West Virginia during the summer months, we seldom see birds in adult plumage.

There is a persistent report by local people of a heron rookery somewhere in the Anthony's creek neighborhood. Thus far we have not been able to locate it, but there seems a possibility that it may hold several species of breeding herons. Great blues (Andrea herodia) are of regular occurrence along this stream. – Maurice Brooks, West Virginia University, Morgantown, West Virginia.

Goshawk in Barbour County, West Virginia – On February 15, 1948, Mrs. Brooks and the writer were driving along U.S. 119 in Barbour county, West Virginia. Near Century we noticed a large hawk sitting atop a haystack pole near the highway. On close examination with binoculars, it proved to be a goshawk (Accipiter gentilis atricapillus). As winter goshawks often are, it was very easily approached, and allowed us to observe it for some time. It was an adult, and the white stripe over the eye was easily seen. This was the first goshawk I have seen in West Virginia in several years. – Maurice Brooks, West Virginia University, Morgantown, West Virginia.

Holboell's Grebes at Lake Lynn, Monongalia County, West Virginia – On March 18, 1948, I observed a group of seven Holboell's grebes (Colymbus holboelli) on Lake Lynn, Monongalia county. Dates and numbers of birds of this species which were reported by various observers, from this area during March 1948, are as follows:

- March 16 - 8
- March 17 - 3
- March 19 - 9
- March 20 - 7
- March 21 - 5
- March 23 - 7

I observed one of these birds from a very close range, and noted that it was in typical winter plumage with the large yellow bill and white cheek patch plainly visible. Other observers reported that some of the individuals were in near summer plumage.

There are recent reports of these birds over a wide area in eastern United States, but this is the first time they have been recorded at Lake Lynn in spring, and the first time they have been recorded in West Virginia in any numbers. – Harold H. Frazier, Men's Hall, Room 256-L, West Virginia University, Morgantown, West Virginia.
English Sparrows Are Not Always Bad — On July 14, 1948, at Highland Park, Pittsburgh, Pennsylvania, Dr. LeRoy Black and I noticed a flock of English sparrows (Passer domesticus domestica) feeding on something. Frightening the sparrows away, we found that they had been eating Japanese beetles. On several occasions after that we saw English sparrows feeding on Japanese beetles. — Anthony G. Netting, age 12, Pittsburgh, Pennsylvania.

Red-wing Behavior With Bag Worms — For the first time in the five years that we have lived at 1206 Warwood Avenue, Wheeling, West Virginia, we have recorded (August, 1948) red-wings (Agelaius phoeniceus) near our home. On either side of our driveway from the Avenue, junipers have been planted. Most every year, unless sprayed, the junipers are the prey of the bag worm. Also in years past Mr. Dorsch, who passed away last fall, has always hand picked any bag worms that were missed by the spray. So this year, with no spraying and no Mr. Dorsch, the worms have really had a holiday. There were hundreds on the junipers, and it was these worms, as a source of food, that definitely attracted the red-wing. Charles Conrad, 1206 Warwood Avenue, Wheeling, West Virginia.

Birds Observed Feeding on Cicadas — The Brooks Bird Club asked its local members to keep check on the different species that were observed feeding on the 17-year cicadas. From the various reports turned in a total of 10 species was recorded, which included the following: English sparrow, robin, starling, flicker, brown thrasher, house wren, song sparrow, chipping sparrow, wood thrush, and tufted titmouse.

TO ALL BBC MEMBERS

Beginning with volume XVI, THE REDSTART will be published on a quarterly basis. This has met with the approval of the Editor and the active club membership and we feel that it is a step forward toward future plans for a printed publication. Mailing dates under the new policy will be on or about the 10th of each January, April, July, October. We hope this meets with your approval and you find THE REDSTART even more interesting.

The Brooks Bird Club, Inc.