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Cylburn Mansion, 4915 Greenspring Ave., Baltimore, Maryland 21209

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Cover: Horseshoe Pond, Irish Grove Wildlife Sanctuary

Photo by Okie E. McCourt



FIRST MARYLAND BREEDING OF AMERICAN COOT AT DEAL ISLAND

Henry T. Armistead

Perhaps it is not surprising that a road passing through towns with names such as Deal Island, Monie, Chance, Dames Quarter, and Oriole should also be an interesting natural area. In spite of such gamy placenames, I was unable to purchase soft drinks after several hours of mid-afternoon birding with the temperature in the mid-90's. Deal Islanders believe, with a vengeance, that Sunday is a day of rest. I was forced to return to the mainland to slake a very strong thirst. Nevertheless, my tour of the large impounded areas of the Deal Island Wildlife Management Area had certainly been worth this small discomfort.

On August 24, 1968, I had visited this Somerset County area and counted 40 Common Gallinules (Gallinula chloropus), which then marked a new high count for the State. This time, August 16, 1970, the vegetation was much sparser, perhaps because of changing water levels or salinity, and the gallinules were easily seen everywhere. From one spot I counted 149 in sight and before leaving the total rose to 274, including four family groups with 6, 4, 4, and 3 downy young. Most of the other birds were juveniles. Two years ago I had counted nine gallinules at nearby Fairmount Wildlife Management Area, but this year I saw 31 there, including two family groups with three downy young each.

Another change was the presence of 68 American Coots (Fulica americana), including adults with six and five tiny downy young complete with their bright orange head markings as illustrated in Peterson. This seems to be the first State breeding record, although coots are known to breed sparingly from Massachusetts (Finch, 1969) to Florida (AOU, 1957). In 1968 I had not seen any coots at all. The American Coot has a rather spotty breeding distribution in the Northeast. Bull (1964) has noted the tremendous increase of breeding Common Gallinules and coots at Hackensack Meadows, N. J., in 1962, probably owing to the diking of tidal marshes. At Brigantine Refuge, N. J., a spectacular increase occurred in 1960, when 350-400 young coots were found (Scott and Cutler, 1960). In Massachusetts, coots have been found breeding only since 1957, and most recently at Plum Island (Finch, 1969). Recent Pennsylvania breeding records include 1968 at Lake Ontelaunee (Scott and Cutler, 1968) and 1969 at Tinicum (Scott and Cutler, 1969). At Little Creek Refuge, Delaware, Lesser (1963) found about twenty broods in 1961 and 1962. Elsewhere coots have been suspected of breeding in 1961 at Chincoteague Refuge, Virginia, and Fenwick Island, Delaware (Scott and Cutler, 1961).

Several other marsh birds that are quite scarce in Maryland during the breeding season also were present at Deal Island. These included thirteen Pied-billed Grebes, including one pair with four juveniles which retained some of the distinctive black and white markings on the lower throat characteristic of very young birds. These may have hatched locally. Later that afternoon five of these grebes were found at Fairmount W. M. A. Nineteen Gadwalls were there including adults accompanying groups of three and eight juveniles. Several Gadwall breeding records are listed for this area in Stewart and Robbins (1958). More exciting were five male and twelve female Ruddy Ducks. The males still had their bright light blue bills and ruddy feathering, but no juveniles were present to suggest that these chubby little ducks had bred.

The presence of Pied-billed Grebes, Gadwalls, Ruddy Ducks, gallinules and coots at Deal Island is in keeping with their appearance elsewhere in the middle Atlantic coastal region. When new artificial impoundments are developed these species often appear during the breeding season in areas where they had been either scarce or absent. At both Little Creek Refuge and Brigantine Refuge all of these species have been found breeding since the construction of impoundments. To some extent this is true also of Bombay Hook Refuge, Delaware, and Chincoteague Refuge. Perhaps in the near future there will be definite breeding records for Pied-billed Grebes and Ruddy Ducks in the Deal Island area. Ruddies, however, frequently summer in parts of their winter range without breeding.

The Deal Island marsh is one of the least frequently visited birding areas on the Eastern Shore. This is unfortunate because it is one of the finest marshes in the entire area. Among the other birds I saw there on August 16, 1970, were: 17 Little Blue Herons, 53 Cattle Egrets, 39 Common Egrets, 106 Snowy Egrets, 8 Louisiana Herons, 1 Least Bittern, 11 Glossy Ibis, 65 Blue-winged Teal, 2 Marsh Hawks, 5 Ospreys, 1 White-rumped Sandpiper, and 1 Blue Grosbeak. There are two roads giving access to the marsh. Follow State Route 363 out from U. S. 13 at Princess Anne. After crossing the marsh for a mile or so, watch out for the first road, a small paved road going off to the left (south) at an angle of about 45 degrees to route 363. This takes one through a couple of miles of marsh and is marked with yellow signs as a public hunting area. Farther down route 363, turn left at Dames Quarter and follow the second road, an obscure dirt road, through several right angle turns for about three quarters of a mile until it goes onto the marsh again with a good half mile or so of access to the impoundment on the left and natural salt marsh on the right.

There is a dirt road connecting these two roads, but I have found it to be closed by the State on occasion. During the hunting season, I should guess that birders might be persona non grata along the first road. But the second road is used a lot by crabbers and fishermen and should be all right for birders anytime. It would be interesting to see how Deal Island compares with Elliott Island in terms of Black Rails. The sail and other boats at Deal Island proper are also worth looking at; they were the subject of an article in the December 1967 National Geographic.

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39 Benezet Street, Philadelphia, Pa.

FIVE YEARS' EXPERIENCE WITH A BLUEBIRD POPULATION

Sister Barbara Ann

In July, 1966, I took a guest for a walk around the grounds of All Saints Convent at Catonsville, Maryland. We passed the oak grove outside of chapel, followed the road as it ran the ridge separating the front meadow from the back pasture, and stopped by the vineyard at the fork of the road. On the telephone wires overhead, the male Eastern Bluebird (Sialia sialis) as usual was saying, "Cheery...cheery..." The guest, Frances Nevins, gasped. "You've got a bluebird!" I was surprised that she thought anything of it. The bird books all said that they were friendly, common, even abundant birds of door yards, open fields, orchards, pastures and rolling countryside. That was a perfect description of our birds and of our land.

Gently she explained that the situation had changed since the books were written. Suburbs had taken much of the former open country on the east coast. Bluebirds were insect eaters, and were deprived of food, and possibly even poisoned, by the indiscriminate spraying of insecticides. They formerly nested in natural cavities in trees or fence-posts, but farmers have been clearing out dead wood and using metal posts. Worst of all, bluebirds now have to compete with two imported enemies, Starlings and House Sparrows, for the few natural nesting places left. In 1955 there had been an unusually severe winter in the bluebirds' wintering grounds which coincided with heavy spraying for fire ants in the South-east. Losses had been high and the birds had not been able to regain their former numbers. In short, she said, we should consider ourselves very blessed to have bluebirds at all.

The nest was spotted several days later by Fr. James Dorsey, who spends his vacation every July in the Priest's cottage, the Hermitage. Four powder-blue eggs lay in an old Downy Woodpecker hole in the outer-

most post of the vineyard^(a). Vines completely concealed the opening, but Father saw one of the parents entering, and investigated. The hole was about five feet seven or eight inches from the ground, and about six inches deep. Father kept watch every day and finally, at nine o'clock one morning, the announcement was made: "I saw it! I saw every bit of it! One egg was cracking open at 6:45 a.m., and I saw them all hatch out after breakfast."

A stone was rolled to the foot of the post so almost all of us, Sisters, Novices, Postulants, and assorted visitors could check in on the birds every day. The parents were most accommodating, and somehow, between peeks, the young birds got enough to eat, grew, and after an uneventful infancy left the nest. Not until the following years did we realize how unbelievably lucky those young birds had been.

September came, and with it the grape harvest. The vines were getting old; the grapes were few and of poor flavor, and so it was decided to do away with the vineyard and to give the land a rest.

This was fine, except for the bluebirds. I wrote to my own father, W. E. Underhill, who in turn got in touch with an old friend, Dr. Lawrence Zeleny. Dr. Zeleny had been working for several years on a project to increase bluebird populations. When he heard that we had bluebirds, he sent three nest boxes, #54, #55, #56; forms to keep filled in; advice; encouragement; and the offer to help any time we needed it. The directions said to get the boxes out by the latter part of February, as bluebirds like to pick out their nesting boxes early. The boxes were delivered as soon as the roads were clear of snow, the first week of March. The ground was still frozen on March 5, 1967, but somehow we managed to pound into the ground one 1" water-pipe, and on March 7 one 1" fluted metal awning-rod and one 1/2" solid copper curtain-rod, and to wire the boxes onto them.

Number 54 was set up right where the bluebird post had been before^(a). Number 55 about 100 yards away at the edge of the woods^(b), and the third box, number 56, in the apple orchard far in back of the Convent^(c). By March 18, to our utter ecstasy, a pair of bluebirds arrived, and investigated all three boxes. We named the birds Big Ben Blue and Sapphira. They settled on the old homesite where the grapevines had been. By the 17th of April the nest was completed. At the same time a pair of Carolina Chickadees had set up housekeeping in the box by the woods. On April 26, the villains arrived—a pair of House Sparrows who took over the as yet eggless bluebird nest. Big Ben Blue and Sapphira in turn moved in on the chickadees (also eggless thus far), who relocated in an hollow oak limb nearby. By May 2, there were four bluebird eggs in the chickadees' unremodeled nest^(b). I threw out the House Sparrows' nests daily. They decided, after being dispossessed five days in a row, that the bluebirds' new home might be nice for them too; but Big Ben Blue, with four eggs to defend, sent them packing while Sapphira cheered him on from the bird-house door. Things seemed to be going well, but we noticed one morning that Ben and Sapphira were sitting too quietly on the telephone wires. We checked their nest. The eggs were gone. On the ground in the bushes

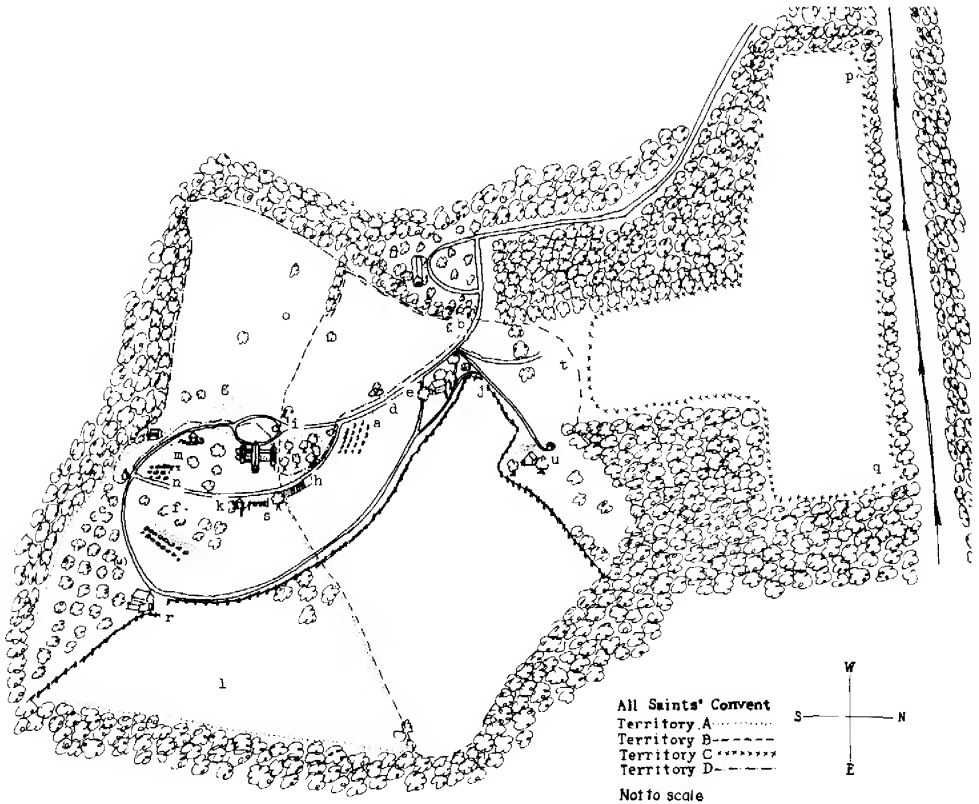


Fig. 1. Map of Convent grounds showing location of bluebird boxes

nearby was an egg, uneaten, but with two small puncture-holes in it. I wrote to Dr. Zeleny. He said that since the nest looked undisturbed, a snake probably had taken the eggs; other predators usually disturb the nesting materials somewhat⁽¹⁾. The House Sparrows were gone, but House Wrens had taken over the box where the grapevines had been. We cleaned out the old nesting materials, as Dr. Zeleny had written that this procedure seemed to increase the chances of birds' reneesting in the same box. He also stated that bluebirds very sensibly will generally not reneest in the same box which a predator has disturbed, so the box was moved a few yards^(d). From the telephone wires, Ben and Sapphira watched intently. As soon as we had retired a discreet distance up the road, they flew in, and began building immediately.

Again, four eggs were laid, starting on May 24. The first one hatched on June 10, and the second the next day. But the day after, one of the unhatched eggs had disappeared and the other was lying at the foot of the pole. It was cracked half open and we could see a fully developed, but dead, embryo within. Ben and Sapphira did not seem upset or concerned, but busied themselves in feeding and brooding the newly hatched twins.

Dr. Zeleny's answer to a letter I wrote the following year about another problem probably has much to do with the failure of the eggs to hatch. He wrote, "In regard to lethal temperatures in bluebird houses during hot weather, I am making a study of this problem. The best information available indicates that the eggs are usually killed if they are subjected to temperatures of about 108° F. or higher for any appreciable length of time. Boxes of the type I furnished you (1/2" plywood) when exposed to the full sun will reach that temperature when the outside shade temperature reaches 96° F. These boxes, therefore, are reasonably safe in this area, but they could prove lethal under extreme conditions that may sometimes be encountered. Boxes made of heavier wood are somewhat cooler, especially if they are painted a very light color, although there is some evidence that white boxes are somewhat less acceptable to the bluebirds.

"A number of people working with bluebirds have reported heavy losses to second broods (usually raised during July) from unknown causes. I suspect that excessive heat is often the cause. In the future I plan to recommend that bluebird houses be made of at least 3/4" lumber and that they have a natural wood finish. These houses may be safely put in the full sun at any temperature up to 100° F.

"Nothing seems to be known about the maximum temperature that can be tolerated by bluebird nestlings, but it is probably about the same as for the eggs." (2)

The twins prospered and flew on June 29. We removed the nesting material and building began in the same box on July 1, the day Fr. Dorsey arrived for his vacation. On July 7 the second brood was begun, but the three eggs laid disappeared the night of the tenth. "That snake, that dirty venomous snake!" Fr. Dorsey sputtered. "What does the bluebird man say to do about that?" Dr. Zeleny said to grease the pole (3). Father jumped into the car and sped to the gas station. From the attendant he demanded, "Your greasiest grease, please!" Feeling that he should give further explanation, he added, "It's not for me, it's for a Sister who has just got to grease a pole—bluebirds, you know." The startled attendant filled a paper coffee-cup with automobile lubricating grease, and with wonder watched Father speed off again.

Back at the Convent, I had cleaned out the nest, pulled the pole out of the ground and leaned the box against a railing while I went for a hammer to pound the pole into the ground (6). I returned in less than three minutes. Big Ben Blue was already taking grass into the box. As I pounded the pole in, Ben flew round my head, either protesting or encouraging loudly. When Father D. returned and greased the pole, Ben and Sapphira retired only a few feet away, watched carefully and continued building as soon as he stepped back. "You know," Father commented, "I think those birds really want to be saved."

The four eggs hatched between August 4 and 7; and the chicks flew on August 23. As long as we kept the poles thoroughly greased we never had any further trouble with snakes or four-footed predators.

Back in the middle of June, 1967, another bluebird had been seen sitting on the box in the apple orchard^(c). As no female had been sighted, we didn't pay much attention to "the Bachelor", until one day he disappeared, and a Sister, weeding near the base of the pole, found two light blue eggs on the ground which looked as though they had been sawed in half. The nesting materials seemed undisturbed, so we thought a snake was probably the culprit. We cleaned out the box and moved it a few feet away^(f), but the Bachelor and his shy bride did not reappear. Later on, this nest was also used by House Wrens.

That autumn, for the first time in years, we had a flock of about twenty-five bluebirds stay with us for several days, presumably on their way south. Most seemed to be young birds. It looked as though the bluebirds were making a comeback.

A few bluebirds remained all winter. We would see them mainly in the hedgerow by the power lines, where persimmons, dried wild grapes, sumac, viburnum and other wild food plants were abundant. There was no way of knowing whether they were "our" birds, or strangers from farther north, but we put the nesting boxes out February 27, 1968, on the chance of inducing as many as possible to stay. From the day they were set up, male bluebirds were spotted sitting on the boxes, but the actual nest-building did not begin until the middle of April.

I think Big Ben and Sapphira returned to their old nest^(e). At any rate, the behavior of the two birds was much the same, the same perches and approaches to the nest were used, the same materials were used in the nest (mainly coarse grasses and rootlets, no grapevine bark or feathers), and Sapphira continued to be very casual about keeping the nest clean.

House Sparrows again attempted to commandeer the nesting box, but Ben and Sapphira made short work of them; they actually beat the male sparrow to the ground and gave him a thorough pecking.

This time there were five eggs in the first clutch, begun on April 23. They all hatched on May 12, but there was a terrific storm which lasted from the 27th to the 29th of May. We worried about the young and finally went out in the rain to check on them. Three were all right, but two lay dead in the bottom of the nest. One Sister held the three survivors while I pulled out the sodden nesting material and replaced it with dry grass. We returned the young birds and they seemed to accept their new nest. They flew three days later.

An examination of the nesting material that had been removed revealed about a dozen puparia of some insect, and I wondered if a parasite had been responsible for weakening the dead birds. Several of the puparia were sent to the Systematic Entomology Laboratory of the Department of Agriculture. Dr. Curtis W. Sabrosky wrote, "Two adults had emerged from the puparia in the box, but had died before fully expanding. As I suspected, they are Protocalliphora sialia S. & D., a common Calliphorid parasite of nestling birds. The larvae are obligatory blood-sucking parasites, but do not remain attached to the birds, feeding intermittently

and then dropping back into the duff or nest material. One cannot say for sure that they caused the death of the two young birds. It is of course possible that death resulted from some other cause. In cases of extreme infestation these maggots probably do cause the death of young birds, but experience has shown that healthy young birds can support a considerable number of larvae and still fledge without any difficulty."⁽⁴⁾

The death of the two little ones probably resulted from a combination of factors: a certain amount of weakening from the blood-sucking parasites, prolonged chill owing to the three-day cold rain, and probably Ben and Sapphira had had difficulty finding enough food, as there would be fewer insects in evidence in the rain. From then on, the nesting material removed after the young had fledged was burned to prevent a build-up of parasites.

A second brood was begun on June 17, 1968. Four eggs were laid, hatched and fledged without any trouble at all. In 1967, it had taken Ben and Sapphira five attempts to raise six young; this year, because of the simple expedient of greasing the pole, they raised seven in two nestings.

Back in the apple orchard again^(f), bluebirds were first seen on the box on February 28. Unfortunately, House Sparrows drove them off and tried to take over in spite of the daily removal of their nesting materials. I had heard that a rubber snake purchased from a practical joke store had frightened sparrows from Purple Martin nesting compartments, so I thought that it might be worth trying on the bluebird boxes. I wrapped a yard of redoubled telephone wire with black yarn and sewed on gold button eyes. The apple orchard box was mounted on the 1/2" copper curtain-rod, which swayed in the slightest breeze. The fake snake was placed in the box so that his head was on a level with the entrance hole. Telephone wire is not very stiff, so he, too, swayed. We stood about twenty feet away and watched. The cock sparrow landed on the doorway of the box; it swayed backward under the impact, bringing the fake snake's head forward into the face of the sparrow. The gold button eyes glittered in the sun; the sparrow uttered an unsparrow-like squawk and fell backward to the ground. The sparrows never touched that box again, so we removed the fake snake before it should frighten the bluebirds too.

With the sparrows disposed of, the bluebirds returned and began building on the last day of May. Eight days later the first egg was laid. The clutch consisted of four, but only two of the eggs hatched. The two unhatched eggs were sent to the long-suffering Dr. Zeleny. I wondered if the heat had made the first two eggs hatch before the incubation period was over for the other two. He replied: "Examination of these eggs indicated that they were probably infertile, although it is possible that they were fertile and that for some reason the embryos died in their very early stages of development. Had the eggs progressed beyond this point it would have been very easy to see the embryos.

"Although the female bluebird lays only one egg a day until the

clutch is complete, she does not begin to incubate them until after the last egg is laid. Thus all eggs usually hatch on the same day which is usually the 14th day after incubation starts. It is true, of course, that in very warm weather incubation may proceed somewhat without the bird being on the nest. This might cause the first-laid eggs to hatch a day or two before the last. If this should happen, the later eggs would still almost surely hatch since the mother bird broods her young sufficiently during their first few days to complete the incubation of any unhatched viable eggs."⁽²⁾

The two grew and flew. A second brood was not attempted, and the third box was again occupied by House Wrens; so the score for 1968 was nine young fledged, half again as many as in 1967.

Late in the winter, February 28, 1969, Dr. and Mrs. Zeleny brought out four new bluebird boxes, constructed of 3/4" lumber, and retrieved box #54, which was falling apart. This was the first time we had met, and they were just as warm and wonderful people as Dr. Zeleny's letters would lead you to expect.

I had hunted through all the buildings on the grounds for suitable poles, but most of those that I found were old pipes around 4 1/2 to 5 feet long, necessitating the boxes being mounted at four feet from the ground or less. The bluebirds accepted the boxes readily, but the lowness proved highly unattractive to the House Sparrows and they have not been a serious problem since.

Sapphira did not return in 1969. Big Ben Blue, or a successor, sat on the old box (now #262)^(e) practically from the day it was set out, and called gently and mournfully. From time to time he would fly over to the new box (#250)^(h) by the parking lot and call from that one too. As a matter of fact, he also claimed the box in front of chapel (#55)⁽ⁱ⁾, and the new box in front of the Convent (#264)^(g). On April 7 a lady arrived. She looked over the various boxes, took in a few straws and tried them for size, only to change her mind and leave the nests unfinished. At last, probably to Ben's relief, she settled on the old homestead^(e). It had been hard work for Big Ben to defend four boxes at one time.

Her nest was quite different from Sapphira's; it was tight, compact; a higher proportion of tidy thin grasses, fewer rough rootlets, and here and there a small downy feather was tucked in the grasses. On April 18 the first egg was laid. The clutch grew to five. Good Mamma began brooding immediately. She wouldn't even leave the eggs when we lifted the lid to look in. All five babies hatched on May 8. Good Mamma was a good housekeeper, too. She removed the fecal sacs of the young at each feeding. The nest remained clean almost to the last day. She was probably just a young bird, maybe one of last year's babies, but a born mother. We were disappointed when she decided not to raise her second brood in the boxes, but moved to a Downy Woodpecker hole in a fence post^(j). If it was privacy she wanted, she chose well. The hole was too deep for us to see into it, even with a flashlight; and the post was well covered with poison ivy!

Ben took the older young ones into the woods, fed and cared for them, leaving Good Mamma to raise the second brood by herself. Another pair of bluebirds took advantage of Big Ben Blue's preoccupation to nest in the box by chapel that he had been formerly defending from all comers. Building began May 6; the first of four eggs was laid on June 9. All hatched on June 26 and were safely fledged on July 13.

Still another of the new boxes (#249) had been attached to a metal utility pole 2 3/4" in diameter, which was greased only lightly, as there was a very large area to be covered. It was in the Bachelor's old territory, in the middle of Sister Fidelia's rock garden ^(k), but there was no way of knowing whether it was taken by the same or a different couple. Four eggs were laid, beginning on April 25, but when they had been brooded for nine days, tragedy struck. One shell with two small punctures was found at the foot of the pole, and the other three eggs had completely disappeared. The lesson imparted was that the grease job has to be very thorough. A little is not enough.

An interesting side point is that the box was remounted on an ungreased U-shaped metal post, which snakes are supposed to be unable to climb, but which had little hooks on it through which to attach wire. Wrens took over the box, but after the eggs had been laid my attention was called to the box by an unusually vehement scolding from the wrens. I arrived just in time to see a chipmunk run down the post. The eggs had been eaten and the fragments left had that sawed-off appearance noted in the shell found below the Bachelor's original nest, back in June, 1967.

About this time, activity resumed again in the pasture. A nest had been completed in the box by the septic tank in the old pasture ^(l) on April 7. The box, which had not been tightly affixed, slid down the thoroughly greased pole, resting about a foot from the ground. It didn't seem to bother the birds, but the woods nearby abound with raccoons, skunks, foxes, squirrels, chipmunks and other creatures who would welcome an egg or two for breakfast, so I slid the box up the pole again. The bluebirds promptly abandoned the nest. After several days of inactivity, I removed the nesting material.

On April 20, nest building began again. Pinkie and Blueboy raised five young there without any trouble, took a two-week vacation with the babies, then relocated in the rose garden ^(m), where box #250 had been moved when it became evident that Big Ben Blue was not about to let anybody else use it while it was still in his territory. Blueboy and his gang of five stayed close to the Convent. The older chicks were seen several times checking in on their three younger siblings, and twice actually bringing food into the box. Every afternoon between three-thirty and four-thirty, Blueboy and the little ones gathered at the birdbath outside the sacristy, drank and bathed. One sight I shall never forget from this year happened on August 28, when the three youngest left the nest. We looked out the window to see Pinkie and Blueboy on the sacristy balustrade, the five sophisticated adolescents spaced evenly around the edge of the shell-shaped cement birdbath, and the three almost tailless new ones wobbling precariously on the telephone wires above. One of the

adolescents chirped and the babies simultaneously launched themselves plunk into the center of the bath, showering their siblings. They remained around until mid-October, then all left together for the South.

The score for 1969 was seventeen fledged.

Table 1. Summary of Eastern Bluebird Nesting Success

| Box No. | Terr | Loc | Height | Mounting | First seen nesting | First egg laid | Total eggs | Hatched | | Losses | Comments | Fledged | |
|--------------------------------------|---------|----------|--------|----------|--------------------|----------------|------------|------------|-------|---------|------------|-----------|-----|
| | | | | | | | | Date | Total | | | Date | No. |
| - | B (a) | 5'7" | 6" | wood | early July '66 | ? | 4 | early July | 4 | 0 | | late July | 4 |
| 1966 total, 0 boxes, 1 nest | | | | | | | | | | | | | |
| 54 | B (a) | 4'7" | | metal | Mar. 16, 1967 | - | 0 | - | - | - | House Sp. | - | - |
| 55 | B (b) | 4'1" | | metal | Apr. 27, 1967 | Apr. 27 | 4 | - | 0 | 4 eggs | Snake | - | 0 |
| 55 | B (d) | 4'1" | | metal | May 10, 1967 | May 24 | 4 | June 10-11 | 2 | 2 eggs | ? | June 29 | 2 |
| 55 | B (d) | 4'1" | | metal | July 1, 1967 | July 7 | 3 | - | 0 | 3 eggs | Snake | - | 0 |
| 55 | B (e) | 4'1" | | metal* | July 10, 1967 | July 22? | 4 | Aug 4,5,7 | 4 | 0 | | Aug 23-24 | 4 |
| 56 | A (c) | 4'9" | | metal | June 19, 1967 | June 20? | 2? | - | 0 | 2? | Chipmunk | - | 0 |
| 1967 total, 3 boxes, 2 "families" | | | | | | | | | | | | | |
| 55 | B (e) | 4'0" | | metal* | Apr. 15, 1968 | Apr. 23 | 5 | May 12 | 5 | 2 yg | See text | May 31 | 3 |
| 55 | B (e) | 4'0" | | metal* | June 15, 1968 | June 17 | 4 | July 1? | 4 | - | | July 17 | 4 |
| 54 | A (f) | 4'0" | | metal* | May 31, 1968 | June 8 | 4 | June 22 | 2 | 2 eggs | See text | July 8? | 2 |
| 1968 total, 3 boxes, 2 "families" | | | | | | | | | | | | | |
| 249 | A (k) | 4'2" | | metal* | Apr. 4, 1969 | Apr. 25 | 4 | - | 0 | 4 eggs | Sn. or Ch. | - | 0 |
| 56 | A (l) | 3'0" | | pipe* | Apr. 7-, 1969 | - | 0 | - | - | - | Box fell | - | - |
| 56 | A (l) | 3'0" | | pipe* | Apr. 20, 1969 | May 24 | 5 | June 13 | 5 | 0 | | June 29 | 5 |
| 250 | A (m) | 4'1 1/2" | | pipe* | July 17, 1969 | July 25 | 3 | Aug. 10 | 3 | 0 | | Aug. 28 | 3 |
| 262 | B (e) | 3'2" | | pipe* | Apr. 7, 1969 | Apr. 18 | 5 | May 8 | 5 | 0 | 2nd br @ 1 | May 25 | 5 |
| 55 | B (j) | 3'3" | | pipe* | Apr. 9, 1969 | - | - | - | - | - | Too near | - | - |
| 55 | B (j) | 3'3" | | pipe* | May 6, 1969 | June 9 | 4 | June 26 | 4 | 0 | | July 13 | 4 |
| 264 | B (g) | 3'3" | | pipe* | Apr. 11, 1969 | - | 0 | - | - | - | Wrens | - | - |
| 1969 total, 6 boxes, 3-5 "families" | | | | | | | | | | | | | |
| 297 | A (r) | 3'4" | | pipe* | ? , 1970 | Apr. 20 | 5 | May 7 | 5 | 0 | | May 25 | 5 |
| 294 | A (n) | 3'7" | | pipe* | May 20, 1970 | May 28 | 3 | - | 0 | 3 eggs | Wren | - | 0 |
| 294 | A (s) | 3'1 1/2" | | pipe* | May 30, 1970 | June 5 | 5 | June 22 | 4 | 1 egg | Wren | July 7 | 4 |
| 295 | A (u) | 3'1 1/2" | | pipe* | ? , 1970 | July 22 | 3 | Aug. 6-7 | 2 | 1 egg | Infertile | Aug. 24 | 2 |
| 250 | B (t) | 3'1" | | pipe* | Apr. 20, 1970 | May 1 | 5 | May 17 | 5 | 0 | | June 4 | 5 |
| 250 | B (t) | 3'1" | | pipe* | June 5, 1970 | June 8 | 5 | June 26 | 5 | 0 | | July 10 | 5 |
| 298 | C (p) | 3'6 1/2" | | pipe* | May 5, 1970 | - | - | - | - | - | Man, wasps | - | - |
| 298 | C (p) | 3'6 1/2" | | pipe* | June 8, 1970 | June 27 | 5 | - | 0 | 5 eggs | Abandoned | - | 0 |
| 296 | C (q) | 4'1" | | pipe* | July 22, 1970 | - | - | - | - | - | Abandoned | - | - |
| 249 | A,D (g) | 3'10" | | rod* | May 25, 1970 | - | 0 | - | - | - | Abandoned | - | - |
| 249 | D (i) | 3'5" | | pipe* | Apr. 19, 1970 | - | 0 | - | - | - | Abandoned | - | - |
| 293 | D (o) | 3'2" | | pipe* | Apr. 19, 1970 | Apr. 26 | 5 | May 12 | 5 | 0 | | 5/21-6/1 | 5 |
| 249 | D (i) | 3'5" | | pipe* | May 22, 1970 | May 29 | 5 | - | 0 | 5 eggs | Wren | - | 0 |
| 293 | D (o) | 3'2" | | pipe* | June 5, 1970 | Je 9 or 10 | 5 | June 27 | 4 | 1e, 1yg | | July 11 | 3 |
| 55 | B-D (b) | 3'9" | | pipe* | Apr. 20, 1970 | - | 0 | - | - | - | Abandoned | - | - |
| 1970 total, 12 boxes, 4-6 "families" | | | | | | | | | | | | | |
| Five-year total | | | | | | | 101 | | 68 | 36 | | | 65 |

At ten o'clock on the morning of February 28, 1970, a bluebird call came from the orchard, followed by another and another. Nine bluebirds flew to the walnut tree by the rose garden. One after another, calling softly, they dove and hovered at the spot where the nesting box had stood the year before^(m). One of them saw the box in its new position about thirty feet away⁽ⁿ⁾, and flew to the lid. Two more landed on the top of the box and another in the entrance. The remaining five perched in the mimosa about ten feet away. It had to be the old family, minus one, returning home for the summer.

The family stayed together for a few days, but soon broke up as some moved on and others chose their prospective territories. The problem

seemed most acute in the front meadow. This territory was last occupied by Ben Blue and Good Mamma, and included the box by the daffodils (#264)^(g), a new box in the center of the field (#293)^(o), the old homestead by the Hermitage (#262)^(e), the box outside of the chapel grove (#249)⁽ⁱ⁾ and old #55^(b), now at the edge of the woods. Two males, seemingly perfectly matched, fought over the territory, and over the same seemingly modern Jezebel of a female. Wild battles raged for more than a week. Jezebel egged them on, favoring first one male's choice of nesting box, than the other's. One male emerged victorious, or at least his nesting box was finally chosen. Hubby and Jezebel began building in earnest on April 20 in the center-field box (#293)^(o), and the first of the five eggs was laid on April 26. The Other Man still lingered around, especially in the chapel grove which appeared to be considered neutral territory by all the bluebirds. Occasionally, Hubby and Jezebel would fly off in one direction; the Other Man would appear from the other direction, land on the box, call softly and wistfully, then high-tail it before he got caught by the rightful owners.

The five young were banded by Mr. Stephen Simon of the M.O.S. on May 18. Three left three days later with Hubby, and Jezebel resumed the flirtation with the Other Man. Even though there were still two young in the nest to be fed, she built a new nest in the Other Man's chapel-grove box⁽¹⁾, and had laid two eggs before the last nestling in the center field left on June 1. Unfortunately a wren, of whom I shall say more later, punctured the five eggs in the chapel-grove box. Jezebel and the Other Man built a second nest in the center field. Five eggs were laid, and Jezebel was very reluctant to leave them. Unlike Good Mamma who cowered over her eggs when anyone looked in, she glared up defiantly. Thus when I checked the box on June 27 and found three babies newly hatched, one in the halfshell and one egg, I assumed all was well. It upset her, so I didn't check again. When Stephen Simon banded them on July 8, he found three young only and one egg. One must have died shortly after hatching, for at that time the parents would have been able to remove the body. The remaining egg was infertile. The three last young flew on July 11.

Two new boxes were erected in the upper hayfield^(p,q), bounded by the hedgerow and the powerlines. It would seem to be ideal bluebird country, but there were no successful nestings there. In the first place, wasps settled in the boxes. Rotenone was sprinkled in lightly, and worked temporarily. Then one of the boxes was wrenched off the pole by vandals and thrown into the bushes two week-ends in a row^(p). Fortunately, it was not taken far and was undamaged. Bluebirds began building in one box on May 5, but abandoned the unfinished nest. There was activity again on June 8, but the nest was abandoned with five eggs^(p). By July 29, a nest was built in the other box, but it, too, appeared abandoned^(q). The nests were built of a curly type of grass and had an inner lining of grapevine bark with a few feathers, so it was probably the same female, but I have not caught a glimpse of her.

I have noticed that, like people, all bluebirds are individuals, and some are even more individual than others. The most individual of all is Gainsborough. He has taken over Pinkie (I or II), and Blueboy's old

territory. Nothing particularly stood out about him as he helped with his first brood down by the barn^(r). Five eggs were laid, beginning on April 20. They hatched on May 7, were banded on May 18, and left the nest, May 25. It was when Gainsborough moved up to the rose garden⁽ⁿ⁾ for his second brood that we got the full impact of his personality. He is not a tame bird, he simply considers us to be large, harmless, rather stupid but occasionally useful creatures to be given the respect one would afford a brontosaurus—simply because of size. Like Blueboy before him, he brought the young ones up to the Convent to raise them near his mate and second brood. A House Wren had been in possession of the box in the rose garden, but while Gainsborough tackled the wren, I cleaned the sticks and twigs of the wren out of the box; and building proceeded. In one week, May 28, the first egg was laid. The afternoon of the 30th, I was a short distance away in the wildflower garden in the woods. Gainsborough flew down the path, hovered about twelve feet away, chirped, and flew up the path again. I simply stared in amazement. Gainsborough turned, hovered, called again and flew on. This time I followed. Pinkie sat mutely in the mimosa. Gainsborough flew to the top of the box, called, went inside, came out, then flew up next to Pinkie in the mimosa. I opened the box and looked in. One egg had a gaping hole through which the albumen and yolk were draining into the nest, the other two were neatly punctured. From the depths of the holly tree rose the gay, bubbling song of the wren. I could cheerfully have murdered him.

Gainsborough, however, had the situation under control. Again calling, he flew off to the back of the Convent, hovered near the clothes line^(s), then flew up and waited in the silver maple. I got the idea this time, pulled out the nesting materials, unfastened the box, yanked up the greasy pole and followed. As I went for the hammer and pliers, Pinkie joined him in the maple tree, a strand of grass in her beak. The nest was built in record time, but Pinkie waited until June 5 to lay the first egg. The day before, the same wren, I am sure, with the lust of egg yolk upon him, had punctured the five eggs of Jezebel and the Other Man; eight bluebird eggs destroyed. I borrowed the maintenance man's .22, caught the wren coming out of Gainsborough's new nest with a wet beak, and fired the gun. (A fire-cracker would probably have frightened him as well.) This time, the wren got the message. We put up a wren box in the chapel grove, and he left the bluebird boxes strictly alone after that. We shall see if the truce lasts.

Gainsborough and Pinkie did not abandon the new nest even though the first egg had been punctured. In fact, later they defended the nest from an entire horticultural class which had gathered to watch the young being banded^(s). The clutch was completed, and the four hatched June 22. In the meanwhile, with the first brood so close to the house we were able to make some very interesting observations. For example, on June 22, the five fledglings sat on the roof of the summer house near the clothesline box where their siblings were hatching. One seized something round from the gutter and flew to the top of the roof with it, released it, and it rolled down. Two others chased it. One caught it, flew to the top of the roof, and did the same thing. This behavior was repeated continually while we were at breakfast. I can explain it only as play. Gainsborough

and Pinkie returned to the box by the barn^(u) and raised a third brood, of two, dutifully aided by the nine older siblings. On August 24, the last two left the box.

Last of all, Good Mamma did return. She and Ben Blue (II or III as the case may be) set up housekeeping in a box near the poison-ivy post^(j), which I purposefully plugged during the nesting season. The two of them raised two broods of five each^(t). Good Mamma was lifted off the nestlings, which she refused to leave, during the banding operations, and was banded as well. Her nests were built with the same style and the same materials as they had been the previous year, and the first brood attended with the same tidiness. The second brood, which she probably was caring for by herself, seemed to get ahead of her housekeeping. I wondered if she was getting old.

In the evening of July 26, 1970, the puppy from our St. Gabriel's School proudly brought her in, minus a tail, but still alive. We force-fed her and took her to the vet the next day. Vitamin drops were prescribed, and continued force-feeding until she would eat by herself. One wing appeared injured in some way, but not broken. After two days of cold cuts, which she detested, but on which she was thriving, she accepted various live wiggling insects. In particular, she ate five small live crickets before bedtime, and we were considering a trial release the next morning; however, in the morning she was dead. We just don't know why.

The score for 1970 is 29 fledged and one Good Mamma lost. It has definitely been worth the effort, and in the future, with luck, we will probably raise about forty young bluebirds each year. This is only a drop in the bucket, but if others in this area will maintain boxes, in a short time the bluebird will again be the "friendly, common, even abundant bird of dooryards and open country." And since "a thing of beauty is a joy forever", something redemptive is working in bluebird boxes too.

Footnotes

1. Dr. Lawrence Zeleny, personal correspondence of August 31, 1967.
2. Dr. Lawrence Zeleny, personal correspondence of August 2, 1968.
3. "Bluebird House Plans and Instructions", issued by the National Association for the Protection and Propagation of Purple Martins and Bluebirds of America, Inc. (now defunct)
4. Dr. Curtis Sabrosky, personal correspondence of June 19, 1968.

Letters in the text refer to the position of the individual boxes as shown in Figure 1.



All Saints Convent, Catonsville

HELEN MILLER SCHOLARSHIP ANNOUNCEMENT

Each year MOS offers a scholarship that covers the cost of tuition, housing and meals for a two-week leadership training course at an Audubon Nature Camp in July or August. Each Chapter may sponsor an applicant. Apply in writing before Feb. 1, 1971, stating your plans to put the training to use upon completion of the course.

UNUSUAL BLUEBIRD BEHAVIOR IN THE CARE OF NESTLINGS

Lawrence Zeleny

Certain unique observations in connection with the rearing of a brood of Eastern Bluebirds (*Sialia sialis*) seem worthy of recording. This brood was raised in one of the nesting boxes of a "bluebird trail" operated by the writer and consisting of 47 nesting boxes located on the grounds of the Agricultural Research Center at Beltsville, Maryland.



Fig. 1. Two female bluebirds feed brood of four in nest box. One immature (not shown) also helps feed the brood. Aug. 3, 1970

birds, the 1-1/2-inch diameter opening of this box was reduced to 1-3/8 inch on June 22, two days after the young of the first brood were fledged. The old nest was removed from the box at the same time.

On July 4 it was observed that bluebirds had started to build another nest in this box in spite of the small entrance hole, and on July 11 the nest was found to be complete and to contain 3 of the 4 eggs of the ultimate clutch. The eggs hatched on July 26 after the normal 14-day incubation period.

On August 2, when the nestlings were 7 days old, the writer watched the nesting box with binoculars from a distance of about 50 feet for a time long enough to observe what difficulty, if any, the adult birds might have in going in and out of the substandard 1-3/8 inch diameter entrance. Prior to this date all observations of this nesting had been so brief that neither of the adult birds had been seen. Within a few minutes an adult female bluebird arrived with food. She made numerous abortive attempts to enter the box but each time backed away, still holding the food in her bill. About two minutes later a second adult female bluebird arrived with food and almost immediately entered the box to feed the nestlings. While this second female was still in the box, the first female flew again to the entrance and passed her food in to

The nesting box in question was designated as #224 of the Audubon Naturalist Society series. It was of the design recommended by the writer (see Maryland Birdlife 25: 138-142, 1969). The box was mounted at a height of 56 inches on top of a T-shaped metal post of a fence on Sheep Nutrition Road at the Center. A first brood of five young bluebirds fledged from this box on June 20, 1970. Both the male and female parents had been seen feeding the nestlings on several occasions before fledging.

As part of an experiment to determine the minimum size of entrance hole acceptable to blue-

the female in the box. The same sequence of events was repeated four times during the half-hour period of observation. No male bluebird was seen during this period.

On August 3 the nesting box was observed for about one hour. The actions noted on the previous day were repeated with almost no variation. Again no male bluebird was seen.

On August 8, when the nestlings were 13 days old, the box was again watched for about one hour. Again two adult females brought food to the nest, but this time both birds entered the box in turn to feed the young and remove fecal sacs. On several of their visits both adult females were in the vicinity of the box at the same time so that there could be no doubt about two birds being involved. On one occasion during this one hour period a juvenile bluebird, judged also to be a female, also appeared at the box with food. After making a few abortive attempts to enter the box it flew off without delivering its food. No male bird was seen.

On August 9 the box was again observed for a half-hour period. This time both adult females and the juvenile bluebird made repeated visits to the nest to feed the nestlings, always entering the box with a minimum of difficulty, considering the tight fitting small entrance. On several occasions all three were seen perched on the fence with food within a few feet of one another, fluttering their wings and "conversing" in a friendly manner.

The nestlings were still in the nest on August 12, but the nest was empty on August 15. Thus they were presumably fledged successfully between the 17th and 20th day after hatching, well within the normal range.

Various observers have reported seeing juvenile bluebirds of an earlier brood assisting the parent birds in the feeding of nestlings. Even so, this is not considered to be the usual practice. To the best of our knowledge, however, no other instance of two adult bluebirds or other passerine birds of the same sex caring for a single brood of nestlings has been reported.

One might wonder if one of the presumed adult females in this instance could possibly have been a juvenile bird of the first brood. This seems very unlikely for the following reasons:

1. The plumage of juvenile bluebirds is quite distinct from that of the adults, and all three birds were observed carefully and repeatedly at close range with binoculars. No vestiges of juvenile plumage could be seen on either of the adult birds, and August 2 is too early for the completion of the postjuvenile molt.
2. If two juvenile birds were feeding the nestlings they would almost surely have been siblings of the same first brood and similar in appearance. The one obviously juvenile bird seen feeding the nestlings had lost none of its juvenile appearance.
3. Adult and juvenile bluebirds have similar call notes, but quite different voice characteristics. The two birds judged to be adult

females had none of the juvenile voice characteristics, while the voice of the juvenile bird was typically juvenile.

Another possibility is that one of the presumed adult female birds was actually a male which, through some strange quirk of nature, had plumage characteristics of the female. This seems quite unlikely, but perhaps not impossible.

The most likely explanation would appear to be that the male bird had been killed or that he might have deserted the brood because he found it difficult or impossible to enter the subnormal size entrance hole. (Some bluebirds have been observed entering a 1-3/8 inch opening only with great difficulty.) In the event of the male bird's death or desertion it would seem that his share of the duty of caring for the nestlings may then have been taken over by an unmated female in partial fulfillment of her maternal instinct.

4312 Van Buren St.,
University Park, Hyattsville



SPRING RECORD OF THE YELLOW-HEADED BLACKBIRD IN MARYLAND

Brian Sharp

Late in the morning of April 4, 1970, my wife and I discovered an adult male Yellow-headed Blackbird in Adelphi, Prince Georges County. The bird was first noticed sitting in a willow bush at the edge of a stream, over-looking a small (1/8 acre) alluvial marsh of sedges, cat-tail and arrowhead. At our approach it flew into the top of one of the red maples in the nearby bottomland woods. This was the last it was seen, even though I looked for it several times the following week.

This sighting represents the second spring record (and the seventh, regardless of season) of this western species in Maryland.

Migratory Bird Populations Station, Laurel

OKEY E. MCCOURT

Okey E. McCourt, known to many in MOS, passed away on August 8, 1970. For four successive years, he presented slide programs at the Ocean City conventions, and twice his pictures were featured on the front cover of MARYLAND BIRDLIFE.

By profession, he was an educator, having done pioneer work in vocational education in two States. The study, observation and photography of birds was a life-long hobby, with especial attention to the photographing of nesting birds, notably the warblers.

Kind and gentle, he was a great teacher, an artist and a friend to all.

V. E. U.

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THE PRESIDENT'S PAGE

V. Edwin Unger

Well-qualified writers constantly tell us not to attribute human traits and reactions to birds and other animals, but I find it hard to refrain from doing so at times. After all, what is one to do when he sees a bird doing just what he would do in a like circumstance?

Many times have I found a Tufted Titmouse at or near my feeder, uttering a most plaintive whistle. In every case that I can recall, the feeder has been empty when this occurs, and filling it stills the voice. Can I be wrong in calling it "scolding"?

You have seen House Wrens, bluebirds, martins and Carolina Chickadees examining nesting boxes in the spring. How like their human counterparts making a tour of model homes. Haven't you noticed one enter a box, emerge and say to his mate, "come look at this one"?

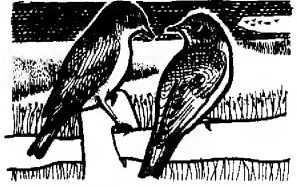
Or, take the Red-eyed Vireo. As he goes about his daily routine, he never ceases his patter, so like a boy whistling a tune as he goes about his work or play. It sounds mighty like contentment to me.

We are told that birds sing, not for joy, but to proclaim their territory, and who am I to take issue with men of science and of letters? But when Mr. Robin pours forth his song from a perch as his mate broods the eggs nearby, it sounds awfully like he is pleased and content to have her perform the chore. I've noticed too, that birds of some species continue to sing in late summer and on migration. Only yesterday (mid-September), I observed a sizeable number of Pine Warblers, too many to be residents of so small an area, feeding in the tree-tops on a migration stop. One or more individuals sang repeatedly over a considerable period of time.

Again, we are told that only man can reason. Yet Donald Culross Peattie has related many incidents wherein individuals of the mammal and avian worlds have displayed a cunning that makes us ask what reasoning is if this be not such. We see a gull drop a clam from considerable height to a bridge or to a pavement, then proceed to eat the contents. This happy consequence may have been discovered by accident (in human affairs such learning is called "serendipity"). Be that as it may, the information is retained and seemingly passed on. Furthermore, the gull seems to have no difficulty in differentiating between hard and resilient surfaces.

The Common Crow is a pretty wily customer, but then he has probably learned from man's treatment of him that he had better be. If he and his feathered friends do not engage in abstract reasoning, maybe they know that they can get along without it and thus avoid the mental strain. If so, then doesn't that make them sort of "human"?

Federalburg



THE SEASON

APRIL, MAY, JUNE, 1970

Chandler S. Robbins

Spring is the season most eagerly anticipated by the bird watcher. There certainly are not more individual birds in the woods and fields in spring than in fall, but they are, on the whole, more brightly colored, easier to identify, and, perhaps best of all, most species are in full song. Furthermore, after observers have been cooped up indoors by winter weather, they are most eager to venture afield with binoculars or camera and enjoy nature's spring spectacle to the utmost.

Some M.O.S. members keep daily bird lists, some go afield each week end, some watch for at least a short period each day from their windows or gardens and note only the new arrivals or the departure of winter residents from their feeding stations. Still other birders follow the weather maps and forecasts and make their own predictions as to when and where the birding will be most productive. It is largely for this last group that we include as part of the SEASON report a brief summary of weather conditions, especially those that had a direct bearing on major migratory movement.

March, you will recall, was cold except for the last week. Distinctly subnormal temperatures predominated in Maryland and in the states to the south of us through the first half of April, holding up the departure of winter residents and delaying the major northward push of tropical transients. Some indication of the likelihood of encountering a heavy migration is gained by noting the wind direction that is shown on the daily weather maps--but note that these maps now show surface conditions as recorded at 7 a.m., E.S.T., instead of at 1 a.m. as they had prior to Apr. 15, 1968. In general, songbirds tend to migrate with, or at least not against, the wind; so in spring a southwest or south wind is much more favorable than one from the north or northwest.

The weather maps show that winds over Maryland were from a northerly quadrant on April 5, 7, 11-16, 18-20, 24, and 27, and on May 3, 4, 6, 7, 14, 15, 18, 21, 24, and 27-30. These are the days on which we would not expect heavy flights, although many conditions besides temperatures play an important part in determining when and where the greatest movements take place and situations under which the movements are most readily observed. My main objective in listing these dates is to point out that

Table 1. Spring Arrival Dates, 1970

| Species | Median | | Garr | Alle | Wash | Fred | Balt | Harf | Howd | Mont | Pr.G | Anne | S.Md | Cecl | Kent | Caro | Talb | Dorc | Somr | Worc |
|------------------------|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | 10-yr | 1970 | | | | | | | | | | | | | | | | | | |
| Common Loon | -- | 4/20 | 5/ 2 | 4/11 | 0 | 0 | -- | 4/19 | 4/20 | 4/11 | 0 | 4/20 | -- | 4/29 | 4/21 | 0 | 4/ 1 | 4/18 | -- | -- |
| Double-cr. Cormorant | -- | 5/ 2 | 0 | 0 | 0 | 0 | -- | 0 | 0 | 4/30 | 5/ 2 | 0 | 4/13 | 0 | 5/ 2 | 0 | 5/ 2 | 3/27 | 5/ 2 | 5/ 2 |
| Green Heron | 4/23 | 5/ 2 | 5/ 2 | 4/12 | -- | 5/ 2 | 5/ 2 | 5/ 2 | 5/ 2 | 4/12 | 5/ 2 | 4/ 9 | 5/ 3 | 5/ 2 | 5/ 2 | 4/23 | 4/25 | 4/18 | 4/18 | -- |
| Little Blue Heron | -- | 5/ 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5/ 2 | 5/ 2 | 0 | 5/ 2 | 5/ 2 | 0 | -- | 4/ 1 | 5/ 8 |
| Cattle Egret | -- | 4/24 | 0 | 0 | 0 | 0 | 0 | 0 | 6/ 2 | 0 | 4/28 | 4/21 | 4/27 | 0 | 4/17 | 4/28 | 4/18 | 4/ 4 | 5/ 2 | 3/23 |
| Common Egret | -- | 4/14 | 0 | 0 | 0 | 0 | 5/ 2 | 0 | 3/26 | 0 | 4/ 6 | 0 | 5/ 2 | 0 | 5/ 2 | 4/21 | 5/ 2 | 3/23 | 4/ 1 | 3/23 |
| Snowy Egret | -- | 4/18 | 0 | 0 | 0 | 0 | 5/ 1 | 0 | 0 | 0 | 0 | 0 | 5/ 2 | 0 | 0 | 5/ 2 | 4/18 | 3/27 | 4/ 1 | 3/23 |
| American Bittern | -- | 4/24 | 5/ 2 | 4/16 | 0 | 0 | 0 | 0 | 0 | 4/13 | 5/ 2 | 4/16 | 0 | 0 | 0 | 5/ 2 | 0 | -- | -- | -- |
| Glossy Ibis | -- | 5/ 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5/ 2 | 5/ 2 | 5/ 2 | 0 | 0 | 0 | 5/ 2 | 0 | 4/25 | 5/ 5 | 5/ 2 |
| Broad-winged Hawk | 4/22 | 4/21 | 4/18 | 4/17 | 0 | 0 | 4/18 | 4/25 | 4/25 | 4/21 | 4/21 | 4/21 | 4/ 3 | 4/29 | 0 | 0 | 4/12 | 0 | 0 | 0 |
| Spotted Sandpiper | 4/30 | 4/30 | 5/ 2 | 4/20 | 0 | 5/ 2 | 5/ 2 | 4/25 | 4/27 | 4/26 | 5/ 2 | 4/21 | 5/ 2 | 4/30 | 4/ 8 | 5/ 2 | 4/25 | 5/ 2 | 0 | -- |
| Solitary Sandpiper | 5/ 2 | 5/ 2 | 0 | 4/14 | 0 | 5/ 2 | 5/20 | 0 | 0 | 5/ 2 | 0 | 5/ 2 | 5/ 2 | 0 | 5/ 2 | 5/ 2 | 5/ 2 | 5/ 2 | 0 | -- |
| Lesser Yellowlegs | 5/ 2 | 5/ 2 | 0 | 0 | 0 | 5/ 2 | 4/ 9 | 0 | 0 | 4/12 | 0 | -- | 5/ 2 | 0 | 5/ 2 | 5/ 2 | 5/ 2 | 4/25 | 4/20 | 5/ 2 |
| Pectoral Sandpiper | -- | 5/ 2 | 0 | 0 | 0 | 0 | 4/ 4 | 0 | 0 | 0 | 0 | 0 | 5/ 2 | 0 | 0 | 5/ 2 | 0 | 5/ 2 | 4/26 | 5/ 9 |
| Least Sandpiper | -- | 5/ 2 | 0 | 0 | 0 | 0 | 5/20 | 0 | 0 | 5/ 2 | 0 | -- | 5/ 2 | 0 | 5/ 2 | 5/ 2 | 0 | 5/ 2 | 4/30 | -- |
| Semipalmated Sandpiper | -- | 5/ 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -- | 0 | 0 | 5/ 2 | 5/ 2 | 4/25 | 5/ 2 | 5/12 | 5/ 8 |
| Laughing Gull | -- | 4/18 | 0 | 0 | 0 | 0 | -- | -- | 0 | 0 | 0 | 4/20 | 4/23 | -- | 5/ 2 | 4/11 | 4/17 | 4/18 | 4/18 | -- |
| Bonaparte's Gull | -- | 4/12 | 0 | 4/12 | 0 | 0 | 4/12 | 0 | 0 | 4/ 4 | 0 | 0 | 0 | 0 | 5/ 2 | 0 | 4/ 5 | 0 | 0 | -- |
| Caspian Tern | -- | -- | 0 | 0 | 0 | 0 | 5/ 1 | 5/ 2 | 0 | 0 | 0 | -- | 0 | 4/19 | 0 | 0 | 0 | 0 | 0 | 5/ 2 |
| Yellow-billed Cuckoo | 5/ 4 | 5/ 2 | 5/ 2 | 5/ 2 | 6/ 6 | 5/ 2 | 5/ 2 | -- | 5/ 5 | 5/ 2 | 4/28 | 5/10 | 5/10 | -- | 5/ 2 | 4/29 | 5/ 2 | 5/ 2 | 5/ 2 | 5/ 2 |
| Black-billed Cuckoo | 5/ 5 | 5/ 2 | 5/ 2 | 5/ 2 | 6/13 | 0 | 5/ 9 | 0 | 5/ 2 | 5/ 2 | 0 | 5/ 2 | 0 | 6/13 | 0 | 0 | 0 | 0 | 0 | 0 |
| Chuck-will's-widow | -- | 5/ 2 | 0 | 0 | 0 | 0 | 6/ 3 | 0 | 5/11 | 0 | 0 | 5/ 2 | -- | 0 | 0 | 5/ 2 | 4/23 | 5/ 2 | 5/ 2 | -- |
| Whip-poor-will | 4/21 | 4/24 | 5/ 2 | 5/ 2 | -- | -- | 4/24 | -- | 4/12 | 5/ 2 | 5/ 2 | 4/21 | -- | 0 | 0 | 4/22 | 0 | 4/18 | 0 | -- |
| Common Nighthawk | 5/ 5 | 5/ 5 | -- | 5/ 1 | 5/ 2 | -- | 5/ 5 | 0 | 5/14 | 5/18 | 5/11 | 5/19 | 5/20 | 0 | 0 | 5/ 2 | 5/ 2 | 5/ 2 | 0 | 0 |
| Chimney Swift | 4/15 | 4/17 | 5/ 2 | 4/23 | -- | 4/10 | 4/17 | 4/19 | 5/ 2 | 4/11 | 4/ 5 | 4/16 | 4/12 | 4/ 9 | 4/25 | 4/22 | 4/17 | 4/12 | 4/30 | 4/25 |
| Ruby-thr. Hummingbird | 4/30 | 5/ 2 | -- | 5/ 2 | -- | 5/ 2 | 4/23 | 5/ 2 | 5/ 5 | 4/26 | 4/23 | 4/28 | 5/ 2 | 5/ 1 | 4/22 | 4/19 | 5/ 2 | 5/ 2 | 4/23 | 5/ 2 |
| Eastern Kingbird | 4/26 | 4/28 | 5/ 2 | 4/18 | 5/ 2 | 5/ 2 | 4/25 | 4/25 | 4/21 | 4/21 | 4/20 | 4/27 | 5/ 1 | 5/ 1 | 5/ 2 | 4/24 | 4/28 | 5/ 2 | 4/19 | 5/ 2 |
| Gt. Crested Flycatcher | 4/20 | 5/ 2 | 5/ 2 | 5/ 2 | 5/ 2 | 5/ 2 | 4/26 | -- | 4/28 | 4/26 | 5/ 2 | 4/21 | 5/ 2 | 5/ 2 | 5/ 2 | 4/24 | 4/28 | 5/ 2 | 5/ 7 | -- |
| Acadian Flycatcher | 5/ 4 | 5/ 2 | 0 | -- | -- | 5/ 2 | 5/ 2 | -- | 5/ 2 | 4/30 | 5/ 2 | 5/ 2 | 5/ 2 | 5/ 2 | -- | 4/29 | 5/ 2 | 4/25 | -- | -- |
| Trail's Flycatcher | -- | 5/ 3 | -- | 0 | 0 | 0 | 6/ 6 | 0 | 6/ 9 | 5/ 2 | 5/ 2 | 0 | 5/ 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Least Flycatcher | -- | 5/ 2 | 5/ 2 | 0 | 0 | 0 | 5/ 2 | 0 | 5/ 3 | 5/ 2 | 5/ 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Eastern Wood Pewee | 5/ 4 | 5/ 2 | 5/ 2 | 5/ 2 | -- | 5/ 2 | 5/ 2 | -- | 5/ 2 | 4/26 | 5/ 2 | 5/ 2 | 5/ 2 | 5/ 2 | 5/ 2 | 4/29 | 5/ 2 | 5/ 2 | 5/ 2 | -- |
| Bank Swallow | -- | 4/28 | 0 | 0 | 0 | 5/ 2 | 4/26 | 4/19 | 4/29 | 0 | 4/ 9 | 5/ 2 | 4/ 4 | 4/30 | 4/ 9 | 5/ 2 | 0 | 5/ 2 | 4/19 | -- |
| Rough-winged Swallow | 4/14 | 4/18 | 4/18 | 4/20 | -- | -- | 3/30 | -- | -- | 4/10 | 4/20 | 4/ 5 | 4/18 | -- | 4/21 | 4/ 1 | -- | 5/ 2 | 0 | -- |
| Barn Swallow | 4/ 8 | 4/ 4 | 4/17 | 4/15 | 4/30 | -- | 4/ 4 | -- | 4/ 4 | 4/ 5 | 3/30 | 4/ 5 | 4/ 3 | 4/18 | 4/ 3 | 4/ 1 | 3/28 | 4/ 4 | 4/ 1 | -- |
| Purple Martin | 3/27 | 4/ 5 | 5/ 2 | -- | 4/29 | -- | 4/ 8 | -- | -- | 4/ 5 | 3/31 | 4/ 5 | 4/ 3 | 4/30 | 4/ 4 | -- | 3/17 | 3/27 | 4/18 | -- |
| Blue Jay | 4/27 | 4/24 | W | W | W | W | 4/22 | 4/25 | 4/24 | 4/29 | 4/22 | W | 4/19 | 4/29 | 4/20 | W | 4/26 | W | W | W |
| House Wren | 4/21 | 4/24 | 4/18 | 5/ 2 | 5/ 2 | 5/ 2 | 4/24 | 4/25 | 4/22 | 4/18 | 4/18 | 4/23 | 5/ 5 | 5/ 1 | 4/24 | 4/23 | -- | 4/18 | 4/19 | -- |
| Long-billed Marsh Wren | -- | 5/ 2 | 0 | 0 | 0 | 0 | 5/ 2 | 0 | 0 | 5/10 | 5/ 2 | 4/28 | 5/ 2 | 0 | 5/ 2 | 5/ 2 | 0 | 5/ 2 | 0 | -- |
| Catbird | 4/27 | 4/25 | 5/ 2 | 4/23 | 5/ 2 | 5/ 2 | 4/25 | 5/ 2 | 4/25 | 4/25 | 4/29 | 4/24 | 4/16 | 5/ 1 | 5/ 2 | 4/24 | 4/28 | 5/ 2 | 4/22 | 4/25 |
| Brown Thrasher | 4/ 7 | 4/15 | 4/17 | 4/12 | -- | -- | 3/28 | -- | 4/15 | 4/15 | 4/ 8 | 4/ 1 | 4/12 | 5/ 2 | 4/20 | -- | 4/13 | 4/18 | 4/ 1 | -- |
| Wood Thrush | 4/25 | 4/24 | 5/ 2 | 5/ 2 | 5/ 2 | 5/ 2 | 4/22 | 4/24 | 4/23 | 4/24 | 4/24 | 4/22 | 4/25 | 4/28 | 4/28 | 4/21 | 4/18 | 4/18 | -- | -- |
| Hermit Thrush | -- | 4/16 | -- | -- | -- | -- | 4/10 | 4/19 | -- | 3/31 | -- | -- | 4/16 | -- | -- | W | W | W | 4/26 | W |
| Swainson's Thrush | 5/ 6 | 5/ 8 | 5/17 | 0 | 0 | 0 | 5/ 2 | 5/ 2 | 5/ 2 | 5/ 2 | 5/ 2 | 5/ 8 | -- | 0 | 5/10 | -- | 0 | 5/ 2 | 5/14 | 5/ 9 |
| Gray-cheeked Thrush | -- | 5/ 2 | 5/17 | 5/ 9 | 0 | 0 | -- | 0 | 0 | 5/ 2 | 5/ 2 | 5/ 2 | 0 | 0 | 0 | 0 | 0 | 5/ 2 | 0 | 5/10 |
| Veery | 5/ 3 | 5/ 2 | 5/ 2 | 0 | 0 | 5/ 2 | 5/ 2 | 0 | 4/26 | 5/ 2 | 4/28 | 4/30 | 5/ 3 | 0 | 5/ 2 | 5/ 2 | 5/ 8 | 0 | 5/ 8 | 5/ 9 |
| Blue-gray Gnatcatcher | 4/14 | 4/18 | 4/18 | 4/16 | -- | -- | 4/18 | 4/25 | 4/ 5 | 4/11 | 4/17 | 4/16 | 4/12 | 4/28 | 5/ 2 | 4/11 | -- | 4/18 | 4/18 | -- |
| Ruby-crowned Kinglet | 4/122 | 4/15 | 4/18 | 4/12 | -- | -- | 4/ 4 | 4/19 | 4/ 7 | 4/11 | 4/20 | -- | 4/16 | 4/15 | -- | -- | W | W | W | W |
| Cedar Waxwing | -- | 4/20 | -- | 5/ 2 | -- | -- | 3/23 | 5/ 2 | 4/11 | 4/30 | 5/ 2 | 5/ 2 | 4/11 | 0 | 3/ 5 | -- | 5/ 1 | 0 | 0 | 0 |
| White-eyed Vireo | 4/26 | 4/25 | 5/ 2 | 0 | 0 | 5/ 2 | 5/ 2 | 4/24 | 4/25 | 4/25 | 5/ 1 | 4/21 | 4/16 | 5/ 2 | 5/ 2 | 4/18 | 4/28 | 4/18 | 4/18 | 4/25 |

| | Median | | Garr | Alle | Wash | Fred | Balt | Harf | Howd | Mont | Pr.G | Anne | S.Md | Cecl | Kent | Caro | Talb | Dorc | Somr | Worc |
|--------------------------|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | 10-yr | 1970 | | | | | | | | | | | | | | | | | | |
| Yellow-throated Vireo | 4/28 | 4/28 | 5/2 | 4/26 | -- | 5/2 | 5/2 | 5/2 | 4/26 | 4/26 | 4/28 | 4/26 | 4/25 | -- | -- | 5/1 | -- | 5/2 | -- | 4/25 |
| Solitary Vireo | 1/26 | 5/25 | 4/18 | 0 | 0 | 0 | 4/26 | 4/25 | 4/25 | 5/2 | 5/2 | 4/22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Red-eyed Vireo | 4/28 | 5/2 | 5/2 | 5/7 | 5/2 | 5/2 | 5/2 | 5/2 | 4/29 | 4/25 | 4/28 | 4/26 | 5/2 | 5/2 | 5/2 | 4/24 | 4/28 | 5/2 | 5/2 | 4/25 |
| Warbling Vireo | 5/2 | 5/2 | 0 | 5/12 | 4/29 | 5/2 | 4/30 | 4/25 | 5/2 | 4/25 | 5/2 | 0 | 0 | 5/2 | 4/26 | 0 | 0 | 0 | 0 | 5/2 |
| Black-&-white Warbler | 4/22 | 4/25 | 5/2 | 5/2 | 5/2 | 5/2 | 4/9 | 5/2 | 4/25 | 4/18 | 4/20 | 4/21 | 4/16 | 5/2 | 4/15 | 4/23 | 5/2 | 4/18 | -- | 4/25 |
| Prothonotary Warbler | 4/26 | 4/26 | 0 | 0 | 5/2 | -- | 4/5 | 4/19 | 0 | 4/19 | 4/22 | 5/2 | 4/25 | 0 | 5/2 | 4/27 | 5/2 | 5/2 | -- | 4/25 |
| Worm-eating Warbler | 5/2 | 4/28 | 0 | -- | -- | -- | 4/29 | -- | 5/2 | 4/26 | 4/25 | 4/21 | 5/10 | 0 | 0 | 5/2 | 4/28 | 5/2 | -- | 4/25 |
| Golden-winged Warbler | 5/4 | 5/2 | 5/2 | 5/2 | 5/2 | -- | 5/2 | 0 | 5/2 | 4/30 | 5/5 | 5/2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Blue-winged Warbler | 5/3 | 5/2 | 5/2 | 5/2 | 0 | 5/2 | 5/2 | 5/2 | 4/29 | 4/30 | 5/2 | 5/1 | 5/3 | 0 | 0 | 5/1 | 0 | 0 | 0 | 0 |
| Tennessee Warbler | -- | 5/2 | 0 | 0 | 0 | 0 | 0 | 4/24 | 0 | 4/26 | 5/7 | 5/2 | 5/14 | 0 | 5/2 | 0 | 0 | 0 | 0 | 5/9 |
| Nashville Warbler | 5/3 | 5/2 | 5/2 | 0 | 0 | 5/2 | 4/25 | 4/29 | 5/2 | 4/28 | 0 | 5/2 | 0 | 5/8 | 5/6 | 0 | 0 | 0 | 0 | 5/9 |
| Parula Warbler | 1/25 | 5/2 | 5/2 | 5/2 | 5/2 | 5/2 | 4/26 | 4/25 | 5/5 | 4/18 | 4/17 | 4/22 | 4/18 | 5/3 | 5/2 | 4/28 | 5/2 | 5/9 | 5/2 | 4/25 |
| Yellow Warbler | 4/27 | 4/29 | 5/2 | 4/22 | 4/30 | 5/2 | 4/5 | 5/2 | 5/2 | 4/26 | 5/1 | 4/30 | 4/26 | 4/27 | 4/5 | 4/28 | 5/2 | 5/2 | 4/22 | 4/25 |
| Magnolia Warbler | 5/4 | 5/7 | 5/2 | 0 | 0 | 5/2 | 4/29 | 5/2 | 5/9 | 5/2 | 5/2 | 5/9 | 5/10 | 0 | 5/12 | 5/7 | 0 | 0 | 5/9 | 5/9 |
| Cape May Warbler | 5/4 | 5/2 | 5/2 | 0 | 0 | 5/2 | 5/8 | 0 | 5/2 | 4/26 | 5/2 | 5/1 | 0 | 0 | 5/8 | 4/28 | 0 | 0 | 0 | 5/9 |
| Black-thr. Blue Warbler | 5/2 | 5/2 | 5/2 | 5/8 | 0 | 5/2 | 4/29 | 0 | 4/29 | 4/25 | 5/2 | 5/1 | 5/3 | 5/2 | 5/2 | 4/30 | 5/2 | 0 | 0 | 5/9 |
| Myrtle Warbler | 4/16 | 4/18 | 4/18 | 4/13 | -- | -- | 4/18 | 4/19 | 4/25 | 4/4 | 4/17 | W | 4/18 | 4/28 | 4/24 | W | W | W | 4/18 | W |
| Black-thr. Green Warbler | 5/2 | 5/1 | 5/2 | -- | 5/1 | -- | 4/25 | 0 | 4/29 | 4/26 | 5/1 | 5/2 | 5/3 | 0 | 0 | 4/28 | 0 | 0 | 0 | 5/9 |
| Cerulean Warbler | 5/3 | 5/2 | 5/2 | 5/7 | -- | 5/2 | 4/29 | 4/25 | 5/2 | 4/18 | 5/1 | 5/2 | 0 | 5/8 | 0 | 0 | 0 | 0 | 0 | 0 |
| Blackburnian Warbler | 5/4 | 5/2 | 5/2 | -- | -- | 5/2 | 5/2 | 0 | 5/6 | 4/19 | 5/2 | 5/2 | 5/3 | 0 | 0 | 5/8 | 0 | 0 | 0 | 5/8 |
| Yellow-thrtd. Warbler | 4/19 | 4/27 | 0 | -- | 0 | 0 | 0 | 0 | 5/2 | 4/29 | 0 | 0 | 4/18 | 0 | 5/2 | 0 | -- | 4/5 | 4/25 | -- |
| Chestnut-sided Warbler | 5/4 | 5/2 | 5/2 | 5/2 | -- | 5/2 | 4/30 | 5/2 | 5/2 | 4/28 | 5/2 | 5/1 | 5/6 | 4/28 | 5/2 | 5/2 | 0 | 0 | 0 | 5/9 |
| Bay-breasted Warbler | -- | 5/2 | 5/17 | 0 | 0 | 5/2 | 5/2 | 0 | 5/2 | 5/2 | 5/2 | 5/2 | -- | 0 | 5/16 | 0 | 0 | 0 | 0 | 5/9 |
| Blackpoll Warbler | 5/6 | 5/2 | 0 | 0 | 0 | 0 | 4/30 | 5/2 | 5/6 | 5/2 | 5/2 | 5/2 | 5/9 | 4/28 | -- | 5/2 | 5/2 | 5/9 | 5/16 | 5/2 |
| Pine Warbler | 3/30 | 3/31 | 5/2 | 4/16 | 0 | 0 | 0 | 0 | 4/3 | -- | 3/13 | 4/22 | 3/28 | 3/30 | -- | 4/4 | -- | 3/27 | 3/31 | 3/23 |
| Prairie Warbler | 4/25 | 4/25 | 5/2 | -- | -- | 5/2 | 4/29 | -- | 4/25 | 4/22 | 4/24 | 4/26 | 4/18 | -- | -- | 4/24 | -- | 5/2 | 4/20 | -- |
| Palm Warbler | -- | 4/16 | 0 | 0 | 0 | -- | 4/15 | 0 | 4/18 | 4/4 | 0 | 4/18 | 4/16 | 0 | -- | -- | -- | 0 | -- | -- |
| Ovenbird | 4/27 | 4/25 | 5/2 | 5/2 | -- | 5/2 | 4/25 | 4/25 | 4/23 | 5/2 | 4/20 | 4/25 | 4/25 | 5/2 | 5/8 | 4/25 | 5/2 | 4/18 | 4/22 | 4/25 |
| Northern Waterthrush | 5/2 | 5/2 | -- | 4/20 | 0 | 5/2 | 5/2 | 0 | 5/2 | 4/25 | 4/25 | 4/26 | 0 | 0 | 5/2 | -- | 0 | 0 | 0 | 5/8 |
| Louisiana Waterthrush | 4/14 | 4/16 | 4/18 | 4/1 | 0 | -- | 4/12 | 4/19 | 4/26 | 4/11 | 4/9 | 4/16 | 4/5 | 5/2 | 0 | 4/28 | 0 | 0 | -- | -- |
| Kentucky Warbler | 5/3 | 5/2 | 0 | 0 | 0 | 5/2 | 4/29 | 5/2 | 4/28 | 4/26 | 4/30 | 4/26 | 5/3 | 5/2 | 5/2 | 4/25 | 5/2 | 5/2 | -- | 5/8 |
| Mourning Warbler | -- | 5/11 | -- | 0 | 0 | 0 | 5/19 | 0 | 5/22 | 0 | 5/11 | 0 | 5/2 | 0 | 0 | 0 | 0 | 0 | 0 | 5/10 |
| Yellowthroat | 4/21 | 4/21 | 5/2 | 4/26 | 5/2 | 5/2 | 4/18 | 4/25 | 4/21 | 4/11 | 4/19 | 4/5 | 4/18 | 4/28 | 5/2 | 4/16 | 4/24 | 4/18 | 4/18 | -- |
| Yellow-breasted Chat | 5/2 | 5/2 | 5/2 | 5/2 | 5/2 | 5/2 | 5/2 | 4/25 | 5/2 | 4/30 | 5/2 | 4/25 | 5/2 | 5/2 | 5/2 | 4/29 | 5/2 | 5/2 | 4/30 | 5/8 |
| Hooded Warbler | 4/29 | 4/30 | 5/2 | -- | -- | 5/2 | 4/26 | -- | 4/25 | 4/26 | 4/30 | 4/25 | 4/25 | 5/2 | 0 | 5/1 | 0 | 0 | -- | 5/2 |
| Wilson's Warbler | -- | 5/2 | 0 | 5/19 | 0 | -- | 5/2 | 5/2 | -- | 5/2 | 5/2 | -- | -- | 0 | 5/2 | 0 | 0 | 0 | 0 | 5/9 |
| Canada Warbler | 5/6 | 5/2 | 5/2 | 5/7 | 0 | 5/2 | 4/29 | 0 | 5/2 | 4/30 | 5/8 | 4/28 | 5/10 | 0 | 5/2 | 5/11 | 0 | 5/9 | 0 | 5/9 |
| American Redstart | 4/29 | 5/2 | 5/2 | 5/2 | 5/2 | 5/2 | 4/26 | 4/25 | 5/2 | 4/19 | 5/1 | 5/2 | 5/3 | 5/2 | 5/2 | 5/2 | -- | 5/2 | -- | 4/25 |
| Bobolink | 5/6 | 5/2 | 5/2 | 0 | 0 | -- | 5/2 | 0 | 5/16 | 5/2 | 5/2 | 5/11 | 5/9 | 0 | 5/2 | 5/2 | 0 | 5/9 | 0 | 0 |
| Orchard Oriole | 5/2 | 5/2 | 0 | 5/2 | 0 | 5/2 | 5/2 | 5/2 | 4/25 | 4/26 | 5/2 | 4/25 | 5/2 | 4/23 | 4/26 | 4/22 | 5/2 | 5/2 | 4/24 | 5/2 |
| Baltimore Oriole | 4/30 | 4/30 | 5/2 | 4/29 | 4/29 | 5/2 | 4/22 | 5/2 | 4/28 | 4/25 | 5/2 | 4/26 | 5/3 | 4/30 | 5/2 | 4/24 | 5/2 | 5/2 | 4/27 | -- |
| Scarlet Tanager | 4/28 | 5/2 | 5/2 | 5/2 | 5/2 | 5/2 | 4/15 | 5/2 | 4/19 | 4/26 | 4/22 | 4/26 | 5/2 | 5/2 | 5/2 | 4/28 | 4/28 | 5/2 | -- | -- |
| Summer Tanager | 5/3 | 5/2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4/26 | 5/11 | -- | 5/9 | 0 | 4/24 | 4/29 | 5/2 | 5/2 | 0 | 5/9 |
| Rose-breasted Grosbeak | 5/4 | 5/2 | 5/2 | 5/2 | 0 | 5/2 | 4/29 | 0 | 4/29 | 4/25 | 5/1 | 5/2 | 5/7 | 0 | 5/2 | 5/6 | 5/2 | 0 | 0 | 5/9 |
| Blue Grosbeak | 4/30 | 5/2 | 0 | 0 | 0 | 0 | 5/2 | 5/2 | 5/2 | -- | -- | 4/28 | 5/2 | 0 | 5/2 | 4/25 | 5/2 | 5/2 | -- | 4/19 |
| Indigo Bunting | 5/1 | 4/30 | 5/2 | 5/2 | 5/9 | 5/2 | 4/22 | 5/2 | 4/30 | 4/26 | 4/23 | 4/29 | 4/25 | 4/28 | 5/2 | 4/29 | 5/2 | 5/2 | 4/21 | 5/9 |
| Savannah Sparrow | -- | 4/17 | -- | -- | 5/2 | -- | 5/2 | 0 | 5/2 | 4/4 | -- | 4/7 | 4/12 | 0 | -- | -- | -- | W | 4/22 | 3/23 |
| Grasshopper Sparrow | 4/30 | 5/2 | 5/2 | -- | 5/2 | 5/2 | 5/2 | 5/2 | 5/2 | 5/2 | 5/2 | 4/28 | 4/12 | 5/2 | 4/14 | 4/21 | 4/25 | 5/2 | -- | -- |
| Vesper Sparrow | 3/30 | 4/10 | 4/18 | 4/17 | -- | -- | -- | -- | -- | 4/9 | -- | 3/27 | 4/11 | -- | -- | 3/28 | -- | 0 | -- | -- |
| White-crowned Sparrow | 5/4 | 5/2 | 5/2 | 5/2 | 5/2 | 5/2 | 5/2 | 0 | 4/25 | 5/2 | 5/2 | 5/2 | 4/23 | W | -- | 4/18 | 5/2 | 3/27 | 0 | -- |
| Swamp Sparrow | -- | 4/13 | 4/18 | 4/1 | -- | -- | 4/13 | 4/19 | 4/13 | 4/4 | 4/9 | -- | 4/16 | W | -- | -- | -- | W | 4/25 | -- |

because of cold temperatures in the first half of April and unfavorable winds during nearly all of the middle third of the month, migration was delayed. The early and mid-April species were the ones affected. A gradual warming trend in the states to the south of us, on the other hand, accelerated the phenology and probably had considerable effect on telescoping the peak migration of insectivorous birds. For example, in the third week of April, when the temperature averaged about 3° below normal in most of Maryland, it was 3° to 6° above normal from Texas to Florida. In the fourth week, when the mercury in Maryland finally reached normalcy for the first time since February, it was 6° to 9° above in a band from Texas and Florida into the Carolinas--the area in which our incoming migrants were located. Thus, a good sprinkling of the mid-May migrants were moving into Maryland in the closing days of April and the first week of May. This explains the appearance of Swainson's Thrushes in 7 counties, Blackpoll Warblers in 9, Wilson's Warbler in 4, Tennessee Warbler in 3 and Philadelphia Vireo and Traill's Flycatcher in 2 counties on the early date of May 2.

There were many good nights for migration in the first half of May, with the result that most northbound birds had left the Free State before the last week of May. Late May birders found almost nothing but summer resident species. The Blackpoll was the only transient species of warbler to be identified in Maryland after May 29. In summary, April averaged a degree or two below normal and May averaged 3 degrees above normal. Precipitation was above normal in April, only half of normal in May, and then above normal in June. Ground water conditions were excellent in June. On top of excellent growing conditions there was a bonus crop of 17-year cicadas; so the nesting birds should have fared better than in a "normal" year.

The extreme migration dates reported for each county are summarized in Tables 1 and 2. The counties are arranged from west to east along the Pennsylvania border, then southward through the Western Shore, and finally from north to south through the Eastern Shore. All but 5 of Maryland's 23 counties are included in Table 1. Washington and Harford Counties were omitted from Table 2 for want of sufficient records; and for the same reason Allegany was combined with Frederick, and Cecil with Kent.

The median date for each species in the tables was obtained by arranging the dates chronologically and taking the middle date; any exceptionally early or late date does not affect the median to the extent it would the arithmetic mean. The median is computed only if there are significant dates for 5 or more counties. The ten-year median given in the left column is the middle date from among the median dates for ten years. For the more common species the ten-year period used was 1956-1965; for other species, dates for earlier or later years were included until a sample of ten years was reached. A zero in the table means that no report was received; a dash means that the species was reported, but not on a significant migration date; and a "w" signifies that the beginning of migration could not be detected because of the presence of wintering birds. Departure dates for summer resident species such as the American Redstart are obtained from banders who capture birds that have

Table 2. Spring Departure Dates, 1970

| Species | Median | | Garr | Al&F | Balt | Howd | Mont | Pr.G | Anne | S.Md | Ce&K | Caro | Talb | Dorc | Somr | Worc |
|------------------------|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | 10-yr | 1970 | | | | | | | | | | | | | | |
| Common Loon | 5/9 | 5/9 | 5/2 | -- | 6/15 | 5/2 | 5/9 | 0 | 5/9 | 5/9 | 4/30 | 0 | 5/22 | 5/24 | 5/16 | 5/10 |
| Horned Grebe | -- | 5/2 | 4/18 | 0 | 4/10 | 4/20 | 5/2 | 4/21 | 5/9 | 5/2 | -- | 0 | 5/2 | 5/2 | -- | 5/9 |
| Double-cr. Cormorant | -- | 5/9 | 0 | 0 | 5/20 | 0 | 5/9 | 5/2 | 0 | 5/9 | 5/2 | 0 | 5/22 | 5/9 | 5/2 | 5/10 |
| Whistling Swan | 4/21 | 5/2 | 0 | -- | 5/2 | -- | 4/11 | 4/8 | 5/15 | 5/2 | 5/2 | 5/7 | 5/2 | 5/17 | -- | -- |
| Canada Goose | 4/30 | 5/2 | 5/2 | -- | 5/2 | 4/6 | 5/2 | 5/2 | -- | 3/25 | 5/8 | 5/21 | 5/2 | 5/17 | -- | 5/10 |
| Pintail | -- | 5/2 | 0 | -- | 4/18 | -- | -- | -- | -- | 5/2 | 4/20 | -- | 5/2 | -- | -- | 5/9 |
| Green-winged Teal | -- | 5/2 | 0 | -- | -- | -- | -- | 4/9 | -- | 5/2 | 4/8 | -- | 5/2 | 5/17 | -- | -- |
| Shoveler | -- | 5/2 | 5/2 | 0 | 0 | 0 | -- | 4/9 | -- | 5/2 | 0 | 0 | 0 | 5/9 | -- | 5/9 |
| Ring-necked Duck | -- | 4/14 | 0 | 4/5 | 4/11 | 4/21 | -- | 4/17 | -- | 5/9 | -- | -- | -- | 4/5 | -- | -- |
| Lesser Scaup | -- | 5/2 | 4/17 | 4/5 | 5/20 | 4/5 | -- | -- | 5/2 | 5/9 | 5/2 | 5/2 | 5/2 | 5/9 | 4/22 | -- |
| Bufflehead | -- | 5/2 | 5/2 | 4/5 | 5/2 | 0 | -- | 0 | 5/2 | 4/4 | 5/2 | 0 | 5/2 | -- | -- | -- |
| Ruddy Duck | -- | 5/6 | 0 | 0 | 5/20 | 0 | 4/4 | -- | -- | 5/9 | 5/2 | 0 | 5/2 | 5/9 | 4/22 | 5/9 |
| American Coot | -- | 5/2 | 0 | 3/24 | 5/2 | 4/13 | 5/10 | 5/2 | 5/2 | 5/2 | 5/2 | -- | 5/2 | 5/9 | -- | 5/10 |
| Semipalmated Plover | -- | 5/17 | 5/2 | 0 | 0 | 0 | 5/9 | 0 | 5/17 | 0 | 0 | 0 | 0 | 5/17 | 0 | 6/7 |
| Common Snipe | 5/2 | 5/2 | -- | 5/2 | 5/2 | 0 | 5/9 | 5/2 | 5/9 | 5/2 | 5/2 | 5/2 | 5/2 | 5/2 | -- | -- |
| Spotted Sandpiper | -- | 5/6 | 5/2 | 5/2 | 5/20 | 5/11 | 5/9 | 5/2 | 5/9 | 5/9 | 5/2 | 5/2 | 5/2 | 5/2 | 0 | 5/10 |
| Solitary Sandpiper | -- | 5/9 | 0 | 5/2 | 5/20 | 0 | 5/9 | 0 | 5/9 | 5/9 | 5/2 | 5/2 | 5/2 | 5/9 | 0 | 5/23 |
| Greater Yellowlegs | -- | 5/2 | 0 | 5/2 | 5/20 | 5/2 | 5/9 | 5/2 | 5/9 | 5/2 | 5/2 | 5/2 | 5/2 | 5/17 | 5/30 | 5/10 |
| Lesser Yellowlegs | -- | 5/2 | 0 | 5/2 | 5/2 | 0 | 5/9 | 0 | 5/9 | 5/2 | 5/2 | 5/2 | 5/2 | 5/17 | 5/16 | 5/10 |
| Least Sandpiper | -- | 5/10 | 0 | 0 | 5/20 | 0 | 5/9 | 0 | 5/17 | 5/2 | 5/2 | 5/8 | 0 | 5/17 | 5/12 | 5/10 |
| Semipalmated Sandpiper | -- | 5/14 | 0 | 0 | 0 | 0 | 0 | 0 | 5/18 | 0 | 5/2 | 5/2 | -- | 5/17 | 5/12 | 6/7 |
| Gt. Blk-backed Gull | -- | 5/2 | 0 | 0 | 0 | 0 | 0 | 0 | 5/9 | 5/2 | 5/2 | 4/16 | 5/22 | 5/2 | -- | 5/10 |
| Ring-billed Gull | -- | 5/2 | -- | 4/12 | 5/20 | -- | 5/9 | 5/2 | 5/9 | 5/2 | 5/2 | 5/2 | 5/2 | 5/2 | 5/2 | 5/10 |
| Caspian Tern | -- | 5/2 | 0 | 0 | 5/20 | 0 | 0 | 0 | 5/17 | 0 | 5/3 | 0 | 0 | 0 | 0 | 5/10 |
| Yellow-bell. Sapsucker | 4/24 | 5/2 | -- | 5/2 | 5/5 | 4/25 | -- | -- | 5/9 | 4/11 | 5/2 | -- | -- | -- | 4/21 | -- |
| Blue Jay | 5/14 | 5/10 | -- | 6/6 | 5/2 | 5/13 | 5/13 | 6/1 | 5/9 | 5/10 | 5/2 | 5/2 | -- | -- | 4/23 | -- |
| Red-breasted Nuthatch | -- | 5/2 | 5/2 | 5/17 | 5/9 | 4/26 | 5/16 | 4/27 | 5/9 | 5/9 | 5/2 | 5/2 | 5/2 | 5/2 | -- | 5/10 |
| Brown Creeper | 4/22 | 5/2 | 5/2 | -- | 5/2 | -- | 5/6 | -- | 5/2 | 4/4 | -- | 4/10 | 4/12 | -- | -- | 5/9 |
| Winter Wren | -- | 5/2 | 5/2 | -- | 4/18 | -- | 5/16 | -- | -- | 3/28 | 5/2 | -- | -- | -- | -- | -- |
| Hermit Thrush | 4/28 | 5/2 | -- | -- | 5/2 | -- | 4/28 | -- | 5/9 | 5/9 | 5/2 | -- | -- | 4/18 | 5/7 | -- |
| Swainson's Thrush | 5/24 | 5/21 | 5/17 | 0 | 5/21 | -- | 5/22 | 5/27 | -- | 5/24 | -- | 5/28 | 0 | 5/9 | 5/14 | 5/10 |
| Gray-cheeked Thrush | -- | 5/22 | 5/17 | -- | 5/26 | 0 | 5/31 | 5/29 | -- | 0 | 0 | 0 | 0 | 5/9 | 0 | 5/10 |
| Veery | -- | 5/15 | -- | -- | 5/15 | 5/14 | 5/27 | 5/27 | 5/9 | -- | 5/16 | -- | 0 | 0 | -- | 5/9 |
| Golden-crowned Kinglet | 4/11 | 4/12 | -- | 4/14 | -- | 4/12 | -- | 4/12 | -- | 4/9 | -- | 4/11 | -- | 4/18 | -- | -- |
| Ruby-crowned Kinglet | 5/2 | 5/2 | 5/2 | 4/23 | 5/8 | 5/2 | 5/2 | 5/2 | 5/2 | 4/25 | 5/2 | 5/8 | 5/2 | 4/18 | -- | 5/10 |
| Water Pipit | -- | -- | 0 | 5/2 | 0 | 0 | 5/2 | -- | -- | 5/2 | 5/2 | 0 | 0 | 0 | 0 | 0 |
| Cedar Waxwing | -- | 5/11 | -- | -- | 5/11 | -- | 5/20 | -- | 6/2 | 4/19 | -- | -- | 5/2 | 0 | 0 | 0 |
| Blue-winged Warbler | -- | 5/10 | -- | -- | 5/2 | 5/23 | 5/9 | 5/16 | 5/9 | 5/15 | 0 | 5/2 | 0 | 0 | 0 | 0 |
| Tennessee Warbler | -- | 5/12 | 5/17 | 0 | 0 | 0 | 5/5 | 5/16 | 5/9 | 5/17 | -- | 0 | 0 | 0 | 0 | 5/9 |
| Nashville Warbler | -- | 5/8 | 5/17 | 5/2 | 5/2 | 5/2 | 5/8 | 0 | 5/9 | 0 | 5/20 | 0 | 0 | 0 | 0 | 5/9 |
| Magnolia Warbler | 5/19 | 5/20 | -- | 6/6 | 5/20 | -- | 5/20 | 5/19 | 5/20 | 5/16 | 0 | 5/20 | 0 | 0 | 5/14 | 5/10 |
| Cape May Warbler | 5/10 | 5/9 | 5/17 | 5/2 | 5/8 | -- | 5/9 | 5/7 | 5/9 | 0 | -- | 5/16 | 0 | 0 | 0 | 5/10 |
| Blk-throated Blue Warb | 5/14 | 5/16 | 5/17 | -- | 5/20 | 5/8 | 5/16 | 5/16 | 5/9 | 5/9 | -- | 5/17 | -- | 0 | 0 | 5/10 |
| Myrtle Warbler | 5/10 | 5/10 | 5/5 | -- | 5/12 | 5/13 | 5/9 | 5/14 | 5/17 | 5/9 | -- | -- | -- | 5/9 | 5/2 | 5/10 |
| Blk-thr. Green Warbler | 5/21 | 5/16 | 5/17 | -- | 5/20 | 5/25 | -- | 5/19 | 5/9 | 5/9 | 0 | 5/13 | 0 | 0 | 0 | 5/10 |
| Blackburnian Warbler | -- | 5/9 | 5/17 | -- | 5/9 | 5/5 | 5/9 | 5/12 | 5/2 | 5/9 | 0 | 5/12 | 0 | 0 | 0 | 5/23 |
| Chestnut-sided Warbler | 5/13 | 5/10 | 5/17 | -- | 5/5 | -- | 5/9 | 5/16 | 5/9 | 5/9 | 0 | 5/17 | 0 | 0 | 0 | 5/10 |
| Bay-breasted Warbler | -- | 5/13 | 5/17 | -- | 5/20 | 0 | 5/9 | 5/19 | 5/9 | 5/9 | 0 | 5/16 | 0 | 0 | 0 | 5/10 |
| Blackpoll Warbler | 5/28 | 6/4 | 0 | 0 | 6/6 | 5/28 | 6/5 | 6/4 | 5/30 | 6/6 | 6/7 | 5/28 | -- | 5/9 | 5/16 | 6/4 |
| Palm Warbler | 5/4 | 5/2 | 0 | 5/2 | 4/19 | -- | -- | 0 | 5/2 | 5/9 | 5/2 | 5/2 | -- | 0 | -- | 5/10 |
| Northern Waterthrush | 5/17 | -- | -- | -- | 5/20 | -- | 5/18 | 5/29 | -- | 0 | -- | -- | -- | 0 | 0 | 5/10 |
| Wilson's Warbler | -- | 5/16 | 0 | 5/19 | 5/20 | 5/28 | 5/15 | 5/18 | 5/14 | 5/9 | -- | 0 | 0 | 0 | 0 | 5/9 |
| Canada Warbler | 5/20 | 5/20 | 5/17 | -- | 5/21 | 5/15 | 5/19 | 5/29 | 5/21 | 5/24 | -- | 5/20 | 0 | 5/9 | 0 | 5/10 |
| American Redstart | -- | 5/30 | -- | -- | -- | 5/30 | -- | 6/5 | -- | 6/6 | -- | 5/29 | -- | 5/9 | 5/16 | -- |
| Bobolink | -- | 5/16 | -- | -- | 5/16 | 5/22 | -- | -- | 5/9 | 5/23 | -- | -- | -- | 5/9 | 0 | 0 |
| Rusty Blackbird | -- | 5/2 | 4/18 | 5/2 | 5/2 | -- | 5/2 | 5/2 | 5/2 | 4/19 | 5/2 | -- | -- | 4/18 | -- | -- |
| Rose-br. Grosbeak | 5/12 | 5/10 | -- | -- | 6/6 | -- | 5/9 | 5/14 | 5/9 | 5/9 | 5/20 | 5/6 | -- | 0 | 0 | 5/10 |
| Evening Grosbeak | 5/6 | 5/6 | 5/2 | 5/8 | 5/3 | 4/25 | 5/10 | 5/12 | 5/6 | 5/14 | 5/3 | 5/11 | 5/2 | 3/27 | -- | 5/9 |
| Purple Finch | 5/3 | 5/2 | -- | 5/10 | 5/2 | 5/2 | 5/9 | 5/2 | 5/9 | 5/2 | 5/2 | 5/27 | -- | 0 | 0 | 0 |
| House Finch | -- | -- | 0 | -- | 5/2 | 0 | 4/12 | -- | -- | 0 | 5/2 | -- | -- | 0 | 0 | 0 |
| Pine Siskin | -- | 5/11 | 5/2 | 5/16 | 5/15 | 5/2 | 5/12 | 5/12 | 5/17 | 4/25 | 5/1 | 5/13 | -- | 5/2 | -- | 5/10 |
| Red Crossbill | -- | 5/20 | 5/17 | -- | 6/22 | 5/2 | 6/15 | 6/2 | 6/21 | 6/8 | 5/1 | 0 | 5/2 | 5/9 | 5/14 | 5/23 |
| White-winged Crossbill | -- | -- | 0 | 2/28 | 2/8 | 0 | 4/4 | -- | 2/1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Savannah Sparrow | 5/6 | 5/9 | -- | -- | 5/2 | 5/2 | 5/9 | 5/2 | 5/9 | 5/9 | 5/2 | 5/2 | -- | 5/9 | 5/14 | 5/10 |
| Slate-colored Junco | 5/1 | 5/2 | 4/18 | -- | 5/2 | 4/26 | 5/9 | 4/29 | 5/2 | 5/2 | -- | 5/8 | 5/2 | 4/26 | 4/18 | -- |
| Tree Sparrow | -- | -- | -- | -- | 4/7 | 4/18 | -- | 4/16 | 4/7 | -- | -- | -- | -- | -- | -- | -- |
| White-crowned Sparrow | 5/13 | 5/12 | -- | 5/3 | 5/16 | 5/16 | 5/18 | -- | -- | -- | 5/15 | 5/9 | 5/2 | 5/2 | 0 | -- |
| White-thr. Sparrow | 5/14 | 5/10 | 5/2 | 5/9 | 5/12 | 5/16 | 5/13 | 5/15 | 5/10 | 5/9 | 5/15 | 5/16 | 4/26 | 5/9 | 5/8 | 5/10 |
| Fox Sparrow | 4/4 | 4/4 | -- | 5/2 | 4/18 | 4/16 | 3/7 | 4/4 | -- | 3/23 | -- | -- | -- | -- | -- | -- |
| Swamp Sparrow | 5/7 | 5/9 | -- | -- | 5/20 | -- | 5/9 | 5/16 | 5/9 | 5/9 | 5/2 | 5/10 | 4/26 | 5/2 | 5/3 | 5/9 |

heavy fat deposits and so are clearly migrating rather than nesting individuals.

The 1,500 or more dates shown in these tables were gleaned from many thousands of individual records from scores of observers. Unfortunately, it is not practical to acknowledge the reports individually, but we do wish to acknowledge those cooperators who furnished the lion's share of the reports for each county represented in the tables. Garrett County--Carl W. Carlson, Glenn Austin; Alleghany--James Paulus; Washington--Mrs. Alice Mallonee, Dr. Ralph Stauffer; Frederick--Dr. John W. Richards, Mr. and Mrs. Edwin T. McKnight; Baltimore City and County--Douglas Hackman, David Holmes, Haven Kolb, Stephen W. Simon, Mrs. Richard D. Cole; Harford--Dr. Edgar E. Folk, Douglas Hackman; Howard--Mrs. Dorothy Rauth, Mrs. Rosamond Munro, Chandler and George Robbins; Montgomery--Mrs. John Frankel, Robert W. Warfield, Dr. Fred Evenden, Nell Cooley, Mrs. Sarah Baker, Robert W. Pyle, Catherine and Carroll Pinckard; Prince Georges--Mr. and Mrs. Chandler S. Robbins, John H. Fales, Danny Bystrak, Glenn Austin, C. Edward Addy; Anne Arundel--Prof. Harold Wierenga, Dr. Lawrence Murphy, Danny and Paul Bystrak; Southern Maryland (mostly Calvert County--John H. Fales, but including a few observations from Charles--Edward H. Schell and Catherine and Carroll Pinckard, and St. Marys--James M. Banagan); Cecil--Dr. Edgar E. Folk; Kent--Mr. and Mrs. Edward Mendinhall; Caroline--Marvin W. Hewitt, Mr. and Mrs. A. J. Fletcher, Wilbur Rittenhouse, Alicia Knotts, Ethel Engle; Talbot--Jan Reese, Richard L. Kleen; Dorchester--Harry T. Armistead, Carl W. Carlson; Somerset--Mrs. Richard D. Cole, Mr. and Mrs. Gordon Hackman, Paul and Danny Bystrak; Worcester--Mr. and Mrs. Walter Bohanan, Mr. and Mrs. Lyman Bryan, Robert W. Warfield, Carl W. Carlson, Vernon M. Kleen, David W. Holmes.

Shearwaters and Petrels. At least 7 Sooty Shearwaters and 20 Wilson's Petrels were seen off Ocean City on May 23 by Bob Pyle, Fred Evenden and other participants in the Montgomery Chapter boat trip; and on June 20, 127 Wilson's Petrels and 1 Sooty Shearwater were counted 10 miles off Ocean City by Carl Carlson.

Cormorants and Pelican. The now famous White Pelican at Blackwater Refuge (Maryland Birdlife 26:3-4) was seen again on Apr. 12 (Carl W. Carlson), and for the last time in the first week of May (W. H. Julian). Double-crested Cormorant migration was observed again over Irish Grove Wildlife Sanctuary on May 2, when Mrs. Cole and Gordon and Betty Hackman estimated 150 individuals.

Hérons and Egrets. The first Yellow-crowned Night Heron of the season was spotted at Lake Roland in the Baltimore suburbs on Apr. 12 (Rosalie Archer). From Apr. 22 on at least 3 were found there regularly. Note an all-time high tally of 8 in the Baltimore column of the May 2 Statewide Bird Count (Hackman, Maryland Birdlife 26: 39-51). A Louisiana Heron identified on May 2 at Elliott is the first spring observation for Dorchester County (Armistead). Cattle Egrets turned up in ten counties between Mar. 23 and June 2, with most of the reports concentrated in the period Apr. 17 to May 2. The only spring sightings west of Chesapeake Bay were near Coltons Point in St. Marys County (25 on May 2 by

James Banagan), at Plum Point in Calvert County (Apr. 27, John H. Fales), Sandy Point State Park (Apr. 21 to May 4, Harold Wierenga), Patuxent Wildlife Research Center (2 on Apr. 28, Elwood Martin), and Fulton in Howard County (1 on June 2 by Mrs. John Janney). As many as 32 Snowy Egrets were counted at Irish Grove Sanctuary on Apr. 1 (Bystraks), and from 1 to 5 individuals wandered as far north as Baltimore (May 1, Douglas Hackman), Queen Annes, Caroline and Talbot Counties before re-treating to their nesting colonies. In addition to the Glossy Ibis sightings in five counties on the Statewide Bird Count, 5 were seen at Blackwater Refuge on May 28 by Refuge Manager Bill Julian. As an example of how poorly we know the nesting dates of some of our egrets and ibis, Mitchell Byrd and Robert Kennedy banded young Glossy Ibis at the South Point colony on May 23, a whole week ahead of the earliest published egg date for Maryland. On the same day they estimated 80 pairs of Common Egrets, some with nestlings that were nearly half grown. On June 27, Dr. Robert L. Pyle estimated 200+ Common Egrets, 50+ Black-crowned Night Herons, 15+ Little Blue Herons and 20+ Cattle Egrets at the St. Catherines Island heronry in St. Marys County.

Waterfowl. By checking various points along the Potomac River, James Paulus discovered a good concentration spot for diving ducks on the lagoon in back of the glass plant just above lock 75 on the C & O Canal near Old Town in Allegany County. His list for Apr. 5 included 11 Canvasbacks, 58 Lesser Scaup, 17 Ring-necks, 3 Buffleheads and 4 Hooded Mergansers as well as several dabbling ducks and a dead Whistling Swan.

Kites and Hawks. One of the big surprises of the season was the Swallow-tailed Kite carefully studied in flight over Brooklandville in Baltimore County on May 2 by Dr. Walter E. Dandy, Jr. and Dr. Jerry Johnson and previously remarked upon by Hackman in his writeup of the Statewide Bird Count (Maryland Birdlife 26: 41). Also of interest on the Statewide Count was the total of 21 Bald Eagles, 12 of which were found in Dorchester County. An Osprey that returned to Talbot County on Feb. 28 broke the State arrival date for this species (Jan Reese). The Rough-legged Hawk that wintered at Irish Grove Sanctuary was last observed on Apr. 1 (Bystraks), and the last for the State were found in Dorchester County on Apr. 4 (Armistead) and at Annapolis on Apr. 25 (Carlson). Robbins and Carl Buchheister were astonished on May 7 to see a Harris' Hawk at the Patuxent Wildlife Research Center. It seems that 2 birds of this South Texas species have recently escaped from Maryland falconers. Watch for them.

Rails and Gallinules. According to Armistead, Soras were more in evidence than usual this spring. Doug Hackman heard 6 calling in the Gunpowder Marsh on May 2 and Jim Roelle and Robbins found at least 3 still present at Carroll Island in Baltimore County on May 20. A Common Gallinule, obviously a transient, was discovered under a yew bush in the garden of Mrs. Sanford Kotzen in Glen Arm, Baltimore County, Apr. 20.

Shorebirds. Harold Wierenga had the good judgment to visit Sandy Point during the stormy morning of May 17 while an energetic cold front accompanied by a wide band of rain was passing by. He was rewarded by

250 Dunlins, 24 Semipalmated Sandpipers, 15 Semipalmated Plovers, 3 Least Sandpipers, 2 Ruddy Turnstones, 2 Knots (probably the first for Anne Arundel County), a Black-bellied Plover, and 150 Dowitchers (presumably all Short-billed). On the following day only 8 peep and 1 Black-belly remained. The only other spring sightings of dowitchers away from the coast this year were single Short-bills in Dorchester County on May 17 (Armistead) and at Carroll Island on May 20 (Roelle and Robbins). Purple Sandpipers remained in full force at Ocean City Inlet through May 16, when 127 were counted by Edwin T. McKnight and Robert L. Smith; an unspecified number were still present on May 23 (Pyle). One of Maryland's rarest birds, the Black-necked Stilt, was identified at Blackwater Refuge on May 1 by the William Baumanns of New York City. A new species for the Dorchester County list was a Wilson's Phalarope noted in the Blackwater River marsh south of the Refuge on May 17 by Armistead.

Gulls and Terns. Marcia Lakeman had the good fortune to spot 2 Little Gulls at Ocean City on Apr. 7. These were the only European gulls to be identified in Maryland in the winter of 1969-70. A huge concentration of Bonaparte's Gulls for Allegany County (161 individuals) was checked by Jim Paulus at the glass plant above lock 75 near Old Town on Apr. 12. By May 23 the gull nesting season on Robins Marsh in Chincoteague Bay was well under way. Dr. Byrd and Robert Kennedy estimated 1,200 pairs of Laughing Gulls, most with full clutches of 3 eggs. Although only 7 nests of Herring Gulls were found with eggs on this date, a repeat visit on May 31 revealed 28 occupied Herring Gull nests, 4 of which contained either newly hatched young or pipped eggs. On June 27 Dr. Pyle saw a Royal Tern at St. Catherines Island.

White-winged Dove. New for Maryland's Hypothetical List was a White-winged Dove seen 1 mile north of Marumsco, Somerset Co., on June 10 (Robbins).

Chuck-will's-widow. For some unknown reason this species, so common in the loblolly pine woods of Maryland's lower Coastal Plain, is rarely heard north of its breeding range, even during the peak of migration. And those few records from farther north have all been in the Coastal Plain. This year Charles Buchanan heard a Chuck-will's-widow singing for 7 minutes at 4:45 on the morning of June 3 at his home adjacent to Bryn Mawr School in Baltimore. And on May 11, Mrs. Rosamond Munro heard one in full song at her home on Rocky Gorge Reservoir at Fulton (elevation 370 feet) in Howard County--well up in the Piedmont.

Flycatchers and Swallows. A real rarity for the Eastern Shore in spring was an Olive-sided Flycatcher sighted on the May 2 count in Kent County by Kay McAlpin and documented by a detailed written account. I would like to mention in this connection that many reports of rarities go forever unmentioned because the observer fails to submit sufficient documentation. Cliff Swallows had built new nests under Browns Bridge at the upper end of Rocky Gorge Reservoir by Apr. 29 (Mrs. Harry Rauth), and 30 to 40 nests were under the Rt. 140 bridge over Patapsco Reservoir on May 2 (Mrs. Elmer Worthley). It is encouraging to see this species spreading into new areas of the Maryland Piedmont after it was nearly

extirpated from the State with the passing of unpainted barns a few decades ago. Its relative the Tree Swallow is another species benefiting from man's activities. Following a report from Bob Smith that the Tree Swallow was nesting in an artificial structure at Hughes Hollow, 4 miles up the Potomac from Seneca, Edwin McKnight investigated on May 31 and found 2 occupied nests. When he and Mrs. McKnight returned on June 14 they saw young in both nests. This is the first nesting of the Tree Swallow in the Maryland Piedmont, the nearest known nests being 32 miles away at the Patuxent Wildlife Research Center.

Ravens and Jays. Common Ravens were sighted in all three of the western counties: 2 at Hagerstown Community College on Apr. 18 (Dr. Lawrence Murphy), 1 at Cumberland the next day (Mel Garland) and 3 between Herrington Manor and Accident on May 2 (Carlson). Did you notice the Blue Jay total of 14,591 on the May 2 Statewide Bird Count? Tallies of 1,000 or more were reached in Montgomery, Prince Georges, Anne Arundel, and Baltimore Counties, with a maximum of 4,564 in Baltimore (2,269 of which were enumerated by Doug Hackman as they flew over the Gunpowder Marsh between 6 and 9 a.m.). This year the flight ended rather abruptly and in several counties no confirmed transients were encountered after May 2. In only two counties were flocks of stragglers still moving northward in early June.

Wrens and Thrushes. Short-billed Marsh Wrens were missed by almost all observers this spring, but Carlson found one at the impoundment at Herrington Manor in Garrett County on May 2 and the Gibson Island counters discovered another on the same day. Only 2 were located by Armistead in the vast Dorchester County marshes on May 2. The report of 9 in Somerset County on May 2 was a misprint; the 9 birds were all Long-bills. However, there was a Short-bill in full song at Irish Grove Sanctuary in that county on June 9 (Robbins). Mel Garland reported a Bewick's Wren singing at his mother's home in Cumberland on Apr. 18. Several observers expressed concern over the small numbers of Swainson's and Gray-cheeked Thrushes--evidently a continuation of the scarcity that was so widely noticed last fall. One of the most active birders in the State asked whether these two species are in danger. A study of the migration tables will show they were restricted to a shorter migration period than is normal and my banding totals for the last week of May (the only period for which I have comparable data for the past decade) show both species at close to the lowest figure in ten years. A very late Hermit Thrush was banded at Irish Grove on May 7 (Mrs. Cole).

Warblers and Vireos. Professor Wierenga declared that May 9 was the best day for warbler migration in the Annapolis area. Observers at the Ocean City Convention also enjoyed a fine variety of warblers on this day, including a Brewster's Warbler in the Pocomoke Swamp near Whaleysville. May 2 was also an excellent day, as we all remember. The early appearance of the "May" warblers and their early departure has been discussed in the introduction. Of special interest were a Cerulean Warbler at Annapolis (May 23, Prof. Wierenga), a Blackburnian Warbler that landed exhausted aboard the Montgomery Chapter's boat off Ocean City on the same day (Dr. Pyle), a Mourning Warbler in Charles County on May 2

(Schell), and a Mourning Warbler and Philadelphia Vireo at the site of the former Ocean City banding station on May 10 (Carlson).

Tanagers. Six Scarlet Tanagers, 3 females and 3 males in mottled plumage, showed up at the Baltimore home of Robert and Alice Kaestner on the very early date of Apr. 19 and fed on sunflower seeds for more than 5 minutes. Another early individual was studied at the Patuxent Research Center on Apr. 22 (Charles Loveless). More extraordinary was the third (and first spring) record of a Western Tanager in Maryland. This bird was discovered at Gibson Island on May 1 by Ann Schmeisser and seen again the following day by Burton Alexander.

Crossbills. The only White-winged Crossbills that remained into April were 2 reported at Great Falls on Apr. 4 (Dr. Evenden). Red Crossbills, on the other hand, were detected in more than half of Maryland's counties in the month of May, and lingered in at least five counties into June! The June records were as follows: 3 at the Patuxent Research Center on June 2 and 13 near Bryantown in Charles County on June 8 (Robbins), 2 females at Rossmore Leisure World near Wheaton daily through June 15 (Dick and Sally Rule), and singles at Odenton on June 21 (Danny Bystrak) and Towson on June 22 (Lola and Herbert Strack).

Other winter finches. Evening Grosbeaks and Pine Siskins lingered into May in most counties. And 2 Common Redpolls were last seen at the feeder of Mr. and Mrs. Charles Bostick at Ashton on the record-breaking date of Apr. 12.

Dickcissels. Erana and Carl Lubbert banded a Dickcissel at their Baltimore home on Apr. 27 and Phyllida Willis saw another at Frederick on May 1. An immature male in full song woke Dr. and Mrs. Elmer Worthley at Owings Mills on May 3, and on the same day a full adult male visited Mrs. Fastie's feeder on Greenspring Valley Road in Baltimore County. On the Eastern Shore, one bird was viewed at New Bridge in Caroline County on June 14 (Mr. and Mrs. A. J. Fletcher), both a male and a female on June 17, and a male was still singing on June 20. Seven Dickcissels were counted on June 28 along New Design Road near Buckeystown and 1 near Doubs on the same day (Carlson).

Sparrows. The only Bachman's Sparrow discovered in Maryland this season was a singing bird on Green Ridge Mountain south of US 40, seen on May 30 and June 6 by Carl Carlson. Also noteworthy in the sparrow department was the lingering of a few retarded Tree Sparrows well into April. Ordinarily most reports after early April are dismissed as overly hasty identifications by observers not familiar with the migratory habits of this northern species. But when Earl Baysinger, Chief of the Bird Banding Laboratory, bands a Tree Sparrow at his home near Ellicott City in mid-April and recaptures it as late as Apr. 18, we dutifully inscribe the date in the official records.

Migratory Bird Populations Station
Bureau of Sport Fisheries and Wildlife, Laurel

COMING EVENTS

- Oct. 7 KENT Monthly meeting
- 8 BALTIMORE Lake Roland 9 A.M. Leader: Mrs. Gerringer
- 9 ANNE ARUNDEL Audubon Wildlife Film Lecture, "Designs for Survival," with Mr. William A. Anderson
Annapolis Junior High School, Forest Drive.
Tickets \$1.25, Students 75¢
- 9 BALTIMORE Audubon Wildlife Film Lecture. Charles Hotchkiss, "Tidewater Trails". Dumbarton Junior H. S., Dumbarton Rd. 8 P. M.
Season Ticket \$5.00. Single admission \$1.50.
- 10 ALLEGANY Hawk Count at Wills Mt. 8 A.M. Leader: Dale Fuller
- 11 TALBOT Breakfast hike 7 A.M.
- 13 BALTIMORE Sparrow Identification Class. 8 P. M.
Cylburn. Mr. Chandler S. Robbins
- 14 ANNE ARUNDEL C & O Canal Towpath. Leader: Mrs. Anna Paradee. Meet Parole parking lot, Riva Rd. entrance 8:30 A.M.
- 15 MONTGOMERY Monthly meeting 8 P. M. "Birds and Radar". Mr. Jeff Swinebroad
- 16 TALBOT Monthly meeting, 8 P. M., Library. "Western Birds and Their Surroundings". C. C. Lasher
- 17 ANNE ARUNDEL 7:45 A.M. Corcoran Woods. Leader: Mrs. Neville Kirk. Meet at Rte. #50 Service Road, near Anglers Inn, just beyond McDonald's.
- 17-18 ALLEGANY Trip to Hawk Mountain. Leader: Dale Fuller
- BALTIMORE " " " Leaders: Mr. & Mrs. William Schneider
- MONTGOMERY Hawk Mountain weekend
- 18 TALBOT 7 A.M. Breakfast Hike
- 21 ALLEGANY Monthly meeting at Board of Education Bldg. 7:30 P. M. Speaker: Gus Johnson, "Fall Wild Flowers".
- 24 ANNE ARUNDEL 7:45 A.M. Rolling Ridge Farm. Leaders: Mr. & Mrs. Wendell C. Phillips, Jr. Meet at Parole parking lot, Riva Road entrance.
- 24 CAROLINE Field trip to Blackwater Refuge, Dorchester Co. Meet at Visitors' Center. 3:30 P.M.
- 24-25 BALTIMORE Irish Grove Wildlife Sanctuary weekend. Marion Station, Md.
- 24 MONTGOMERY South Mountain and Hughes Hollow, Md.
- 25 TALBOT Breakfast hike, 7 A.M.
- 27 BALTIMORE Duck Identification Class, 8 P. M. Cylburn Mr. C. Douglas Hackman
- 27 PATUXENT Monthly meeting

- Nov. 1 BALTIMORE Bombay Hook National Wildlife Refuge and Cape Henlopen State Park. 7:00 A. M. Leaders: Mrs. Phyllis Ravesies and Miss Ono Lescure
- 4 KENT Monthly meeting
- 5 FREDERICK Monthly meeting
- 6 ANNE ARUNDEL Monthly meeting 8 P. M. at Anne Arundel County Library. "Adventures Through the Window" with Dickson Preston.
- 6 TALBOT Audubon Wildlife Film. Prentice K. Stout "Audubon's Labrador", 8 P. M., Easton H. S. Mecklenburg.
- 7 BALTIMORE Beaver Run, Carroll County. Leader: Mrs. Elmer Worthley. Meet 9 A.M. at Acme Market, east side of Reisterstown Rd., Owings Mills.
- 8 MONTGOMERY Bombay Hook, Del.
- 10 BALTIMORE Conservation evening, Maryland Squirrels, by Dr. Vagn Flyger. Cylburn 8 P. M.
- 13 CAROLINE Monthly meeting 7:30 P. M. at Federalsburg School. Maryland Dept. of Fish & Wildlife Lecture.
- 14 ANNE ARUNDEL 7:40 A.M. Trip to Rock Run Sanctuary. Leader: Mr. John Symonds. Meet at A & P parking lot in Severna Park on Ritchie Highway
- 17 BALTIMORE Conservation evening. Endangered Species program of the Bureau of Sport Fisheries and Wildlife.
- 18 ALLEGANY Monthly meeting. Social hour 6 P.M.; Dinner 6:30 P.M. Maplehurst Country Club. Reservations with Mrs. Gordon Taylor. Don Emerson: slide lecture on "Conservation".
- 18 ANNE ARUNDEL Hillsmere and Thomas Point. Meet at Mrs. Anna Paradee's, 126 Bayview Dr. Hillsmere 8:30 A.M.
- 19 MONTGOMERY Monthly meeting 8 P. M. "While There Is Still Time", film presentation. Discussion leader: James H. Glazier
- 20 TALBOT Monthly meeting 8 P. M. at Easton Library
- 22 BALTIMORE Perry Point and Otter Point on Bush River Leader Mr. Rodney Jones 8 A.M.
- MONTGOMERY Blackwater Refuge, Md.
- TALBOT Work trip at Mill Creek Sanctuary
- 24 BALTIMORE Enrichment Seminar: Habitats of Birds. First of two lectures. Mr. Chandler S. Robbins. 8 P. M. at Cylburn
- PATUXENT Monthly meeting
- Dec. 1 BALTIMORE Seminar: Habitats of Birds
- 2 KENT Monthly meeting
- 3 FREDERICK Monthly meeting
- 4 ANNE ARUNDEL Monthly meeting 8 P. M., A. A. County Library "Africa", with Mr. David Smith
- 4 BALTIMORE Audubon Wildlife Film Lecture. Harold Pollack: "Wanderings of a Naturalist in The Australian Bush". 8 P.M., Dumbarton Junior High School.

- Dec. 5 BALTIMORE Sandy Point and Kent Island. Leaders: Mr. & Mrs. John W. Poteet, Jr. Toll Gate 9:15 A.M.
- 7 TALBOT Audubon Wildlife Film. Harold J. Pollock, "Australian Bush", 8 P. M. at Easton H. S., Mecklenburg.
- 12 ANNE ARUNDEL 7:45 A.M. Sandy Point Area. Leader: Mr. Harold Wierenga. Meet at Toll Gate to Sandy Point State Park.
- 12-14 BALTIMORE Nags Head, N. C. Leaders: Mr. & Mrs. Malcolm Thomas
- 12-13 MONTGOMERY Back Bay Refuge and Fisherman's Island
- 17 MONTGOMERY Monthly meeting, 8 P. M. "Where I Was This Summer". Members night. Slide presentations and talks by Chapter members.

| 22 - Jan. 3 <u>CHRISTMAS BIRD COUNT PERIOD</u> | |
|---|-----------------------|
| Dates for Catoctin, St. Michaels, Seneca and Rock Run, not yet announced. | |
| 26 Allegany County | Compiler, Ken Hodgdon |
| 26 Baltimore | " David Holmes |
| 26 Denton | " Jerry Fletcher |
| 26 Triadelphia | " Vernon Kleen |
| 27 Annapolis and Gibson Island | " Edward Wilson |
| 27 Lower Kent County | |
| 27 Salisbury | |
| 28 Chincoteague, Va. | " Fred Scott |
| 29 Ocean City | " Chan Robbins |
| 30 Crisfield (Irish Grove) | " Mrs. R. D. Cole |
| 31 Southern Dorchester Co. | " Chan Robbins |

1971

- Jan. 6 KENT Monthly meeting
- 7 FREDERICK " "
- 8 ANNE ARUNDEL Monthly meeting, Assembly Room, State Office Bldg. 8 P. M. Speaker: Dr. James Gilford. Subject: "Changing Environment".
- 16-17 BALTIMORE Eastern Neck Island National Wildlife Refuge, near Rock Hall, Kent County. Leader: Mrs. Richard Cole.

JUNIOR PROGRAMS

ANNE ARUNDEL - Meet at Annapolis Senior High School flag pole.

- Sat. Sept. 12 9 A. M. Youth hike at Thomas Point. Co-ordinator, Mr. Richard Heiss.
- " Oct. 31 8:30 A.M. Youth trip to Sugar Loaf Mountain, near Stronghold, Md. Bring lunch.
- " Nov. 21 9 A.M. Youth hike to Lake Waterford.

BALTIMORE Programs at Cylburn, alternate Saturdays. All talks begin at 10:00 A.M. and are followed by bird and nature walks at 10:45 A.M.

Baltimore Junior program (continued)

| | | |
|---------------|--|---|
| Sept. 19, | Trees. | Mr. Francis H. Gay |
| Oct. 3 | Bats | Dr. Edwin Gould |
| " 17 | Insects | Dr. Gene Wood |
| " 31 | Birds of Prey | Mr. David J. Smith |
| Nov. 14 | Detectives at Work. | Come and explore |
| " 28 | Bird Banding Demonstration. | Mr. Douglas Hackman 8 A.M. and 9:30 A.M. |
| Dec. 12 | Decorating the Birds' Christmas Tree. | Conservation film |
| 1971 - Jan. 9 | The Origin of Some of Maryland's Geology | Mr. Laurence Bruns. |

MONTGOMERY

Youth Field trips

| | | |
|--------------|------------------------------|---|
| Oct. 10 | Mason Neck Refuge, Va. | Banding demonstration |
| Nov. 15 | Bombay Hook Refuge, Delaware | |
| Dec. 6 | Sandy Point and Kent Island | |
| 1971 Jan. 16 | Potomac, Md. | Feeder birds and banding demonstration. |

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M A R Y L A N D B I R D L I F E

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Editor: Chandler S. Robbins, Migratory Bird Populations Station,
Laurel, Md. 20810

Asst. Editor: C. Douglas Hackman, 208A Donnybrook, Towson, Md. 21204

Art Editor: William N. Schneider

Production: Mildred F. Cole, Phyllis D. Ravesies

Mailing: Mr. & Mrs. Herbert P. Strack

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