

Sialia

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The Quarterly Journal
Of
The North American
Bluebird Society



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Sialia means bluebirds. Hence the title of this journal. Technically, *sialia* is the Latinized, neuter plural version of the Greek word *sialis*, a noun meaning a "kind of bird." Since the Eastern Bluebird was the first bluebird classified by Carolus Linnaeus (1707-1778), he gave it the species name *sialis*, though he placed it in the genus *Motacilla* which is now reserved for the wagtails. It was William Swainson (1789-1855), who, in 1827, decided that the bluebirds needed a genus of their own within the thrush family (*Turdidae*). He selected the generic name *Sialia* which he simply adapted from the species name *sialis* which Linnaeus had used. Therefore, the scientific name for the Eastern Bluebird is *Sialia sialis* (pronounced see-ahl'-ee-ah see'-ahl-iss). Similarly, the Western Bluebird and Mountain Bluebird, the two other species within the genus, were named *Sialia mexicana* and *Sialia currucoides* (coo-roo-coy-dees) respectively. Their species names are descriptive of their locations. All three bluebird species are native only to the North American continent, although each inhabits different regions generally separated by the Rocky Mountains and by altitudinal preferences.

While the adult birds all show differing plumages, the young of all three species look remarkably alike, prominently displaying spotted breasts and large white eye rings. This similarity in plumage was the principal reason the Society chose the juvenal bluebird for its logo. Since bluebirds almost always choose to raise their young in small enclosed cavities, a young bluebird sitting near a nesting box seemed to symbolize our mission. The hope of any species resides in its young. Because of bluebird nesting preferences, the survival of their young may depend on the nesting box, especially since natural cavities, for a variety of reasons, are disappearing rapidly. The theme of bluebird young nurtured in man-made structures will be a recurring one in our art and literature. We hope that this theme will remind all about the plight of the bluebird, and will stimulate action which will allow this beautiful creature to prosper.

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Sialia

The Quarterly Journal
About Bluebirds

Volume 10, Number 1
Winter 1988
Pages 1-40

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COVER

Art Editor Alexia J. Scott features two stylized Wood Ducks on this issue's cover.

Sialia welcomes original articles, art and photographs for publication. Although this journal is named for the bluebird, material relating to all native cavity nesting species will be considered. Manuscripts should be typed neatly and double-spaced. All material submitted is subject to editing or rewriting. Submit the original manuscript plus a duplicate copy if you wish to proof the material before publication. If the article has been submitted elsewhere (or previously published) that fact must be stated at the time of submission. All manuscripts will be acknowledged. Black and white glossy photographs are preferred. Print the subject, names of individuals pictured, photographer and return address on the back of each photograph. Art is welcome and should be in black pen-and-ink. We do not assume responsibility for manuscripts, photographs or art submitted. The editor's address is 10617 Graefloch Road, Laurel, Maryland 20707.

Presidential Points

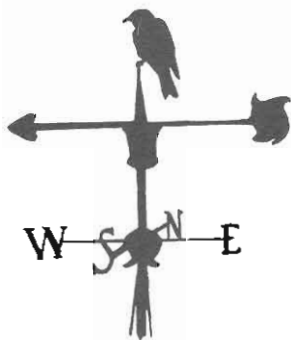
Sadie Dorber

Oquaga Creek State Park is located in the remote, rolling hills of eastern Broome County. The 1,500 acre [607 ha] park, surrounded by hills of hardwoods and evergreen plantations, has approximately 200 acres [80.9 ha] of mowed lawn. The 52 acre [21 ha] lake is fed by a trout stream where beaver have shown their incredible engineering skills by building a large series of dams. Wildflowers of many species are abundant in the spring and the habitat is a welcome resting area for the birds and waterfowl migrating north for their nesting season. The park is virtually a naturalist's paradise.

In the spring of 1986, a few of us from my bird club decided to spend a day at Oquaga to look for migrating warblers. As we entered the park, the large rolling lawns greeted us. My comment to the others was naturally, "Oh, what beautiful bluebird habitat; this place needs boxes!"

Though the idea didn't leave my mind, it was fall before I could spend time to get the trail under way. In October, I visited with Park Superintendent Rick Dunbar. We toured the park and marked sites where I thought boxes should be placed. The next step was to get boxes built and work out a schedule for monitoring on a weekly basis. Rick suggested we contact Camp Brace Correctional Facility and present our ideas to them. Residents at Camp Brace, whose ages range from 14 through 17, help maintain the lawns at Oquaga and with training we felt that they could manage the trail. Our idea was warmly received by Monroe Hale, the Director of Camp Brace, and we were quickly involved in a discussion of where we could obtain lumber. The workshop class could then spend the winter building boxes.

We then decided to start on a small scale the first year, so 16 boxes were built and in place by the first of March. The boxes were all paired to provide one for Tree Swallows and one



for bluebirds.

As the nesting season got under way along my trail, I decided to phone the park to see if any bluebirds had appeared. Imagine my state of mind when the secretary said, "Oh we've got lots of bluebirds, some with eggs and some still building." The next day I was on my way to Oquaga to survey the bluebird situation in person. They were eagerly awaiting my arrival to show me firsthand the nests of five pairs of bluebirds.

Mr. Herb Fitzgerald, Youth Division Aide at Camp Brace, supervised the residents with the trail work. I taught them how to check for banded birds and also how to check for blowfly parasites. Herb also placed boxes at his home and several of the residents turned into "true bluebirders."

Some of the nestlings were fledging at the time the residents were taking regents exams and couldn't check the boxes. Rick Dunbar was concerned about the boxes getting cleaned for the second nesting. When he finished work in the evening, he and his wife Helen would clean out the old nests. A trail couldn't get more tender loving care than this one!

While the autumn leaves were at their peak of color, I returned to Oquaga to present the NABS Certificate of Appreciation to Rick Dunbar and to Camp Brace. My birding friend Glenys Curran accompanied me. Glenys had heard me talk about the beaver dams so often that she too wanted to enjoy them.

(Continued on page 38)

Are PVC Nest Boxes Sparrow Resistant?

Keith Kridler

They sound like "high tech" nesting boxes, but they are made from the same material that brings most of us our drinking water. I made my first polyvinyl-chloride (PVC) boxes out of scrap 6 in. [15.24 cm] schedule 40 water pipe. I was looking for a material that would last longer than wood and would not need painting. I found that the material is very versatile. It comes in a number of different diameters for nearly any cavity nesting bird. White is quite cool for the birds. (For comparative nest box temperatures see *Sialia* 2(1):15-18.) PVC pipe can be purchased in any part of the country and simple hand tools can be used to fashion a box. A hand saw will cut the pipe to length and regular "high speed" steel bits can drill the ventilation and pilot holes for the nails or screws to hold the top and the bottom in place. The entrance must be drilled with a "hole saw" to keep the plastic from cracking.

In 1978, I built three boxes with the entrance just five in. [12.7 cm] off the floor. I kept these close to the house so I could check to see if the birds had any trouble getting into or out of these slick-sided boxes. Bluebirds have no problems hopping out even when the entrance is placed 9 in. [22.86 cm] above the bottom of the box, although NABS research has shown that Tree Swallows [*Tachycineta bicolor*] cannot climb out of these boxes. A strip of hardware cloth beneath the entrance hole on the inside, as is used in Wood Duck boxes, is necessary where these swallows are present.

I noticed that the PVC pipe box was the only box in our yard that the House Sparrows [*Passer domesticus*] did not try to nest in that year, while bluebirds raised three young in it. So, for 1979, I built 11 boxes out of 4 in. [10.16 cm] PVC pipe and placed them in areas where I was having sparrow trouble. With sparrows in six consecutive boxes, I added two PVC boxes in be-

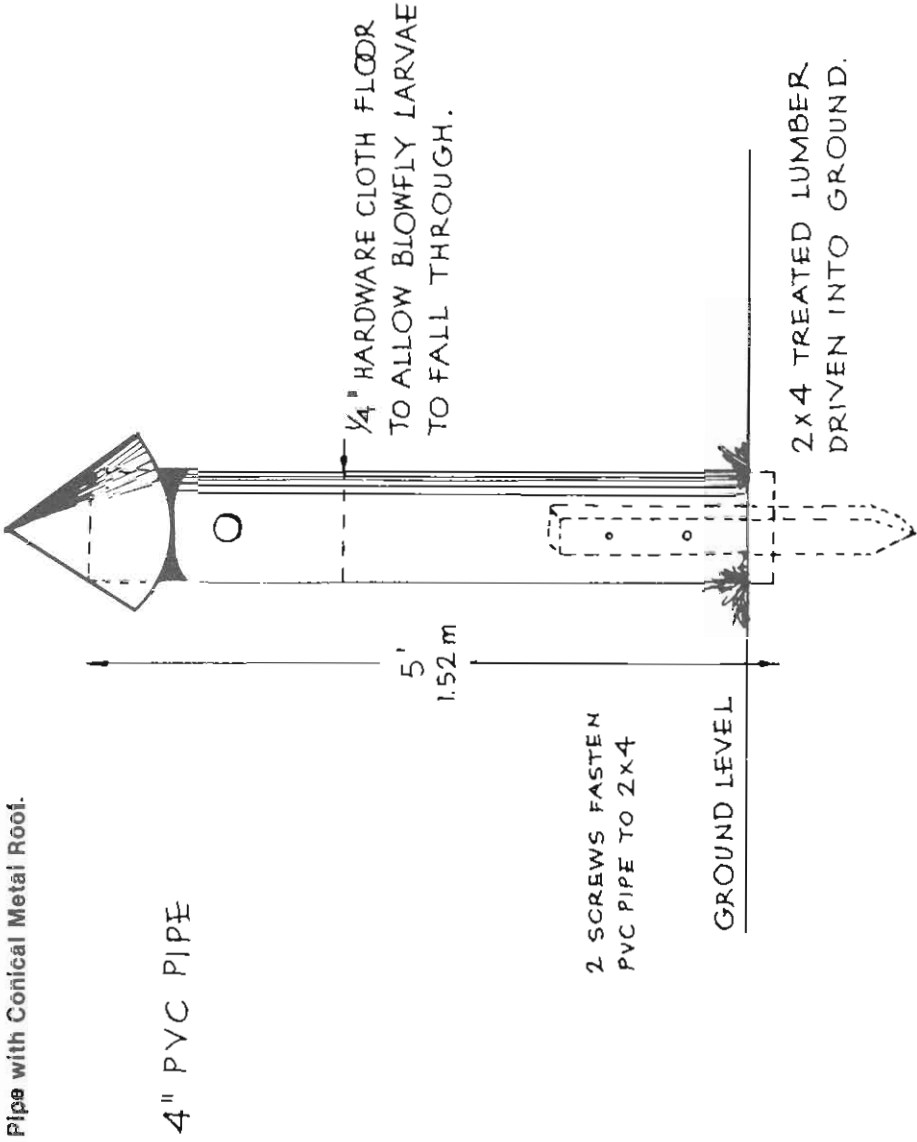
tween several wooden boxes and raised two broods of bluebirds within 100 yds [91.44 m] of a dairy cattle operation. It seems that as long as there are wood boxes available the sparrows will not use the PVC boxes. I try not to allow any sparrows to fledge from any of my boxes, but, with several hundred wood boxes to check, it is impossible to get rid of all the adult sparrows.

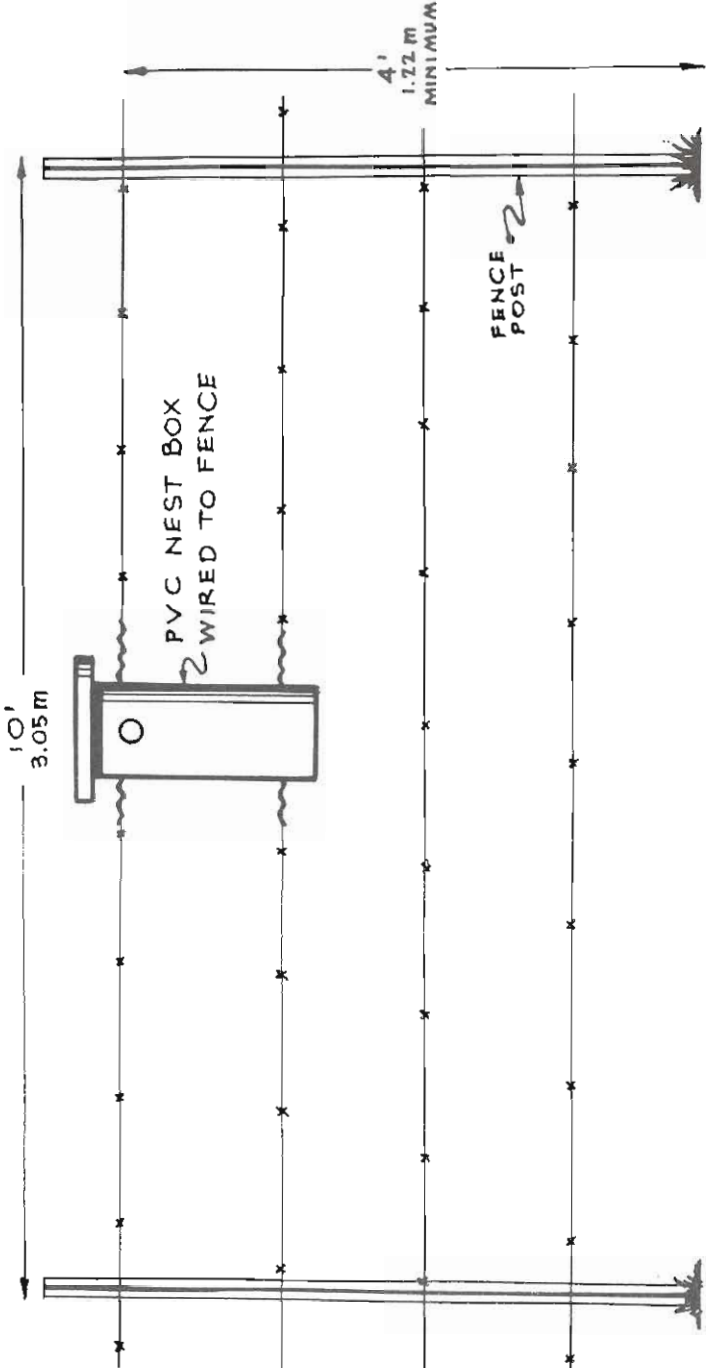
In 1980, I tried some black PVC pipe (sprayed white on the outside) to see if it was the color or the slickness that was keeping sparrows from laying eggs in these boxes. Sparrows didn't nest in any of these either, but this was the first year that a male sparrow held a box all summer, although he never succeeded in attracting a female to his PVC house.

From 1981-1983, I experimented with new tops and mounting methods for PVC boxes. I also tried to make my new wood boxes as unattractive as the PVC ones. I glued slick Formica® laminates on the outside of the fronts of the boxes. This didn't work so I glued it on the inside of the fronts the next year. This didn't work either; sparrows used these boxes just as frequently as the plain wood boxes. Sparrows laid eggs in three or four different PVC boxes during these years.

During the period of 1980-1986, I established a sparrow test road 15 miles [9.32 km] long with horse, cow, chicken farms, and lots of sparrow motels (Purple Martin houses) along the route. I have between 30 and 40 boxes here every year. This is where I have tested all of the following different designs: Seven of the 3½ × 4 in. [8.89 × 10.16 cm] shallow boxes that were described in *Sialia* 4(4):137-138; six PVC boxes, *Sialia* 1(1):39, and the rest 5 × 5 in. [12.7 × 12.7 cm] Duncan-style control boxes. Bluebird use aver-

Fig. 1. PVC Pipe with Conical Metal Roof.





Diagrams by Harry Krueger

ages four of the PVC, two of the small boxes, and five of the Duncan boxes each year. From mid-March through mid-May, sparrows will usually attempt to nest in all remaining boxes.

In 1986 I cut 6 in. [15.24 cm] long pieces of 4 in. [10.16 cm] PVC pipe and set these into the Duncan boxes at the end of the nesting season thinking that I had a quick fix for my sparrow problem, but the sparrows laid eggs in over half of these inserts. I also found six bluebirds killed by House Sparrows in these inserts.

I believe that the sparrows dislike the PVC pipe for a combination of reasons: the slick outside makes it difficult for the female to carry nesting material into the box; once inside they have a harder time leaving the box due to the slick interior surface; and the 4 in. [10.16 cm] PVC pipe is too small for them to build their usual bulky nest.

A PVC pipe box will keep baby bluebirds from fledging too early because the smooth surface requires them to be able to jump up and catch the lip of the entrance rather than just climb up the rough inside of a wood box. The box is easy to attach to posts: my favorite mounting method is to wire it in the mid-span of a barbed wire fence. If you use a five foot [1.52 m]

length of pipe, the box and post are one piece. This post will be highly predator resistant. Raccoons, mice, opossums, and cats will have a hard time climbing it. This type of post needs to be tested in other parts of the country to determine the length of pipe necessary to keep predators from climbing to the entrance. Large snakes in this area can easily climb 42 in. [106.68 cm] tall PVC posts. I suspect that they would also be able to climb the five foot [1.52 cm] posts. If blowflies are a problem in your area, the bottom of the post/box can be made out of hardware cloth to let the blowfly larvae fall to the ground.

There is a severe nest cavity shortage in my area and all cavities are used by native and non-native birds. In other areas with less competition the PVC boxes would probably be ignored by the birds. This is not a cure-all; I believe that House Sparrows will learn to use any box given time. It will be up to us to keep building and modifying boxes constantly to stay ahead of the sparrows. The rest of the predators can be outwitted. ■

505 South Sunny Lane
Mt Pleasant, TX 75455

1988 Research Grant Announcement Maryland Ornithological Society

The Maryland Ornithological Society announces the availability of research grants for ornithological research to be conducted in the state of Maryland. Either ornithological research anywhere in the state or ecological research at one of our sanctuaries is acceptable. Grants are usually for \$500 or less. If the research is to be done at or near one of our sanctuaries, it may be possible to provide accommodations at nominal cost. Students are encouraged to apply.

This year there are two application periods: January 1, 1988 and May 1, 1988.

For application guidelines and further information write

Maryland Ornithological Society
Attention: Research Committee
Cylburn Mansion
4915 Greenspring Ave.
Baltimore, MD 21209

Mcllwain Research Grant

Betty H. Mcllwain of Brevard, NC, has donated \$5000 to the NABS Research Committee. An annual grant will be established and will be awarded for the first time in 1988.



Can Orphaned Bluebird Nestlings and Abandoned Eggs Be Saved?

Lawrence Zeleny

Every year during the nesting season I receive calls from concerned bluebirders who believe that some of their nestlings are not being cared for or that eggs in the nest have been abandoned. They want to know what may have happened and what they can do to save the baby birds or eggs. In this article I shall try to provide some guide lines for handling situations of this kind.

NESTLINGS

The hazards of being a wild bird are so great that one or both parents may die during the nesting period. In the case of bluebirds if the male parent dies or disappears when there are nestlings in the nest, the female will almost always continue to raise the brood successfully. Likewise, if it is the female that dies, the male bird will usually be equally devoted to the brood. He may have trouble, however, if the baby birds are less than five or six days old, since, unless the weather is quite warm, these tiny birds require frequent brooding to keep them warm, and he is not very adept at this task.

Single parent bluebirds are sometimes assisted in their task of feeding and caring for their nestlings by immature birds of an earlier brood or occasionally by other adult bluebirds that happen to be free from their own family responsibilities.

Bluebirds rarely, if ever, abandon their living nestlings, so if a brood is unattended it can reasonably be assumed that both parent birds have died from some cause. In rare instances the male parent may not have died but, instead, may have become completely absorbed in the care of another brood that he has fathered by a different mate. Bigamy is uncommon among bluebirds, but there is good evidence that it does occur occasionally. In any case, unattended nestlings will almost surely die of starvation or chilling in a short time without human intervention; however, entire broods can

often be saved from certain death by taking proper action before it is too late.

Before taking any action, however, one must be certain that the nestlings are, in fact, not being cared for. An inexperienced observer on opening a nesting box may often be apprehensive on seeing that the nestlings appear completely limp and unresponsive. Nestlings more than about three days old usually react to human intrusion by crouching low in the nest and remaining almost completely motionless. Younger nestlings sometimes respond by stretching their necks upward uncertainly and opening their mouths to be fed. These are normal reactions to human intrusion and are in no way indicative of any kind of trouble.

On rare occasions, older nestlings will respond to the opening of their nesting box by begging vigorously for food, and, if these baby birds are more than eight or nine days old, their begging may be very vocal. This reaction means that the birds are very hungry and have not been fed for some time. They may be abandoned but perhaps the parent birds have just not supplied food at the usual time. One or the other parent bird usually brings food to the brood on the average of about once every five or six minutes during daylight hours. In a brood of four, each nestling is fed at roughly 20 to 24 minute intervals; however, the time interval between feedings is quite variable, and sometimes an hour or more may elapse between the feeding of any of the brood.

Nestlings believed to be unattended by adult birds should, in most cases, be left undisturbed until their status is determined with certainty. If no adult bird arrives with food for a two hour period, it is reasonable to assume that the nestlings are abandoned and in prompt need of human help. The easiest way to determine this is to stretch a strand of spider webbing across the entrance hole and return to the nesting box after two hours. If the webbing is still intact, it is obvious that the nestlings have not been fed. If spider webbing is not available a thin blade of grass wedged across the entrance hole will serve the purpose.

UNRESPONSIVE NESTLINGS

In cases of advanced starvation, the nestlings at any age will be very limp and cold to the touch. They will be too weak to raise their heads, to open their mouths for food, or to utter any sound. Death will be imminent unless prompt action is taken, but these nestlings may sometimes be saved if they still have some sign of life. First consideration should be given to warming the cold baby birds to approximately the temperature of the human body. This can best be accomplished by holding the nestlings rather tightly in warm hands or, better still, by pressing them gently but firmly against a warm part of the body for 15 minutes or so. The response to this treatment is often dramatic.

In some cases the young bluebirds thus revived are strong enough to accept food; if not, they should be force-fed preferably with soft insects or small bits of raw lean beef or other suitable food, *never* with seeds of any kind. It is usually necessary to force open the nestling's mouth, place a small piece of the food into the mouth and *gently* press it down into the throat with the little finger or some smooth blunt instrument until the bird's reflexes cause it to swallow. Never try to give the bird water or any other liquid, but the food used should be moist and may be moistened with water if

necessary. Soft insects contain enough moisture for the bird's needs. Trying to put water or any liquid in a bird's mouth is likely to cause the bird to choke, often with disastrous results. Remember that parent birds never bring water to their nestlings.

VIGOROUS NESTLINGS

Orphaned or deserted bluebird nestlings that are vigorous when discovered or which have been revived in the manner described above must continue to be cared for until a week or more after they are able to fly free. This can be done in several ways.

If you or someone in your area is operating a bluebird trail it is quite possible that one or more bluebird nests can be found that contain nestlings of very nearly the same age as your orphans. The parents of such a brood will almost certainly accept orphaned birds for adoption. However, the nest should not be overcrowded. Eastern Bluebirds can readily care for broods of six. Western Bluebirds can care for broods of seven and Mountain Bluebirds will occasionally raise broods of eight. These limits should not be exceeded when introducing orphans to a brood.

It is important that the introduced baby birds be vigorous enough to beg for food, since the adult birds will not pamper any weaklings even if they are their own babies. This, of course, is Nature's way of providing for the survival of the fittest. For the same reason it is highly desirable that the brood chosen be of approximately the same age as the introduced orphans. Otherwise the larger birds may get the lion's share of the food. Even so I once, of necessity, placed three orphaned Eastern Bluebirds in a nest with a single nestling judged to be four days older. All of the birds survived and were fledged at the proper times for their ages. Placing orphaned bluebirds in other active bluebird nests for adoption is by far the best way of handling this difficult situation. I have done this many times and, in every case, the introduced nestlings were accepted

without question.

If it is not possible to locate suitable bluebird foster parents for the orphaned nestlings, the next best alternative is to place them in the hands of a licensed wildlife rehabilitator who is experienced in raising young birds to fledging age and releasing them to the wild. Bluebird trail operators should learn in advance where to locate the nearest qualified rehabilitator. Local bird clubs can usually supply this information.

As a last resort, orphaned birds may be hand raised by anyone who has the necessary time and patience.* This is not an easy task, but it can be quite gratifying. The birds must be kept in a safe place and if they are less than a week old the temperature of their surroundings should be maintained at about 100°F. A crude handmade nest of dry grass or even facial tissue placed in a carton will serve to hold them. They should be fed at about 20 minute intervals from dawn until dusk, and the droppings should be removed frequently. A characteristic whistle or other high-pitched sound should be made just before each feeding so the birds will learn to associate this sound with feeding time.

The most suitable food consists of crushed insects, very small and soft ones when the birds are very young and increasingly larger ones as the birds grow older. Mealworms, obtainable at most pet stores that sell caged birds, are quite satisfactory. Canned dog or cat food of the types formulated for puppies or kittens are good and easy to use. Small pieces of hard-boiled egg yolk and raw liver are good supplementary foods. Force feeding may be necessary at first, but the birds soon learn to accept food eagerly.

When the young birds are 17 or 18 days old, they should be able to fly short distances and should be released as soon as possible after that time. First, however, it is important to teach the young birds to come to you to be fed since they will need to be fed

for a week or more after they are released and until they learn to find food for themselves. This can best be accomplished by keeping the birds for a few days in a closed area provided with places for the birds to perch, and by insisting that they come to you to be fed when you enter that area with food. Using the whistle or other call that they have learned to associate with feeding time will help teach the birds this important lesson. Within a few days after the birds are released and have learned to fly well, the amount of food supplied should be gradually diminished in order to encourage the birds to find their own food and become completely independent.

EGGS

Eggs that appear to be unattended are often found during bluebird trail monitoring operations, and one may wonder if they are indeed abandoned and, if so, if they can possibly be rescued and used for the purpose nature intended. Unless one has monitored such a nest almost daily, it is often hardly possible to assess such a situation with confidence.

If the eggs are warm to the touch it is virtually certain that they are being incubated and that the female bird will be back to attend them if she is not then in evidence. In hot weather she seems to know instinctively that the eggs will stay warm for some time, so she may be gone for an hour or more.

If the eggs are cold, one must not assume that they are abandoned. The female bird usually lays one egg a day until the clutch is complete, but she does not start to brood the eggs until the last one is laid—sometimes a day earlier and on rare occasions one or even two days later. The eggs remain cold during this period and are often not closely attended, but they remain viable and should never be disturbed.

Partially incubated eggs that are later found to be cold have probably been abandoned, but it is always re-

*A federal and often a state permit is required to hand raise young wild birds. Information concerning such permits may be obtained from the nearest office of the Fish and Wildlife Service of the U.S. Department of the Interior.

motely possible that the female has just been a little careless and will return soon to resume her brooding. However, if the partially incubated eggs remain cold for some time it is virtually certain that they are abandoned and no longer viable. In such cases the female bird may have died, but more commonly the eggs have been judged by her to be infertile. In the latter case she may go elsewhere to make a second attempt to raise a brood, or she may cover the infertile eggs with fresh nesting material and proceed to lay another clutch of eggs.

The only circumstance under which abandoned bluebird eggs may be rescued with any real hope of success is when the female bird is known for certainty to have died. If she had not started incubation before her death, her eggs could remain viable for at least six days after they were laid. These eggs can then be placed promptly in other bluebird nests containing partial clutches of freshly laid eggs, again being careful not to overload any nest.

If eggs have been partially incubated at the time of the female's death, the eggs *if still warm* can likewise be

quickly transferred to other bluebird nests containing eggs that have been incubated *for the same length of time*, at least within one day. Obviously, it is usually quite difficult to accomplish this task within the time restrictions required.

Tree Swallows and even House Sparrows have been known to accept bluebird eggs, incubate them, and raise the young birds successfully. Certain other species might also be willing to cooperate. Chances for success in such inter-species foster parenting are probably rather marginal, so attempts of this kind should be made only as a last resort.

Some wildlife rehabilitators are experienced and equipped to incubate eggs of small birds such as bluebirds and raise the newly hatched birds to fledging age. Inexperienced persons are unlikely to succeed in any such effort.

Saving orphaned or otherwise abandoned baby birds from certain death, either before or after they are hatched, is a worthwhile project and when successful is a source of great personal satisfaction. ■

This material was presented at the Tenth Annual Meeting of the North American Bluebird Society, September 18-20, 1987, Chevy Chase, Maryland.

North Carolina Withdraws Protection From Sparrows, Starlings and Pigeons

On 31 August 1987, the North Carolina Wildlife Resources Commission voted to remove the House Sparrow, European Starling, and Rock Dove (pigeon) from their definition of "wild birds," thus removing them from state protection. Prior to this change in status, a permit had been required to kill the birds or destroy their nests and eggs.

A public hearing in July on whether the birds should lose their protected status met with enthusiastic support from North American Bluebird Society and North Carolina Bluebird Society members. The hearing was attended by

the following bluebirders: Jack Finch of Bailey, John Mothershead of Greensboro, and Bea and Steve Mansfield of Reidsville. ■

Upstate New York Bluebird Society Gift

For the 1988 granting year, the North American Bluebird Society has received \$1000 from the Upstate New York Bluebird Society to be awarded for research. This generous gift will be a general grant.

Raising Mealworms

Delos C. Dupree

Raising mealworms (*Tenebrio molitor*) when done properly, is relatively easy, requiring little time and expense. The United States Department of Agriculture recommends using a wooden box or flat 8-10 inches [20.3-25.4 cm] deep, 2 feet [.610 m] long, and 18 inches [45.7 cm] wide for rearing the mealworms. The top can be made by perforating a thin sheet of metal cut to fit the inside of the box and resting it on cleats attached on the sides.

Mealworms may be purchased at most pet stores. One quarter-pound [113 g] is sufficient. Prices vary, but the usual cost is one or two cents each. The least expensive food for mealworms is a mixture of three parts bran to one part laying mash, although other cereals may be used. Bran and laying mash may be purchased at any local feed store. The cost is usually about twenty cents a pound for each. Be sure to buy equal dollar amounts of each because the bran is much lighter than the mash. Fill the box to within 2 inches [5.08 cm] of the top with the mixture.

Some moisture is necessary for the rearing of mealworms, but too much moisture will destroy the colony. Adequate moisture can be supplied by placing slices of potatoes or apples on a thin sheet of wood or meal on top of the feed. Be sure to renew the slices every few days, discarding the old.

Now that you have started a mealworm farm, you should know a little bit about their life cycle.

When you place the mealworms on top of the mixture, they will burrow beneath the surface. The larvae will go through a series of from 9 to 20 molts extending over a period of 79 days to 842 days depending on the temperature. Adequate food and temperatures over 80°F [26.7°C] will provide optimum growth for all stages.

After the last molt, the larvae come to the surface and appear slug-

gish exhibiting few signs of life. Soon the larvae transform into naked white pupae unprotected by pupal cases. Pupation lasts from 6 to 18 days.

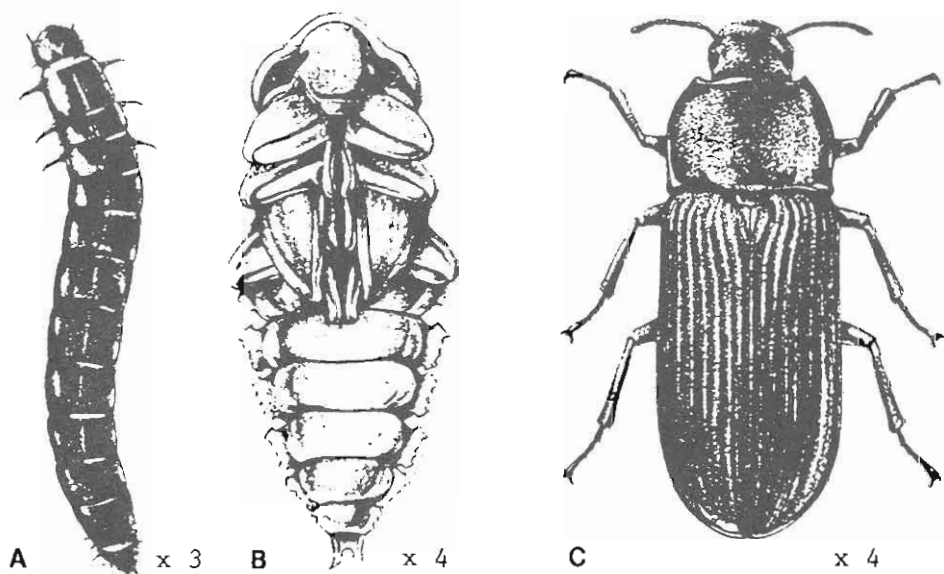
The adult beetle is almost black in color; mating occurs a few days after emergence and is repeated. Although they do have wings, they rarely fly. Egg-laying occurs 9 to 20 days after emergence. After they complete laying eggs, they die. The number of eggs laid varies from as few as 77 to as many as 576 with an average of 276. The length of the incubation period ranges from 4 to 19 days. Depending on the availability of food and water and the temperature maintained, the life cycle of a mealworm can range from 301 to 649 days.

Although extreme temperatures, exposure to sunshine, and too much moisture may result in failure, these conditions are easily managed. You don't even have to worry about your mealworms when you're on vacation. They are extremely resistant to starvation going from six to nine months without food or water. Just remember to add more food when the existing supply turns a light gray.

Generally, the food lasts for several months. Before replenishing the supply, remove the fine grayish dust by sifting the mixture through a screen. The mealworms, pupae, and live beetles can then be placed directly into the fresh supply of cereals. The best time to do this is when the numbers of live beetles is very few. In order to salvage any eggs that may have remained in the spent food, you can keep the old mixture in a separate container for several weeks and then repeat the process.

Mealworms are an excellent food for bluebirds, especially in the spring when bad weather prevents them from foraging. Unlike some insects, mealworms can be fed to nestlings without

Fig. 1. Mealworms: Several Life Stages.



Several stages in the life history of a mealworm: A. full grown larva, B. pupa, and C. adult beetle.

much preparation by the adult bird. For technical information about mealworms, write to Mealworms, c/o NABS, Box 6295, Silver Spring, MD 20906-0295. Please enclose \$1.00 for shipping and handling along with a #10 envelope. ■

References

Cotton, R.T. Mealworms. Leaflet No. 195,

U.S. Department of Agriculture, issued 1940, revised Sept. 1961. U.S. Government Printing Office, Washington, DC; 16-70014-2.

The Mealworms. Technical Bulletin, No. 95. U.S. Department of Agriculture, Feb. 1929.

Individuals have adapted these basic instructions in different ways. Write to Mr. Dupree at the above address if you would like to share your method.

Bluebird Boosters

Appearing on the inside back cover is a list of those individuals who have made a financial commitment to bluebirds and native cavity nesters over and above their annual dues. Such support is essential in maintaining a stable dues structure. We thank the individuals, organizations, and businesses for their generosity.

You, too, can become a Bluebird Booster. For a donation of \$25.00 per

issue or \$75.00 per four issues, you can be designated as an Eastern, Western or Mountain Bluebird Booster (your choice); for \$15.00 per issue or \$50.00 per four issues, be a Fledgling Booster; while \$10.00 per issue or \$25.00 per four issues makes you a Nestling Booster. Bonus decals will be sent for each category. All contributions are tax deductible. Mail your check to NABS Boosters, P.O. Box 6295, Silver Spring, MD 20906-0295.

Nest Boxes for Wood Ducks

Clark G. Webster

Most wild ducks nest on the ground, but the Wood Duck (*Aix sponsa*) normally nests in tree cavities. This helps explain why their population has dropped severely during the past century when heavy cutting of mature timber destroyed many natural nesting sites. It also indicates why artificial nesting sites can be of practical value in many places.

The possibility of increasing Wood Duck populations by means of nest boxes depends mostly upon the quality of habitat in the bird's breeding range (largely the eastern half of the United States and the Pacific Coast states south to central California). States, private groups, and individuals have helped to restore Wood Duck numbers by providing artificial nesting sites.

Success with Wood Duck nest boxes is complicated by the fact that boxes are attractive to various kinds of wildlife, some welcome and others not. Desirable or largely unobjectionable species which nest in the boxes include goldeneyes, Hooded Mergansers, screech-owls, American Kestrels, bluebirds, Tree Swallows, and Great Crested Flycatchers. Competition from these species is generally slight and usually can be eliminated by erecting more boxes.

Other occupants or visitors can be objectionable. Raccoons are, by far, the most important predator. They consume many eggs and occasionally kill incubating ducks. Wood Duck eggs also have been destroyed by fox squirrels, bull and rat snakes, and mink. European Starlings, white-footed mice and various species of tree squirrels may fill the boxes with their nests and thus prevent the ducks from using them. In many areas, starlings are the worst competitor for nest boxes. Occasionally raccoons and opossums use boxes as dens and bees use them as hives.

Constructing Nest Boxes

Wooden Boxes. Building good wooden boxes takes less skill but more time than constructing good metal ones and labor costs are likely to be higher. Also, wooden boxes with the durability of metal ones may cost more for the materials. Wooden boxes are shown in fig. 1. The floor is 10 inches [25.4 cm] square. Boxes with the tunnel entrance guard should be about 18 inches [45.72 cm] high. Those with the oval entrance should be at least 18 to 20 inches [45.72-50.8 cm] high. In both, the hole should be near the top to prevent raccoons from reaching the eggs with their paws. Wood Ducks prefer deeper boxes to shallow ones.

Metal Boxes. The metal box (fig. 2) consists of a sheet-metal cylinder 11 [27.94 cm] or 12 inches [30.48 cm] in diameter and 24 inches [60.96 cm] high, a bottom of either wood or sheet-metal, and a steep, cone-shaped sheet-metal roof. Either 26 gauge galvanized sheet metal or 12 inch [30.48 cm] diameter

galvanized furnace pipe or cold-air duct may be used.

The lid can be attached by either of two methods: One method involves the use of mating catches which are formed in the lid and top edge of the cylinder. A pair of these locking arrangements on opposite sides attaches the roof securely and yet permits easy removal. In the second method, a metal screw is fastened permanently in the lid and hooks into a slightly oversized hole in the upper edge of the cylinder. Opposite this, a piece of No. 9 wire, shaped like a hook, is inserted into matching holes in lid and cylinder. The inside leg of the wire hook should be long enough to keep it hanging downward but not long enough to obstruct the entrance, if it should happen to swing into that position. The outside leg should be shorter and the end bent out to make it easy to insert and remove the hook.

Fig. 1. Two Methods of Raccoon-Proofing Boxes: left, sheet metal around elliptical opening; center, no protection; right, wooden tunnel entrance.

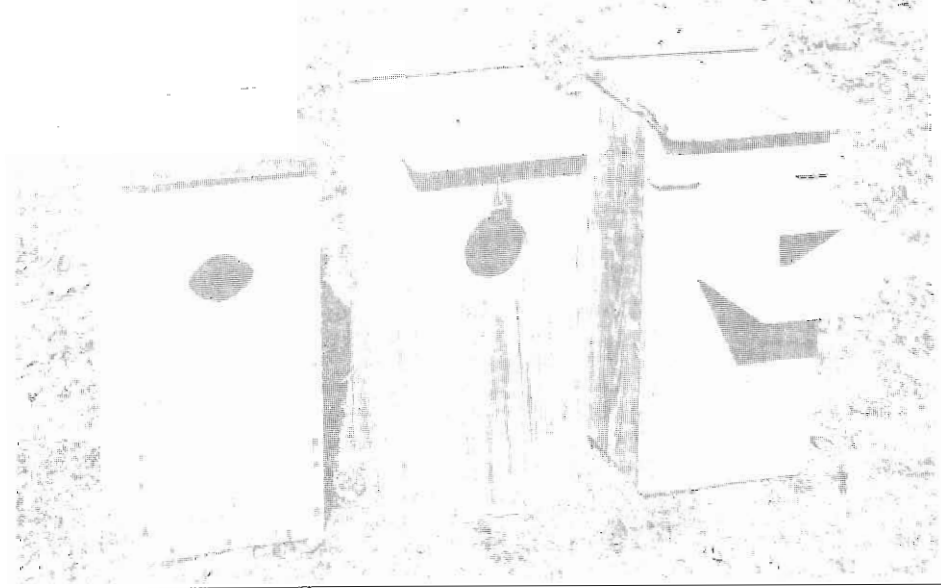
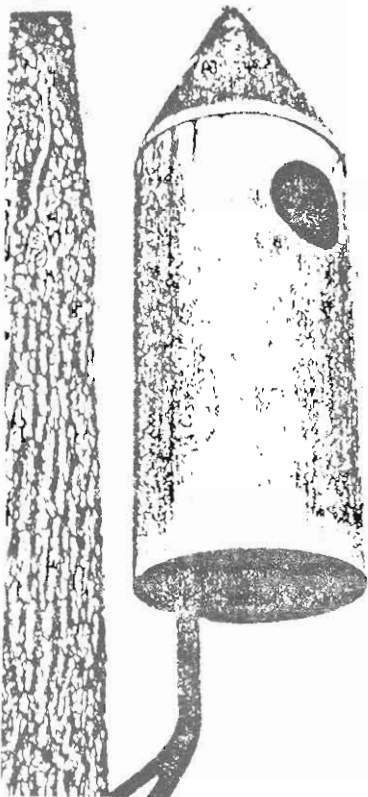


Fig. 2. Metal Nest Box.



To reduce the heat load, use aluminum paint on metal boxes; this also increases their durability. To apply certain aluminum paints over galvanized metal, a zinc chromate undercoat is required.

Predator-Proofing Nest Boxes

Biologists have recognized for some time that, under certain circumstances, nest boxes can be liabilities rather than assets. Boxes not only must be suitable for use by Wood Ducks, but also should exclude their enemies. In order to protect the birds and prevent wasting time and money, predator-proofing boxes is important. Early attempts were concentrated on adaptations such as oval or tunnel entrances on the conventional wooden boxes. In some regions these have served the purpose effectively, but they have not been uniformly successful in all parts of the country. More recent methods employ metal boxes with metal supports. An older method, now in wide use, relies on large metal shields to protect boxes mounted on wooden posts.

Predator-Proofing Wooden Nest Boxes. The Illinois Natural History Survey found an elliptical opening 3 inches [7.62 cm] high and 4 inches [10.16 cm] wide admitted Wood Ducks but excluded raccoons. To prevent raccoons from enlarging the hole, the opening was masked with a piece of galvanized sheet metal about 6 inches [15.24 cm] high and 12 inches [30.48 cm] across.

Another method of preventing raccoons from entering nest boxes was developed by the Massachusetts Division of Fisheries and Game which consisted of attaching wooden entrance tunnels to the boxes. The tunnels were 4 by 4 inches [10.16 by 10.16 cm] on the inside and 10 inches [25.4 cm] long. Wooden tunnels of smaller diameters and metal cylindrical tunnels were tried, but they reduced use by ducks. Tunnels and oval entrances have not had universal success especially in the South where many adult raccoons are smaller than those in northern climates. Unfortunately, merely erecting boxes over water or on metal posts or hanging them on wire stretched between two trees is no guarantee that raccoons will not reach and enter them. Tree-mounted boxes have been protected successfully from raccoons and squirrels by the application of a broad band of Tanglefoot®, but it must be renewed each year just before the nesting season, it will not deter rat snakes, and the chance exists for attractive bird species to become entangled in it.

Probably the most satisfactory means of preventing predators from entering a wooden box is to place a large cone-shaped sheet-metal guard around the mounting post (fig. 3). The guard should fit tightly enough to keep snakes from squeezing through. Because Wood Ducks are not territorial, the cost per guard can be reduced by mounting two boxes back-to-back on one post.

Predator-Proofing Metal Nest Boxes. To exclude fox squirrels from nest boxes mounted on trees, the Illinois Natural History Survey developed

a cylindrical sheet-metal box with a steep, conical lid. When this box is properly constructed and mounted against a tree trunk away from limbs, a squirrel can rarely reach the entrance—either from the side or over the steep roof. Raccoons, however, can easily reach the peak of the roof, grasp it with their feet, and lower themselves head-first to the entrance. A special bracket for tree mounting has been used with success in Maryland (fig. 4).

Some Important Considerations

Nest boxes do more harm than good under certain circumstances. This should be recognized clearly by individuals and organizations planning either limited or extensive programs of nest box establishment. A worse-than-nothing circumstance results when predators destroy eggs or ducks which have been attracted to boxes.

Boxes also fail to fulfill their purpose if they are not maintained properly. They should be inspected at least once a year, preferably shortly before the birds return to nest. At this time necessary repairs can be made, debris can be cleaned out, sawdust and shavings loosened, and fresh material added as needed.

It costs very little more to build a good nest box that will last 10-15 years than it does to build one that will last only 3-5 years. Durable, predator-proof boxes erected in carefully selected sites produce more ducklings and are well worth the small amount of extra work and expense.

Locating and Erecting Nest Boxes

In order to attract Wood Ducks, boxes must be suitably placed as well as properly constructed. Good visibility is especially important in attracting ducks to nest boxes. Boxes erected over water are often more successful than those placed at a distance from the water. They should be placed so that the entrance will be conspicuous to birds using the water area. The front of the box should never be obstructed by nearby vegetation.

Trees or stout snags surrounded by water during the nesting season are good sites for nest boxes. Shoreline trees are satisfactory also, but if they

are accessible to squirrels, metal boxes should be used. Boxes should be elevated sufficiently to avoid flooding by high water. Although Wood

Fig. 3. Sheet Metal Guard for Protecting Wooden Nest Boxes on Posts from Climbing Predators.

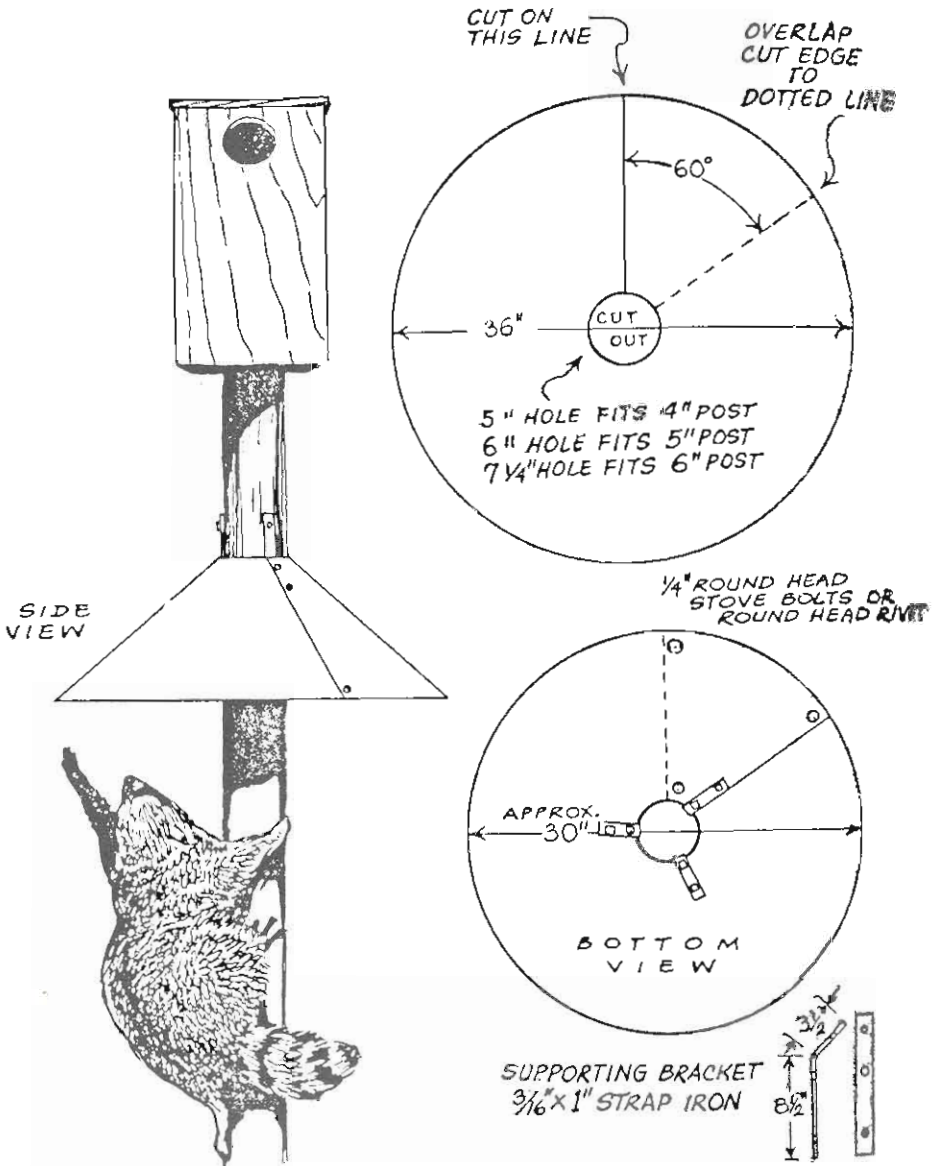
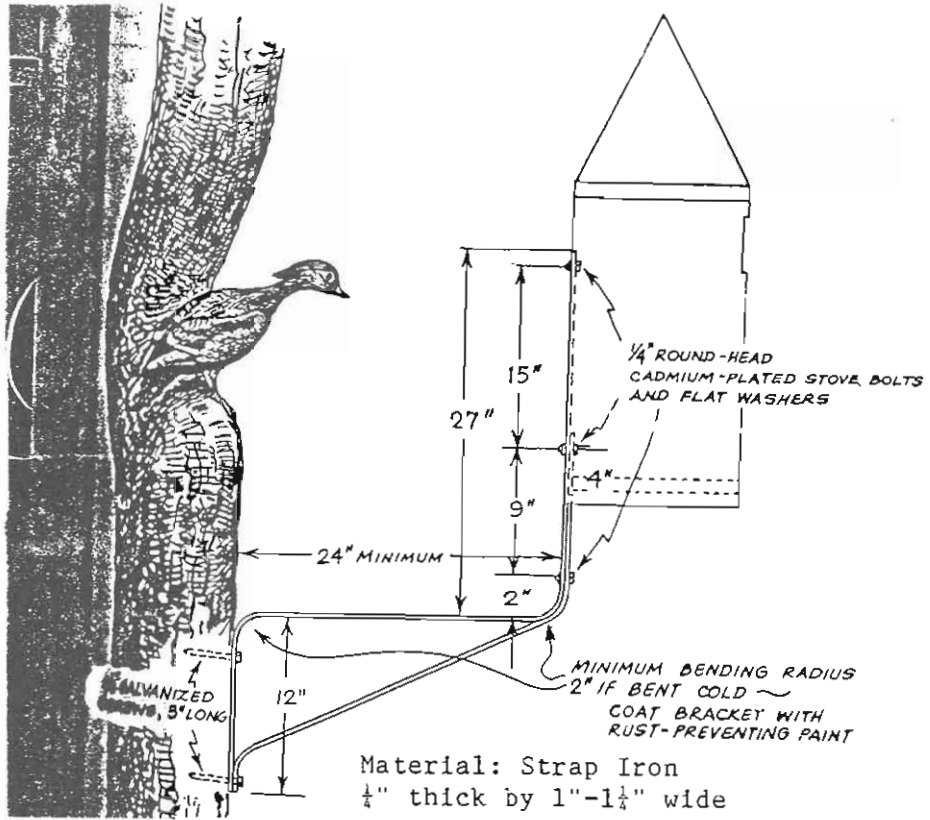


Fig. 4. Metal Bracket Designed to Keep Raccoons Out of Metal Nest Boxes.



Ducks have been known to nest in boxes as far as half a mile from water, in general, it is advisable to erect boxes no more than a quarter of a mile from water (newly fledged ducklings walk to water accompanied by the female). Erect only a few nest boxes in an area the first year. If Wood Ducks use them, add additional boxes in subsequent years if the breeding population increases. Boxes should be installed in as nearly a vertical position as possible since backward tilt may prevent ducklings from climbing out. Be sure the inside front from the bottom of the box to the lower edge of the entrance hole contains roughened wood, hardware cloth, or some other means by which the ducklings are able to climb to the entrance with their sharp toenails.

Nesting Material

Since Wood Ducks carry no nest material, about 3 inches [7.62 cm] of sawdust or shavings should be put into the box. This is used by the birds to cover their eggs during the laying period and serves as a substitute for decaying wood usually found in natural nest cavities. Starlings will often remove shavings from a box while sawdust alone tends to pack, so a mixture of the two is generally the most satisfactory. ■

Adapted from Webster, Clark G. 1954. *Nest Boxes for Wood Ducks*. U.S. Fish and Wildlife Service, Washington, D.C., Wildlife Leaflet 351, and the revised edition *Better Nest Boxes for Wood Ducks*, Wildlife Leaflet 393 by the same author, 1958.

New Perspectives on Threats to Cavity Nesting Birds

Chandler S. Robbins

The three bluebird species are perhaps unique among North American songbirds in the way they have been able to respond to assistance from man. There are a great many other species of cavity nesting birds that are facing serious threats as a result of man's activities. I wish to address in particular the loss and fragmentation of forests and their impact on a wide variety of birds both here in the United States and Canada and in the American tropics.

First, I want to point out that forests are of importance to bluebirds, especially during the winter months when they rely largely on the native berries produced by our forests, including the high-energy poison ivy berries, which are a major food item during severe weather.

You have already heard today from John Sauer about the cooperative Breeding Bird Survey, which is used to monitor changing populations of birds throughout the United States and Canada. This survey has alerted us to recent declines in many species of birds, especially those that depend on extensive native forests and extensive field habitats. We have shown that populations of forest-interior specialists, as we call them, are decreasing much more rapidly in a heavily developing strip of land that stretches from Philadelphia to the Washington, D.C., area than they are in the rest of eastern North America. While these forest-interior birds are declining, other woodland species, on the whole, are maintaining normal numbers.

What, then, are these forest-interior specialists, and how do they differ from other woodland birds? Basically, the forest-interior specialists are the long-distance migrants, such as the warblers, vireos, tanagers, and flycatchers which spend more than half

the year in the tropics, but migrate north to the United States and Canada in April and May to raise their young. In August, September, and early October, most of them return to their tropical homes in the West Indies, Mexico, and Central and South America.

Why do they require large tracts of hundreds of acres of forest for nesting when each pair defends a territory of only about one to ten acres, depending on the species? We believe the reasons include: (1) the very high predation rate along wood margins and in the interior of small woodlots, demonstrated experimentally by David Wilcove; (2) the life history habits of the neotropical migrants that render them especially vulnerable to predation—the great majority build open nests on or close to the ground and have only a single nesting attempt per year; and (3) cowbird parasitism, which is concentrated close to wood margins and which peaks just at the time when the neotropical migrants are raising their single brood.

Among the woodpeckers, the Downy is a generalist and is unaffected by woodland area. The Hairy and Red-bellied Woodpeckers shun the smallest woodlands, but reach normal abundance in woodlands of 75 acres or more. The large Pileated Woodpecker prefers extensive forest of thousands of acres, but seems to be an adaptable species and will sometimes be found in woodlands of 200 acres or less.

It appears then that, for the most part, the cavity nesting species are being only minimally affected by forest fragmentation.

Let's consider for a few minutes, however, the habitat changes taking place south of our borders. Tropical forest is being cut and fragmented at a

frightening rate. This is bound to have some effect on "our" birds, those we share with our southern neighbors, as well as on "theirs," the nonmigratory tropical species.

For the past four winters my colleagues and I have worked with our Latin American and Caribbean counterparts in seven countries in the West Indies, Mexico, and Central and northern South America, comparing bird populations in large and small forests during the northern winter. The purpose of the study was to determine which species were most affected by fragmentation of the extensive tropical forest into isolated fragments. We used mist netting and banding as well as standardized counts to compare relative abundance of each bird species in many different habitats.

As expected, the results showed major differences among different species. Some species were equally common in small isolated tracts and extensive forest. Some were more common in the small tracts; others were restricted to the extensive forest.

We had predicted that many of the forest species that are area-sensitive on their breeding grounds would be found only, or at least primarily, in undisturbed extensive forest on their wintering grounds. This turned out not to be true. In fact, nearly all of our forest-interior breeders were found in just about equal abundance in extensive forest and small isolated fragments.

Many of the resident birds, on the other hand, including a large number of cavity nesting species, were found to be lacking, or in greatly reduced numbers, in the small isolated sites.

If any one group were to be singled out as being most critically affected by tropical forest fragmentation, it would be the birds classified as Suboscines, the most primitive of the perching birds. The Suboscines include the following eight New World families: the tropical ovenbirds, woodcreepers, antbirds, tapaculos, flycatchers, cotingas, manakins, and sharpbills. Other families (and subfamilies) that were more poorly represented in the fragmented

tropical forest were the trogons, jacamars, puffbirds, toucans, woodpeckers, todies and tanagers.

The Fish and Wildlife Service has been much concerned over the impact of forest fragmentation. My colleagues and I from the Patuxent Wildlife Research Center recently spent four summers visiting a random sample of 470 woodlots of various sizes in Maryland and adjacent states to determine how serious the fragmentation effects were on various species, and to find out in particular how large a tract of contiguous forest needs to be preserved to maintain nesting populations of the various bird species.

We found that small woodlands often had as many species, and as many nesting pairs of birds, as a study site of similar size within an extensive forest. However, certain species were always lacking in the small forests, especially those less than 25 acres in size. On the other hand, there were no woodland species that were lacking from the interior of the large forests. For most species we found there was a strong relationship between forest area and the bird species nesting there.

The frequency of occurrence of vireos, warblers, tanagers, Wood Thrushes, and some of the flycatchers decreased predictably as size of woodlots decreased. The opposite was true for the edge species such as House Wren, Gray Catbird, European Starling, and Brown-headed Cowbird. The larger the woods, the lower the probability of finding these short-distance migrants.

What does this tell us about cavity nesting woodland birds? Many of our cavity nesting species are permanent residents: Carolina Wrens, woodpeckers, chickadees and titmice, for example. Some, such as bluebirds and owls, are partially migratory and can be classed as short-distance migrants. A few, such as the Great Crested, Dusky-capped, and related flycatchers, are neotropical migrants, as are the Prothonotary and Lucy's Warblers. The cavity nesting habit, of course, gives

(Continued on page 26)

PLANTINGS FOR BLUEBIRDS AND OTHER WILDLIFE

Nannyberry

Karen Blackburn

Nannyberry

(*Viburnum lentago*)

Native Range—From Quebec south through the mountains of Georgia and west to Manitoba and Colorado.

Hardiness—Zone 2.

Habitat—Found in the full shade of the forest understory, the partial shade of the forest edge, or in full sun in hedgerows of fields and swamps.

Habit—A deciduous shrub or small tree occasionally reaching thirty feet in height. Finely-toothed leaves are arranged opposite one another on the branches and turn a purplish-red in autumn.

Fruit and Flowers—Small white flowers appear in flat-topped clusters that are 2 to 5 inches in diameter. The blue-black fruits ripen in the fall and are edible.

Landscape Value—Good choice for woodland borders or other partially shaded sites. A rapid grower.

Culture—Prefers rich, moist sites under partial shade. Easily transplanted. Propagate by seed, softwood or hardwood cuttings, or layering. Seeds will usually germinate the second spring after sowing.

Wildlife Value—Though not taken as "choice food," the fruits of Nannyberry are used by Ruffed Grouse, Northern Bobwhite, Ring-necked Pheasant, Northern Flicker, Gray Catbird, American Robin, Eastern Bluebird, Cedar Wax-



wing, Rose-breasted Grosbeak and Purple Finch. The plants also provide cover and nest sites for many species of birds. ■

Rt. 3, Box 650
Marianna, FL 32446

A Bird in the Bush

Karen Blackburn

Recently, a reader from North Carolina wrote to tell us of a planting of

Bush Honeysuckle, also known as Tatarian Honeysuckle (*Lonicera tatarica*). She reported that when the red fruits appear, "the bluebirds love to feed them to their newly-fledged babies."

Tatarian Honeysuckle, a native of southern Russia, is often recommended for wildlife plantings, and it has been widely planted in the United States for this purpose. However, in *The Audubon Society Encyclopedia of North American Birds* by John K. Terres, a discussion of poisonous plants notes that birds have been known to be poisoned by consuming the fruits of Tatarian Honeysuckle. Apparently, a substance in the fruit, saponin, acts as an anesthetic and muscle poison. Although deaths of birds which have fed on these fruits are reportedly uncommon, saponin is capable of killing by cardiac paralysis. More often, birds that have consumed quantities of this fruit are de-

scribed as being "inebriated" or "stuffed," leaving them vulnerable to predation. It is not known how common such problems are, and surely birds have eaten small quantities of the fruit without suffering ill effects; however, we would like our readers to be aware of the potential for problems which may occur with plantings of Tatarian Honeysuckle.

We thank our reader for her report and invite other readers to report their observations. If you have "planted for wildlife" or have seen wildlife feeding, nesting or otherwise displaying a preference for particular plants in your area, we ask you to share your observations with us. Please be as specific as possible, including such information as the name of the plant (botanical name when known) and the approximate time of year when the observation was made. Send your reports to Karen Blackburn, Rt. 3, Box 650, Marianna, FL 32446. ■

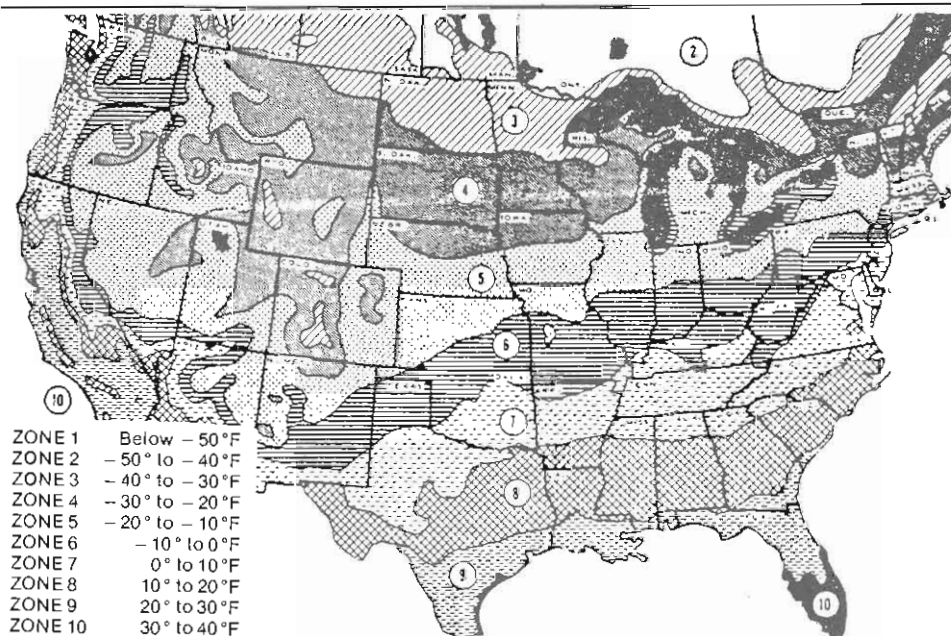
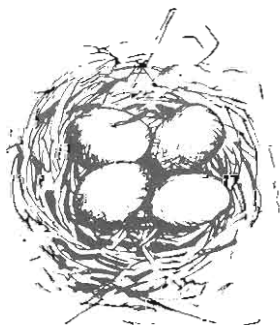


Figure 1. Hardiness Zones for the United States and southern Canada. Temperatures for each zone are the average annual minimum temperatures. When no zones are mentioned with the plant description, plants are hardy anywhere. Factors within zones such as altitude, exposure, soil type, moisture, etc. can create variations. This map was developed by the Agricultural Research Service of the U.S. Department of Agriculture.

QUESTION CORNER

Lawrence Zeleny



In one bluebird nest this year, I found the remains of three six-lined skinks (*Cnemidophorus sexlineatus*), each about two inches long. The remains were not digested and were completely intact except that bits of their tails were missing. Could the parents have brought the skinks for food and the nestlings refused them, or could the skinks have gotten into the nesting box by themselves?

Andrew Hartley
Batesburg, South Carolina

Surely, skinks do not commonly inhabit nesting boxes, so it is unlikely that they found their way into your box intentionally. In removing old nests from bluebird nesting boxes, large dead insects of various kinds are often found. It would seem that the parent birds occasionally bring such insects into the boxes with the intent of feeding them to the nestlings but, finding them too large or otherwise unsuitable, simply discard them beside the nest. Although skinks, of course, are not insects, the same explanation for their presence in a nesting box could easily apply.

Another possibility might be that some person put the skinks in the box as a prank. The fact that in your letter you describe the box as being in a schoolyard adds credence to this possibility.

What happened to our bluebirds? I had a nest and a dead bluebird in my box and talked to others who also found dead birds in their boxes. (The

birds arrive here in March and nest in April.) We had a freak snow storm in April; the snow was 21-26 inches deep and stayed for about a week. Could the bluebirds have starved? frozen?

Leo D. Cline
Litt Carr, Kentucky

It is impossible to say for sure why so many dead adult bluebirds were found in nesting boxes in your area last spring. From what you say, however, it seems likely that the birds died of starvation as a result of the unseasonable snow storm in April.

Bluebirds normally obtain most of their food, consisting mainly of insects, from the ground. When the ground is covered with deep snow, they depend mostly on berries or other fruits, either wild or cultivated. By April, most such food is likely to be gone and the bluebirds are then in serious trouble. They then may remain in their boxes or cavities to conserve their energy and keep warm. They may survive in this manner for several days, but will then perish if conditions do not improve.

In times like this, the bluebirds can often be saved by supplying them with raisins or other dried fruits, chopped nut meats (unsalted), or suet. They are not seed eaters and thus cannot find much to eat in the usual mixtures of wild bird feed. ■

A Front-Opening Bluebird Nest Box Design

Harold S. Pollock

From time to time our members make nesting box design modifications. Although the box here described is relatively time-consuming to construct, some of our readers may desire to build a few for comparative purposes. Lawrence Zeleny does not recommend an entrance hole larger than 1 1/2 in. for either Eastern or Western Bluebirds to protect against starling invasion. Mountain Bluebirds, at least in some areas, may require the larger entrance, but monitors should be particularly alert to box use by non-native species.

I arrived at the bluebird nest box design about to be described after building various top, bottom, side and front-opening arrangements. Of them all, the front-opening swing-down type seemed to offer the most advantages. When opened, the front swings down out of the way exposing all of the interior to view and permitting easy and thorough cleaning.

Front-opening nest boxes of conventional design have, as I discovered, one major weakness. After exposure to the weather for a year or two the cracks between the front and the sides tend to open up and admit moisture. The flanges that are incorporated in the fronts of this new design overlap these cracks and maintain a dry interior.

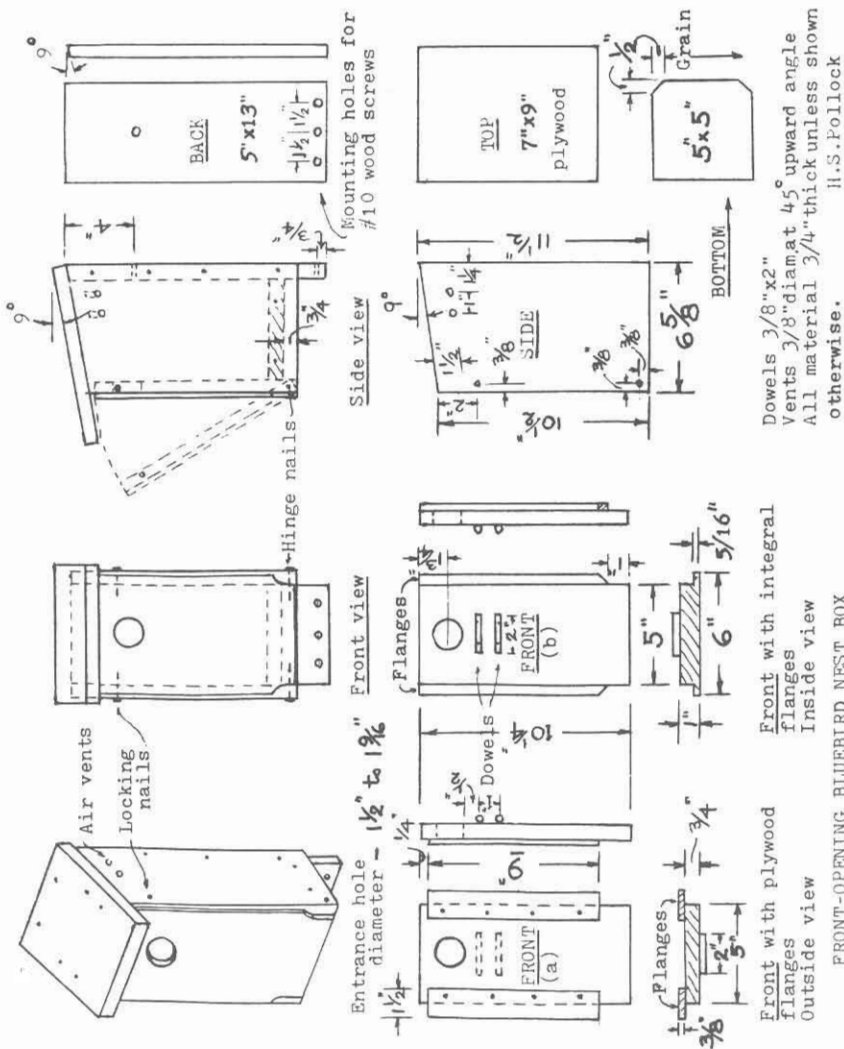
Most front-opening nest box doors swing *up* with the hinge nails at the top, but the swing *down* design will be found to be superior as it enables one to do a better cleanout job. This was strikingly evident to me in the summer of 1986 when female gypsy moths were depositing eggs in my nest boxes on an island in the St. Lawrence River. With swing-up fronts it was almost impossible to get at all of the egg masses, whereas with the swing-down type there was no problem. Also, when working on the box, the bottom hangs down out of the way, freeing both hands for installation, cleanout, or banding. Coon guards will not interfere with the box opening.

These nest boxes are fastened to posts or trees by using wood screws —Robertson square head wood screws are preferred. Screws permit easy removal of the boxes for repairs or a change of location. Because the upper screw is below the roof, the construction is simplified and material is conserved. The roof covers the back which is cut at a slight angle for a better fit. The lower screw holes are shown below the bottom but may be drilled above the bottom if theft is a problem. Also 1 1/4 in. [metric equivalents are provided on the construction diagram] x #6 Robertson wood screws may be used in place of the locking nails for added security.

The nest boxes may be built completely of cedar except for the roofs which should be of plywood to avoid cracking. Plywood may also be used for the sides and back although there is a tendency for it to split when nails are driven in edgewise. All plywood should be weather grade and all nails galvanized for long life.

After the sides are cut, drill one or more 3/8 in. ventilation holes in each, the number depending on local weather conditions. These should be oblique vents drilled at an upward angle of about 45° to the surface to keep out rain (Pollock, *Sialia* 9(3):85-86). Also drill clearance holes for the 1 1/2 in. hinge and locking nails.

Two front designs are shown in the drawing. Front (a) with plywood flanges is easier to construct and is



FRONT-OPENING BLUEBIRD NEST BOX

| Equivalents | Inches | Cm. |
|-------------|--------|------|
| | 1/4 | .64 |
| | 5/16 | .80 |
| | 3/8 | .95 |
| | 1/2 | 1.27 |
| | 3/4 | 1.9 |
| | 1 | 2.54 |
| | 1 1/4 | 3.2 |
| | 1 1/2 | 3.8 |
| | 1 9/16 | 4.0 |
| | 1 3/4 | 4.4 |
| | 2 | 5.1 |
| | 4 | 10.2 |
| | 5 | 12.7 |
| | 6 | 15.2 |
| | 6 5/8 | 16.8 |
| | 7 | 17.8 |
| | 9 | 22.9 |
| | 10 1/4 | 26.0 |
| | 10 1/2 | 26.7 |
| | 11 1/2 | 29.2 |
| | 13 | 33.0 |

Dowels $3/8$ "x2"
 Vents $3/8$ " diam at 45° upward angle
 All material $3/4$ " thick unless shown otherwise.
 H.S. Pollock

the choice if a table saw is not available. Use glue and 1 in. nails for the plywood strips. Front (b) is somewhat more challenging to the woodworker but is better overall. Use a circular saw blade or a dado cutter in a table saw to form the integral flanges from a piece of 1 in. x 6 in. rough cedar. An adjustable wobble dado cutter is especially effective but is expensive. Aim for a snug fit between front and sides. A sabre saw, band saw or a router may be used to remove the bottom 1 in. section from each integral flange—see drawing.

The only critical nest box dimension is entrance hole size. Although 1 1/2 in. holes have been the standard for many years, there is hard evidence to suggest that Mountain Bluebirds need and Western Bluebirds prefer 1 9/16 in. holes; special hole saws of this size are available (Aylesworth, *Sialia* 6(4):123-124) if only 1 1/2 in. hole saws are readily available the holes may be enlarged by use of a rotary rasp or the holes may be bored with a brace and adjustable bit.

In the thicker fronts I've used a double hole size to facilitate movement through the hole; 1 9/16 in. from outside and 1 3/4 in. from inside with the two holes meeting about halfway.

Inside the front and just below the entrance hole, two or three dowels are added using glue and small nails or brads. According to Alfred Perry of Boise, ID, to whom I am indebted for this idea, the parents will hang on to these rungs in rainy weather and lean down to feed the nestlings without getting them wet.

To cut costs and avoid having to drill machine-made hardwood dowels, a hand-fashioned soft wood substitute can easily be made. Cut square strips from a piece of pine or cedar, then round off the edges with a spoke shave. If the inside of the front is smooth a few shallow horizontal saw cuts (not shown) should be made be-

low the entrance hole to enable the nestlings to escape more easily.

Assembly: All permanent joints should be made with waterproof glue and galvanized nails. Clamp the back in a vise; carefully align one side with it and nail it in place using three or 1 3/4 in. or 2 in. nails; remove from vise, turn over and nail the other side to the back. The bottom should not fit snugly into place with the notched corners against the back (the grain should be perpendicular to the sides). Nail the sides to the recessed bottom using four 1 3/4 in. nails.

Press the front into place between the sides with bottom edges in alignment. There should be a good fit between the flanges and the sides all around. Drill through the prepared hole in one side into the front to a total depth of about 1 1/4 in. Insert a 1 1/2 in. hinge nail and drive it all the way in. Repeat for the other hinge nail. The front should now swing freely through 180°. There will be a small gap between front and bottom which allows for some variation in material thickness.

Close the front and drill for the 1 1/2 in. locking nails which should slip into place without binding. Secure the top to the sides and back with six 1 3/4 in. nails. Finally drill four clearance holes in the back for the #10 mounting screws.

To extend the useful life of the nest box, the plywood and the flanges should be painted with exterior latex or other suitable paint, avoiding excessively bright or dark colors. Alternatively, boiled linseed oil may be used for this purpose. No paint should be applied to the inside.

Although construction time is somewhat greater than for conventional designs, I believe this is justified by the advantages this style offers: ease of inspection of nest and nestlings, protection against the elements, and more thorough cleanout, especially where parasites are a problem. ■

104-225 Belleville St.,
Victoria, B.C. V8V 4T9

(Threats-continued from page 19)
them some protection from both predation and cowbird parasitism. Large clutches, as in the House Wren and the chickadees, give some of these birds an advantage. And several of these species are multi-brooded as well.

The Breeding Bird Survey has shown some very different trends among cavity nesting species. The Great Crested Flycatcher, which is able to reproduce successfully in edge habitats, has maintained its abundance. The Bewick's Wren, on the other hand, even though being a cavity nesting species, has in the past two decades almost completely disappeared from that part of its range east of the Mississippi River. The Prothon-

otary Warbler increased from 1968 to 1982, but has subsequently been decreasing.

A surprising number of the species in the above families are cavity-nesting birds: all of the trogons, woodpeckers, barbets, toucans, woodcreepers, jacamars, puffbirds, and todies, some of the tropical ovenbirds, and a few of the antbirds and flycatchers.

These are the cavity-nesting species that are really in trouble. Any help that you folks can give by promoting conservation in the tropics will go a long way toward saving these beautiful birds. ■

This material was presented as the banquet speech at the Tenth Annual Meeting of the North American Bluebird Society 19 September 1987, Chevy Chase, Maryland.

Bluebird Banders Available

In addition to those people listed previously (9(2):72), the following individuals, who have the necessary license, have volunteered to band bluebirds on trails in their area. Contact a bander when nestlings are not more than half-grown to allow some leeway in scheduling. Distances banders are willing to travel will vary. Do not expect anyone to travel more than a few miles for a single brood.

Fred Comstock
168 Main St., No.
Bethlehem, CT 06751
(203) 266-7337

Rene Laubach
472 W. Mountain Rd.
Lenox, MA 01240
(413) 637-0320

Betsy Jones
812 Sherwood Rd.
Shoreview, MN 55126
(612) 490-1975

Forest V. Strnad
1400 Autumn Dr., #212
Faribault, MN 55021

Jim Gerle
R.D. #2, Box 151Y
Newfield, NJ 08344
(609) 694-1337

Charlotte Jernigan
Rt. 2, Box 404-A
Wagoner, OK 74467
(918) 485-5974

Karen Khol Yaich
Hampton Waterfowl Research Center
Rt. 1, Box 188 A
Humphrey, AR 72073

Elsie K. Eltzroth
3595 NW Roosevelt Dr.
Corvallis, OR 97330
(503) 752-0666

Thoreau Society President-Elect Thomas Blandings Introduction of Lillian Lund Files 11 July 1987, at the Annual Meeting in Concord, Massachusetts

For Henry Thoreau, as for most New Englanders in his day, the bluebird was the harbinger of spring, a sure sign of better days ahead. Thoreau's Journal and letters, as well as those of his friends and family, abound with annual reports of the bluebird's return. Ralph Waldo Emerson, Ellery Channing, Daniel Ricketson, Sophia Thoreau, John Thoreau, Jr., all refer to the prodigal beauty of this delicate bird.

In Thoreau's Journal you can always count on two recurring images of the impending spring: One perennial joy for him was to watch the ice of Walden melting apace, another was to see the bluebird return, carrying the sky on his back.

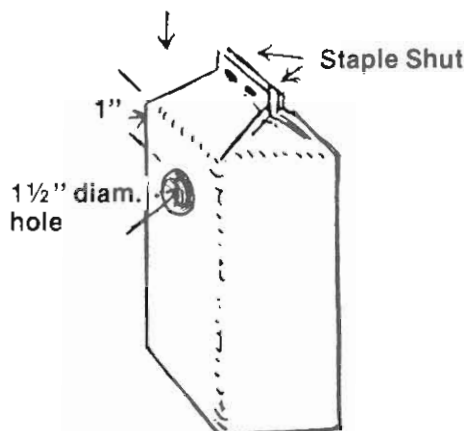
If, as Thoreau holds, Walden Pond was made deep and pure for a symbol, so too the blue of the bluebird. Louisa May Alcott, some years after Thoreau's death, shared with the young readers of Merry's Museum a happy memory of her own childhood, when Thoreau "used to come smiling up to his neighbors, to announce that the bluebirds had arrived, with as much interest in the fact as other men take in messages by the Atlantic cable." And Ellery Channing recalled in his biography of his friend, Thoreau: The Poet-Naturalist, that Thoreau's concert was the bluebird, the robin, and the song-sparrow, "melting into joy after the silent winter."

During Thoreau's last illness the bluebird remained an archetypal image with which he identified his own fate. The year before Thoreau died he wrote his friend Daniel Ricketson in New Bedford: "Your letter reached me in due time, but I had already heard the bluebirds. They were here on the 26 of February at least....The bluebirds come again, as does the same spring, but it does not find the same mortals here to greet it....As I was climbing the sunny slope to [George Minott's] strangely deserted house, I heard the first bluebirds upon the elm that hangs over it. They had come as usual, though some who used to hear them were gone....Perhaps there will be a time when the bluebirds themselves will not return any more."

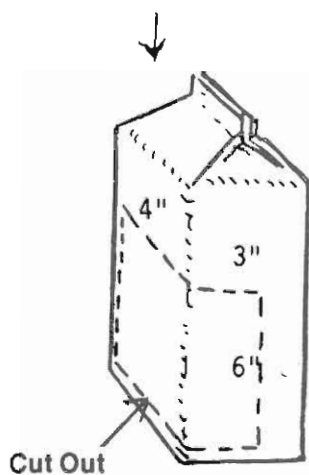
There did come a time, lamentably, when the bluebirds disappeared from our landscape and from our imaginations. I believe that Henry Thoreau would have greatly admired the efforts our speaker tonight has made to "Bring Back the Bluebirds." Lillian Files, Past President of the North American Bluebird Society, has worked with a wonderful sympathy and devotion to restore this integral aspect of New England nature. She has been lecturing on bluebirds for many years throughout New England and has had bluebirds on her own property in Tyngsboro for over 45 years. She has 524 boxes on her trail and monitors 114 boxes herself. So reckoned is Lil for her efforts on behalf of the bluebird that she has come to be known far and wide as "the bluebird lady." Tonight you are in for some infectious enthusiasm. I give you my friend, Lil Files, the bluebird lady. ■

One-Half Gallon Milk Carton Bird House

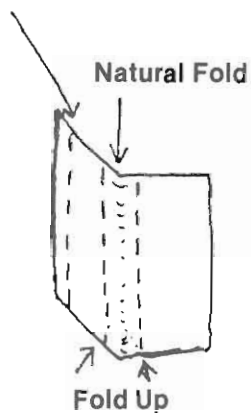
FIRST ½ Gallon Milk Carton



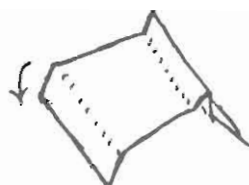
SECOND ½ Gallon Milk Carton for Roof Overhang

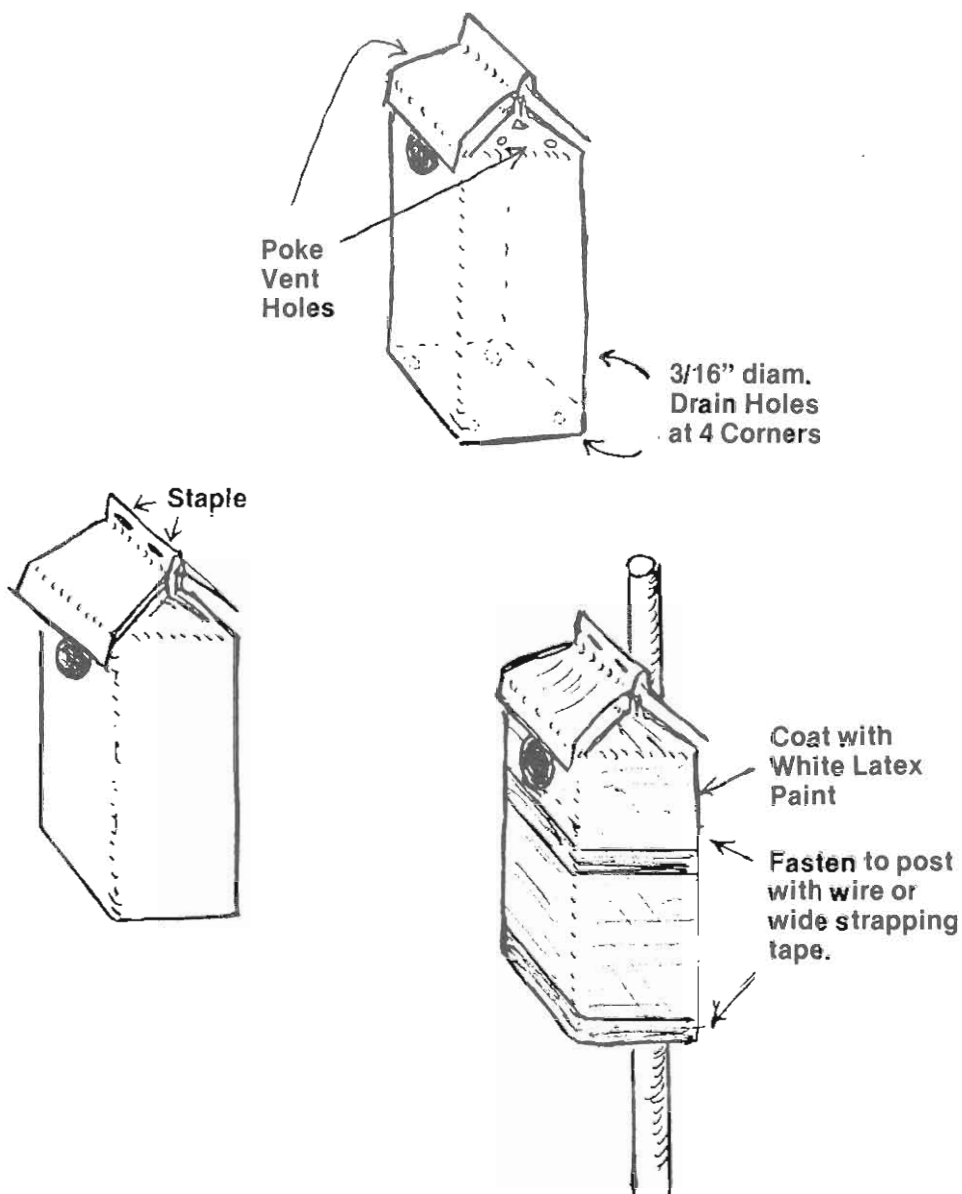


Fold Down



Fold Down for Overhang





I made three of these milk carton bird houses and put them up on our acreage. They were occupied almost immediately by House Wrens so I do not know if bluebirds would use them; however, they served their purpose in acting as "decoys" leaving the wooden boxes available and peacefully occupied by the bluebirds. ■

P.O. Box 120
Ashton, MD 20861

Volume 10, Number 1

Report of the Tenth Annual Meeting

Mary D. Janetatos

The Tenth Annual Meeting of the North American Bluebird Society began on Friday morning, October 18, 1987, at the National 4-H Center in Chevy Chase, Maryland. There were guided tours to view the monuments in and around Washington, D.C., and to do some birdwatching along the C&O Canal and other spots in nearby Maryland. Erika Wilson led the bird walk, and the group reported sighting many species including a Bald Eagle.

Exhibits were set up in the Colorado Room. There were veteran exhibitors Laurance and Adelaide Sawyer (Bluebird Housing of Ringgold, GA); Jack and Ruby Finch (Homes for Bluebirds of Bailey, NC); Richard and Marys Hjort of Chisago City, MN (Upper Midwest Bluebird Recovery Committee); Myrna Pearman and Marie Pijeau (Alberta, Canada), with the interesting Ellis Bird Farm exhibit; and bluebirder and artist, Fran Hanes (Utica, NY), whose beautiful bluebirds painted on china captivated everyone. Among the first time exhibitors were Maryland artist John Taylor (of "Bluebirds in the Snow" fame) who showed his hauntingly lovely bluebird painting which is used on the 1987 Maryland Conservation Stamp; Bob Schutsky with his Muddy Run (PA) bluebird exhibit, and Joe Suess and Mark Wallace of nearby Howard County, MD with their "Herd-a-Bird" sparrow trap. Lillian Files' exhibit showed the bluebird on Massachusetts' state wildlife poster. Rounding out the group was the NABS exhibit, which sported the *new* NABS poster: "Welcome Back, Little Bluebirds" as well as a new and arresting portrait of the male bluebird by John Mullican of Bowie, MD.

The group, which numbered approximately 150 people from the District of Columbia, 21 states and 3 prov-

inces, gathered for the Friday evening program at which Reverend Raymond A. Prybis, OMI, was host. Fr. Ray, a formidable birder and a founding officer of the Society, offered a prayer asking God's blessing on the proceedings and expressed his pleasure at being asked to welcome the attendees. He then introduced Luther Goldman of Greenbelt, MD, whose topic, "Wildlife Photography" was illustrated with breathtaking photos of the birds and animals he had encountered with his camera during a productive career with the U.S. Fish and Wildlife Service. Luther's photographs, along with those of several other outstanding nature photographers, illustrate the new NABS slide program shown later in the Meeting. "Wildlife Art" followed wherein John Taylor guided the audience through the nature-oriented works of painters and brought out valuable critical points as to the themes of each painting. George Jonkel, chief of the Bird Banding Laboratory of the U.S. Fish and Wildlife Service, explained the intricacies of analyzing the data relating to the recovery of banding records from across the continent.

Saturday morning attendees embarked on one of two destinations for field trips: Larry Zeleny's bluebird trail or the U.S. Fish and Wildlife Research Center at Laurel, MD. Those on the Zeleny tour were able to see the various nest box designs tried by Larry, including the experimental paint-coated plastic jugs which have been used successfully by bluebirds, but not by House Sparrows. The other group went to the Patuxent Wildlife Research Center and viewed the endangered species unit, with its most famous inhabitants, the Whooping Cranes. Both groups ended up with a tour of the Goddard Space Flight Center at Greenbelt, MD,

where they enjoyed a picnic lunch. Before lunch, a moving ceremony took place wherein two elected officials honored NABS Founder, Larry Zeleny. The Honorable Steny H. Hoyer, U.S. Congressman, 5th District, MD, commended Dr. Zeleny for his timely activities on behalf of bluebird conservation and promised to place these comments in the *United States Congressional Record* soon. Parris Glendening, County Executive of Prince George's County, MD, read a proclamation which referred to the fact that the Eastern Bluebird had been declared the official County Bird of Prince George's County and contained congratulations for the North American Bluebird Society. Following this ceremony, the buses headed back to the 4-H Center.

(See photograph on page 38)

On Saturday afternoon the program began with an invocation by Fr. Ray and a welcome by the day's host, Robert J. Lavell, past president of the Audubon Naturalist Society of the Central Atlantic States. The NABS annual business meeting began with President Sadie Dorber chairing. The slate of officers, which had been enclosed with *Sialia*, was presented by Nominating Chairman Lillian Lund Files. All nominees were elected. The bluebird population reports for Mountain and Western Bluebirds were inadvertently omitted, but will be included in their entirety in *Sialia*.

Tedd Gutzke, of Kenmare, ND, chairman of the NABS Research Committee, described the "NABS Research Grants Program," identified the other committee members, and explained the process by which the grants are awarded each year. Dick Tuttle, of Delaware, OH, spoke on "Bluebirds and Tree Swallows," documenting the well-known competition for nest boxes experienced by bluebirders whose geographic area also included the beautiful native Tree (and/or Violet-green) Swallows. Dick admits to becoming more philosophically accepting of the occasional triumph of the swallows over our banner bird and feels this is a factor of some personal spiritual ma-

turing on his part. Watch for his complete article in a future *Sialia*.

Del Fisher, professional radio announcer and representative of the Dakota Wildlife Trust (DWT), described the success DWT members encountered when a nest box project was launched involving local Boy Scouts. Another dimension of this success is evident in Del's generous handling of the new NABS slide program. "Cavity Nesting Birds of North America" for he is the narrator and producer of this new program and NABS is the grateful recipient of this novice bluebirder's talents and professional expertise.

Following a break, Dave Ahlgren of Burnsville, MN, gave an entertaining and informative exposition of "The Peterson System." Andrew Nelson, of Oxford, WI, electrified the group by producing giant nest box replicas which he said were built to proportions comparable to a raccoon's "arm" measurements vis-a-vis Andrew's arm measurement. He tentatively concluded that a "modified" Peterson box was the best deterrent of raccoon predation. [Author's note: this conclusion can of course be refuted by utilizing baffles, etc.]

John Sauer of Patuxent, [MD] Wildlife Research Center's U.S. Breeding Bird Survey gave a "21 Year Study of Bluebirds" in which, after many fluctuations in population, bluebirds are now on a steady rise. Could it be because they are having more success in finding nesting sites? Reid Caldwell, of Lucas, OH, then spoke on "Herbicides—Birdicides?" citing much data to support an affirmative answer to that question.

Larry Zeleny's talk on "Bluebird Foster Parenting" drew the afternoon's activities to a close. The attendees were told of the heartening results which can follow the tragic demise of one or both parent bluebirds.

Saturday evening's invocation before the banquet was given by Glenn Funkhouser, whose wife Sarah (of NABS' office staff) had done the table

flower arrangements. Following the meal, attendees heard the evening's star speaker, Chandler S. Robbins. Entitled "Forest Fragmentation," Chan's fascinating talk was illustrated with breathtaking photographs of the incomparable wildlife in the American tropics. In dramatic terms the warning was sounded as to what disaster can attend the non-coordinated laying waste of tropical forests. It is fervently hoped that this frightening alarm will be heeded, and that the voices of sanity will prevail in this fragile part of our planet.

The new slide program was shown with Del Fisher at the controls. The program was favorably received, and after the final polishing touches will be available through NABS. Tom Hodgson, NABS Board Member of Jackson, MI, described the "Bluebird Festival" held there annually in March. The Festival incorporated other facets of the community, chiefly wildlife artists; therefore, much added publicity is

gained and funds are raised for the Dahlgrem Environmental Center (affiliated with the Jackson Community College) of which Tom is the Chief Naturalist.

The evening's activities were crowned with a sing-along led by Tom Hodgson. Merry lyrics with a nature twist were sung by all, and then a grand raffle was held which included the floral arrangements, several pieces of Fran Hanes' painted jewelry, bottles of bluebird label wine, nesting boxes and other items.

Following a Sunday field trip to Patuxent Wildlife Research Center and the Patuxent River Park, the meeting concluded. NABS Past Vice-President, Marty Chestem chaired, with grace and success, the Annual Meeting Preparations Committee. Members now can anticipate the next meeting to be held July 9, 1988, in Montreal, Canada. Host group is the "Societe de le Merle Bleu," founded by France and Andre Dion. Watch *Sialia* for details. ■

Congratulations

A joyful announcement was received by NABS last spring which said:

TOM AND ANGELA

"It is with great pleasure that we inform you of our marriage, which took place in Toronto, Canada, on Monday, March 30, 1987."

NABS members will recall that Tommy Outerbridge is the founder and first president (1983) of the Bermuda Bluebird Society. Tommy has been battling paralysis for nearly four years following the disastrous fall he suffered while assisting yet another bird, the Bermuda long-tail. The newlyweds can be contacted at the following address:

Mr. and Mrs. Thomas Outerbridge
"Summerhaven"
Smith's Parish
HS01 Bermuda

Mary D. Janetatos

In Sympathy

Andre and France Dion, Founders of the "Societe de le Merle Bleu" in Quebec, Canada, lost their 24 year old daughter Marie-Elaine in an auto accident in mid-September as they prepared to depart their home in St. Placide, Canada, to attend NABS' Tenth Annual Meeting. Attendees at the meeting in Chevy Chase, MD, were saddened to learn of this. I am sure all members join in conveying sympathy to Andre, France, and their family over this heartbreaking loss. France has established a toy teddy bear foundation in memory of Marie-Elaine, through which teddy bears in lieu of flowers can be collected and distributed to needy children. Anyone wishing to be in touch with the Dions can do so as follows:

Andre and France Dion
2 rue Sauve,
Saint-Placide, Quebec, Canada

Mary D. Janetatos

Awards Presented

The North American Bluebird Society awarded several plaques on 19 September 1987, at the Tenth Annual Meeting held at the National 4-H Center in Chevy Chase, Maryland. Individuals and one group received recognition for their contributions to bluebird conservation.

The **John and Norah Lane Award** for an outstanding contribution to bluebird conservation by an individual was made to the following people:

Barbara Robinson, of Brandon, Manitoba. Mrs. Robinson had collaborated with John and Norah Lane, worked with John at the B.J. Hales Museum of Natural History, Brandon University, and followed him as curator in 1975. During those years and following, she set out and monitored hundreds of nest boxes. She has, therefore, assisted the fledging of thousands of Mountain Bluebirds and Tree Swallows over several decades and, in doing so, always kept meticulous records.

Elsie Eltzroth, of Corvallis, Oregon, received an Award for her work and research with Western Bluebirds in Oregon. Elsie is a bird rehabilitator and licensed master bander. The numerous talks and demonstrations she has given have inspired many others to become involved in bluebirding. Her dozens of nest boxes have fledged hundreds of bluebirds and other small native cavity nesting birds. She has also coordinated and tabulated the nesting results of other bluebirders in Oregon.

Robert M. Schutsky, of Ronks, Pennsylvania, received an Award for his work in bluebird conservation at Muddy Run Ecological Park operated by the Philadelphia Electric Company in Drumore, PA. Bob has built and monitored hundreds of nest boxes in conjunction with his work as company biologist. Over and above this, he has conducted workshops for over 10 years in his area of southeastern Pennsylvania. He is also credited with stimu-

lating the interest of the Pennsylvania Game Commission to the extent that in 1985, the Commission adopted bluebird conservation on a statewide basis, thereby ensuring its continuance in perpetuity in Pennsylvania's State Parks.

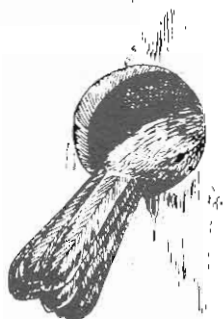
Dr. Harry Power III, of Rutgers University, NJ, received the NABS Research Award for his research into behavioral aspects of the male bluebird. He received his doctorate degree as a result of extensive research on bluebird cuckolding.

The **Lawrence Zeleny Award** for outstanding bluebird conservation by an organization was made to the **Maryland Ornithological Society, Inc. (MOS)**. MOS initiated bluebird activity in 1969 with Lawrence Zeleny as chairman of its Bluebird Committee. In 1970, six chapters participated in the project; by 1975 members of 12 chapters were monitoring 1180 nesting boxes. An estimated 16,000 bluebirds had been fledged during the initial 10 year period. In 1985, the presently-named Cavity Nester Committee initiated the Maryland Ornithological Society Trails (MOST) program for native cavity nesting birds. For the year 1986, members of 14 chapters monitored 2520 boxes which fledged 4503 bluebirds. In addition, 321 boxes were used by other native species including Prothonotary Warblers, Great Crested Flycatchers, Brown-headed and White-breasted Nuthatches. MOS President Robert Ringler accepted this award.

On Saturday evening, NABS President Sadie Dorber recognized the prodigious efforts of Martha Chestem, who chaired the Tenth Annual Meeting Committee. Sadie presented Marty with a needlepoint cushion graced with a bluebird hand-done by President Dorber. ■

Bluebird Tales

Mary D. Janetatos



The weekend of the Tenth Annual Meeting began with great hope. Attendees began calling as they arrived in town. First to arrive on the doorstep was NABS Board nominee **Keith Kridler** and his wife **Sandy** of Mt. Pleasant, TX, who are expecting their first little bluebirder in December. **Marlon Lyles** of Tulsa, OK, accompanied them. All three pitched right in and helped the NABS staff complete collating the convention folders.

At the 4-H Center, the arriving bluebirders coped with the rain and began renewing acquaintances, as well as forming new friendships. Coming early were committee chairmen, board members, and officers: **John** and **Harriet Findlay** of Birmingham, AL; **Tedd Gutzke** of Kenmare, ND; **Alexandra** and **John Samaras** of Wilton, NH; **Tom Hodgson** of Jackson, MI; **Dr. Shirl Brunell** and her friend **Phyllis Howard** of Texarkana, AR; and **Lillian Files** of Tyngsboro, MA. NABS President **Sadie Dorber** along with **Fran Hanes** and **Florence Grindrod** headed a contingent of around 20 New York State attendees. Pennsylvania, Maryland and Virginia officers included **Mark** and **Jean Raabe**, **Tom** and **Joe Talt**, **Bob Bodine**, **Ron** and **Priscilla Kingston**, **Jane Williams**, **Larry Zeleny** and Editor **Joanne Solem**.

Those on field trips Saturday encountered some rain, but this did not interfere with the enjoyment of what was seen: Larry Zeleny's bluebird trail and the Patuxent Wildlife Research Center, where Whooping Cranes and other endangered species were viewed in a rarely permitted glimpse of that section.

As the three busloads of attendees explored the space-related exhibits at Goddard Space Flight Center, NABS Treasurer **Chuck Dupr e** may have recalled his days prior to retirement when he was chief of buildings and grounds at Goddard. In those days, I would take NABS' monetary receipts to be deposited during his lunch hour, and he, **Marilyn Guerra** (NABS past president) and I would monitor a few of the nest boxes he had placed on the visitors' center grounds. Many times in early September we could watch bluebirds perching on the sup-

port wires of the sample rocket, poised as if for blast-off. In my opinion, Chuck had wisely spent the government funds at his disposal because mowing was kept to a minimum, and wildlife food plantings were placed everywhere....But, back to the present!

While the annual meeting continued, I thought often of all those who pioneered the bluebird cause and of those championing it at present.

In the mail, we heard from **Grace Gengo** of Calgary, Alberta, who had to bow out of bluebirding for she says, she's settling in Europe for her old age. She signs herself, "Your unfaithful bluebirder." No so, Grace, you left your trail in the good care of **Mrs. W. Dowle**, so enjoy your memories. Reaching to the Yukon Territory, **Janice Houtz** writes, "We spotted a bluebird family in Burwash about June 16, '87..." and she sent snapshots showing the nest boxes mounted on the house, and one with the beautiful male Mountain Bluebird perched on the fence post.

After the NABS Eighth Annual Meeting in Red Deer, Alberta (1985) inspired them to help the Western Bluebird, **Warren** and **Shirley Engstrom** of Moraga, CA, wrote in the spring of '87..."Through the cooperation and help of the local water district we were given permission to establish a bluebird trail on their watershed land. In February of this year, with the assistance of a local Scout Troop, we have placed 13 for immediate occupancy. We plan to have more by next season." **Helmut Outram**, of Littleton, CO, describes his prodigious efforts in putting out the nest boxes on his trail. He enclosed a snapshot showing his jeep stocked with 80 boxes and three sacks of fertilizer. "The Lake City Chamber of Commerce is solidly behind the bluebird trail, which helps grease all sorts of

wheels." Helmut, I know you haven't been dormant!

As I reported in the Autumn 1987 *Sialia*, Montana bluebirds come in three kinds—you can guess what they are. Now, **Andy Harlan**, the "Bluebird Man" from Trout Creek, MT, reports fledging 402 Mountain and Western Bluebirds from 384 boxes! Do you feel challenged to attract an Eastern, Andy? **Dorothy Gessart**, of Brodhead, WI, observed a bluebird pair she's sure built four "dummy" nests and took three months to finally produce three young. She wonders if this was unusual: bluebirds building multiple nests—she knows House Wrens "do it all the time." **Ann Guenther**, a 4-H leader of Wautun, MN, thanked us for sending NABS information. "We were getting ready for the county fair. We copied the bird house plans and info to give away and spread the word on bluebirds. The display went over great—won Grand Champion." A heartening note from **Dan McGuckin** of Valparaiso, IN, says, "Thank you for helping the bluebird. My friend has been in NABS for seven years; I've for three. We are yet to see a good increase in bluebirds, but hope this is the year. I saw a pair on March 8th, which is one month earlier than usual. I'm 16 and in H.S. and as you can guess my friends tease me a lot, but I know it's worth it when I see that beautiful flash of blue." Cub Scouts were heard from also, when **Marie Liebner**, leader of St. Ambrose Pack #632, used NABS information and reported that their interest carried them far beyond the troop's activities. "Five of the families have successfully provided homes for bluebirds in their own backyards. My female is sitting on six eggs! The first brood hatched and fledged and almost immediately another nest was under construction. Thank you for all the helpful information that you have provided for us and, happy bluebirding!" **Mary Kay McCord**, teacher of 24 fourth graders at Ellicottville Central School in Ellicottville, NY, wrote, "We did a science project on bluebirds and assembled houses and placed them in suitable areas. I feel that it has been a most educational, meaningful experience for my students. We have taken pictures of them working on this project. I plan to work on a bluebird project each year, (because) our New York State Bird is the bluebird."

A newspaper clipping came to NABS recently telling of **Julle Junkin**, of Arnold, MD, receiving the Gold Award, highest award in Girl Scouting, for building and installing nest boxes for the bluebird trail at the Broadcreek Girl Scout camping facility in Whitehall, MD.

Helping bluebirds makes a fine project for all youth, and one new group to use the project is "Youth for Tomorrow," chaired in the Washington area by Washington Redskins Coach Joe Gibbs. Established in 1983 on a 137 acre tract of land in Prince William County, VA, this home serves boys who have had a brush with the law within a 50-mile radius of the Nation's Capital. Staff member **Rick Davis** used NABS information to get the boys involved in establishing a bluebird trail on the grounds which provide excellent bluebird habitat. Bluebirds have taken up residence and everyone at the home is enjoying the bluebird population growth. Who knows? A young boy experiencing the delightful activities of God's creatures, the bluebirds, may be inspired to live his own life in ways intended by the Creator.

The Allenwood Federal Prison Camp, Montgomery, PA, established bluebird trails in order "to provide meaningful recreation to a greater segment of the population." As reported by **Jim Youngman**, Supervisor of Education: 78 bluebirds fledged from about 20 nest boxes, and "the program appealed to a surprisingly high number of people. Approximately 100 individuals developed an interest in birdwatching and nature in general."

Lillian Files, NABS Nominating Committee chairman, made a leisurely trip back home from the 10th Annual Meeting to Tyngsboro, MA, and visited Gettysburg National Military Park where she found a delightful postcard she sent to me. It shows a male Eastern Bluebird perched on a cannon, and in print says, "As though in silent vigil this little bird of peace and freedom sits on a cannon that caused pain and death to many."

Shall the bluebird be God's instrument as we serve Him in restoring its numbers? For all the experiences of 10 years of NABS bluebirding, will you join me in praise of His Providence? From the back page of the meeting program, I quote these Stuart K. Hine words:

When through the woods and forest glades
I wander
And hear the birds sing sweetly in the trees.
When I look down from lofty mountain
grandeur
And hear the brook and feel the gentle
breeze,

Then sings my soul, my Savior God to Thee:
How great Thou art! How great Thou art!
Then sings my soul, my Savior God to Thee:
How great Thou art! How great Thou art! ■

BLUEBIRD EXPRESS

SIALIA welcomes the correspondence of its membership. Bluebird Express should become a forum for all who are interested in communicating their ideas and actions concerning bluebird conservation. We will attempt to publish a wide range of views in a responsible manner. Keep your letters coming!

NABS Members:

An active trail monitor inquired if we could print complete addresses for Bluebird Express letters to encourage correspondence. Any comments pro or con? Drop a postcard with your choice to Editor J.K. Solem, 10617 Grae Loch Rd., Laurel, MD 20707.

Dear Editor:

To prevent the entrance hole in bluebird boxes from being enlarged by animals, I fasten a thin steel washer with a 1½-inch hole around the opening. Dorman Products distributes the washer through automotive parts stores. The part number is 730-014. They sell for about ten cents each. I fasten them to the box by drilling three holes for small nails.

Harry Clark
Caro, Michigan

Dear Editor:

One Sunday morning my father got me out of bed and told me to come look. There was a bluebird on my backyard bird house. A week later we spotted the female and sure enough they had five bright blue eggs. I didn't see the young birds fly away, but I immediately cleaned out the box and the next morning there were the male and female again making another nest. After



the young birds departed on the 4th of July, I cleaned out the box and a House Wren made a nest in the box.

I also put a bird house on my aunt's farm and I can still remember her calling that afternoon and reporting there was a bluebird putting nesting material in it.

I am just writing to tell you this. I hope to get other people involved.

Larry Shriner
Fairfield, Pennsylvania

Dear Editor:

Last year one of my nesting boxes produced three normal babies and one albino. The manager of the adjoining Audubon land observed a pair of bluebirds with one white fledgling late in the summer. This spring a nesting box maintained by the manager on the Audubon land produced three albino babies and one normal blue baby. We feel all of these albinos are produced by the same pair of bluebirds. We have pictures of all nestings. Do you suppose Dr. Zeleny could shed some light on this very unusual experience?

John Wilson
Jackson, South Carolina

Dear John Wilson:

Dr. Zeleny agrees that you are probably right in feeling that the albinos were produced by the same pair of bluebirds but without having banded the birds it would be impossible to be sure. You mentioned having photographs of all the nestings. If they are

good, feel free to submit them. Three albinistic bluebirds in one brood is certainly highly unusual.

Dear Editor:

I would like to pass something along to readers. Despite health problems, I managed to build five nesting boxes and give them to friends. One individual lives in the city of Fairfax (VA) and hasn't even seen a bluebird at his home in the past 35 years. Within a day or two after putting the box in the very middle of his backyard (which isn't very large), bluebirds inspected the box thoroughly. Unfortunately, the pair lost out to a House Wren. But the mere fact that the box was even inspected should encourage people to put up nesting boxes, wherever they may live, to help our beautiful little friends continue to survive.

George N. Lumsden
Fairfax, Virginia

Dear Editor:

I have a small trail started. Now that we live in the country, I will be able to not only watch the houses already up but put up more. I've been trying to get people in the area interested and have gotten permission to put bluebird houses on their property. Before 1981, when I first got started in this project, I had never even seen a bluebird; now I'm looking forward to spring and, I hope, their return. Sure hope they remember how nice it was to live and raise a family here.

M.A. Logan
Gibbon Glade, Pennsylvania

Dear Editor:

I feed my bluebirds mealworms year-round and they never miss coming in promptly at 6:00 a.m. each morning. The adult birds come in to feed about 5:30 each evening and carry the worms and raisins off to the fledglings.

If it is possible, I would like to know more about a wholesaler where you can get mealworms in bulk. I now get them at a local pet store and they cost \$1.75 a hundred. I purchase 500 each week for my lovely birds.

I am also interested in more information on banding for next spring. Do you need to have a large trail in order to have someone do this?

Nancy M. Mays
Parkton, Maryland

Dear Nancy Mays:

We don't have a list of mealworm suppliers because at headquarters we raise our own mealworms. Had you considered that option? Elsewhere in this issue you will find an article describing the process. Because more and more bluebirders are feeding mealworms, we thought there might be many readers interested in this project. In case any readers obtain mealworms at wholesale prices and wish to communicate with Nancy, her street address is 1912 Mt. Carmel Rd., zip 22120.

In answer to your question about banding: You do not necessarily need to have a large trail in order to have young banded. Much depends on the time the bander has available and the distance he or she must travel. Obviously, a large trail may mean that several broods may be banded at the same time.

We have had a number of questions from readers asking how banders can be located and inquiring how a banding license can be obtained. The Bird Banding Laboratory at the Patuxent Wildlife Research Center in Laurel, Maryland, licenses all U.S. citizens while the Canadian Wildlife Service does so in Canada. Licenses are not issued simply for banding bluebirds on a trail. Those applying must indicate extensive knowledge of the local birds as well as banding techniques. Working with a local bander to establish credentials is essential. To locate a licensed bird bander in your area, check local bird and conservation organizations, nature centers, or biology departments at colleges and universities. ■

(Presidential Points-continued from page 2)

The walk up the beaver dams was accompanied by chickadees. A great Blue Heron was sighted flying over one of the beaver ponds. A Pileated Woodpecker had been hard at work on the dead beeches, as several of his large rectangular cavities were found. We were especially rewarded with the discovery of *Lycopodium tristachyum*. This small plant is only found at high elevations and is unusual for our area.

Thirty-three bluebirds were fledged at Oquaga Park this year and we were all pleased with the people we reached with the trail. I did several programs for campers during the summer which were well-received. Personnel of both Camp Brace and Oquaga became interested and placed boxes at their homes. Neighbors asked for the NABS brochure so they could build boxes to help the bluebird and many people came to the park just to see a bluebird again. We often heard the comment "I haven't seen a bluebird since I was a child."

Plans are underway to enlarge the

trail for the next nesting season and all of us are optimistic that next year will be even more productive than this year. ■



Photograph by Rick Dunbar.

Examining a bluebird box at Oquaga Creek State Park, NY, are (left to right) Nick Castelli, two Camp Brace residents, Herb Fitzgerald, and President Sadie Dorber. Nick and Herb are both Youth Division Aides.



Photograph by Myrna O. Pearman

NABS Founder Lawrence Zeleny, center, is honored with a Congressional Certificate of Appreciation and a county proclamation presented by Steny H. Hoyer, U.S. Congressman, 5th District, Maryland (left), and County Executive Parris Glendening, Prince George's County, Maryland.

My Little Bird

My word! Haven't you heard!?
I've a little bird
Living contentedly
In the cage of my heart.
We're never far apart.
Every evening; before I go to sleep
I set it free
So that it may fly through the night of my dreams.
Each morning
With a tender "cheep"
It returns to me
Bringing back reality (or so it seems).
There's no surrender to its gender
It's neither he nor she.
Neutral! That's the best way for it to be.
What kind of bird is it?
I don't know!
No; it isn't a wren
Robin or phalarope.
What do I call my little bird?
A very simple word.
Its name is—HOPE.

Paul Morgan

NORTH AMERICAN BLUEBIRD SOCIETY, INC.
STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS
NOVEMBER 1, 1986 THROUGH OCTOBER 31, 1987

| | | |
|--|-------------|------------|
| Cash Balance - November 1, 1986 | | \$ 399.47 |
| Add: | | |
| Cash Received | | |
| Sale of <i>Sialia</i> Magazine | \$28,607.00 | |
| Sale of boxes, books, stationery, etc. | 69,921.73 | |
| Contributions | 27,251.35 | |
| Membership Dues | 24,437.01 | |
| Sales Tax Collected | 387.35 | |
| Annual Meeting | 15,789.38 | 166,393.82 |
| | | 166,793.27 |
| Less: | | |
| Cash Disbursements | | |
| <i>Sialia</i> Magazine | \$25,474.07 | |
| Boxes, books, stationery, etc. | 64,555.85 | |
| Educational material | 3,746.80 | |
| Membership fulfillment | 15,163.41 | |
| Research | 7,555.00 | |
| Salaries | 5,691.50 | |
| Expense accounts | 15,553.96 | |
| Office supplies | 735.95 | |
| Bank charges | 136.41 | |
| Investments—Dean Witter Reynolds | 11,000.00 | |
| Annual meeting | 15,312.36 | |
| Maryland sales tax remitted | 367.70 | |
| Cash Balance - October 31, 1987 | | 1,500.28 |
| Assets | | |
| Checking account (Citizens Bank & Trust) (10/31/87) | 1,500.28 | |
| Savings account (Citizens Bank & Trust) (9/30/87) | 951.34 | |
| Savings account (Maryland National Bank) (9/08/87) | 1,547.06 | |
| Value of inventory | 23,118.54 | |
| Investments—Dean Witter Reynolds (10/30/87) 1,169.201 shares @ 9 27 | 10,838.49 | |
| Net Worth | | 37,955.71 |

Respectfully submitted,

Delos C. Dupree

Delos C. Dupree, Treasurer NABS

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Founded in 1978, THE NORTH AMERICAN BLUEBIRD SOCIETY is an incorporated non-profit organization determined to increase the populations of the three species of bluebirds on this continent. Inasmuch as the populations of these birds have diminished due to the maladroit actions of human beings, as well as other natural disasters, the primary objective of the SOCIETY is to educate all who will listen about the importance of preserving these singular creatures in their native environment.

Toward this end, the SOCIETY will work, within the bounds of effective conservation, to study those obstacles impeding bluebird recovery; to publish results of those studies; to promote ideas and actions which might reduce the effect of those obstacles; and to obtain a more complete knowledge about bluebird ecology, in the hope of learning more about the ecology of humankind.

Membership: Student (under 21) and Senior (over 60), \$7.50; Regular, \$15; Sustaining, \$30; Supporting, \$50; Contributing, \$100; Corporate, \$100; Donor, \$250. Add \$2 per year for Canada and Mexico and \$3 per year for other countries (surface mail). U.S. funds only, please. Amounts over \$6 are tax deductible.

Address:
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Box 6295
Silver Spring, MD 20906-0295

