

Sialia

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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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The Quarterly Journal
About Bluebirds

Volume 9, Number 4
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EDITOR
Joanne K. Solem
**CONTRIBUTING
EDITOR**
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ART EDITOR
Alexia J. Scott

COVER

Art Editor Alexia J. Scott has chosen a Western Bluebird for the cover. Several articles in this issue spotlight the species.

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 Graeloch Road, Laurel, Maryland 20707.

Presidential Points

Sadie Dorber

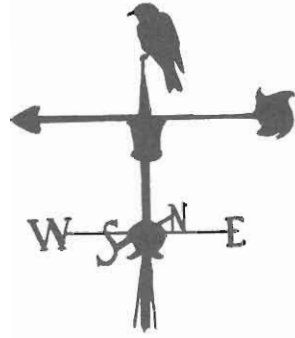
I still remember the comment made by President Anne Sturm several years ago at a NABS annual meeting. Anne reminded the audience that vent pipes were death traps for bluebirds and all devices of this type should have screen placed around them to prevent the bluebirds from gaining entry. Anne's plea was brought back vividly to me a few weeks ago when my son brought me a dead male bluebird that had just been found in his neighbor's wood stove. The neighbors had installed the stove just three days before and while examining the stove, opened the door and found the bird. A vent pipe resembles a cavity to a bluebird; after the bird enters the pipe it is unable to escape.

In 1972, Jack Finch of Bailey, NC, launched a campaign to educate the public about the uncovered vents on tobacco curing barns. When Jack questioned tobacco farmers who were using burners, he learned that an average of 20 bluebirds would sometimes be found in each barn. During the spring when bluebirds are searching for a nesting site, the burners are not being used. This leaves a death trap for the birds. Jack also reported that after 1955 few dead bluebirds were found by tobacco farmers, but by then very few bluebirds were left.

The problem with the tobacco curing barns also coincided with the loss of other natural cavities. Old orchards started disappearing along with wooden fence posts. Over the years the European Starling and House Sparrow have gained more of a foothold on what few remaining natural cavities are left. All of these factors combined have had a serious effect on bluebirds.

This particular type of tobacco curing is now becoming obsolete, but a variety of hazards for the bluebird are still present today.

During late winter and early spring, bluebirds will explore virtually everything that resembles a cavity. I



have observed Tree Swallows also doing the same thing.

Larry Zeleny reported that several boxes he has placed on a high fence had been used successfully by bluebirds for years. Last year and again this year, there were no birds of any kind in the boxes. Several tall open-end pipes had been installed near the boxes as supports for a backstop on the baseball diamond. Last fall when the pipes were taken down for painting the remains of a considerable number of bluebirds were found.

Wood burning stoves are still being installed in large numbers and the old dead trees containing cavities will continue to be harvested to provide the fuel for the stoves. In order to increase the bluebird population, all of us must work to eliminate the pipes and vents that claim so many lives during the year. While you're driving around your trail, check for stove pipes and fences supported by pipes that are large enough to permit the entrance of cavity nesters. If the situation is explained to the owners, I would hope that most people would cooperate and have the problem eliminated. Caps for stove vents are available that are bird proof and pipes can easily be capped.

I encourage you to talk to the news media about this serious problem so that more people can be made aware of the situation. NABS headquarters has a press release available about this topic and we would be happy to provide you with a copy. ■

Nest Boxes and Western Bluebirds in Arizona's Pine Forests

Jeffrey D. Brawn

INTRODUCTION

Population densities of secondary (i.e. non-excavating) cavity nesting birds can be controlled or "limited" by availability of nest sites. Nest site limitation often seems obvious, and in areas where forest habitat is immature or absent and snags with nest holes are scarce, nest boxes can locally increase numbers of breeding pairs. Articles on nest boxes in most issues of *Sialia* generally support the notion that numbers of nest sites influence numbers of secondary cavity nesters.

Nevertheless, limitation of populations by nest sites should not be assumed without caution. Species that do not migrate may experience their most severe "crunch period" during the winter and nest sites might have little effect on breeding densities. Further, within non-migratory species, the importance of nest site availability may vary with feeding conditions or other habitat requirements not directly associated with nest sites. As any experienced birder knows, "good habitat" is determined by many factors that vary in importance among and within species.

Another uncertainty, specific to nest box studies, is the *real* effect of added nest sites on population densities. Consider, for example, a situation where boxes have been installed in a linear, "bluebird trail" arrangement. Breeding birds in the immediate vicinity of boxes with active nests will appear numerous. Yet, breeding densities (formally defined as # of breeding pairs/unit area) may not be all that high if the *total area* used by the breeding pairs is taken into consideration. Boxes could simply concentrate nest sites of breeding pairs and have surprisingly little effect on overall numbers, an especially valid possibility for species that maintain breeding territories (e.g. Gauthier

and Smith 1987).

These concerns in no way diminish the value of nest boxes for studying cavity nesters or the simple enjoyment of having readily observable nests. They are, however, of interest to avian ecologists who study the nature of bird population dynamics or to personnel in natural resource agencies who require data when evaluating policy options for wildlife management/conservation. Interest in nest boxes for non-game wildlife in North America is increasing; however, many available data are restricted in scope. Therefore, in 1979, I initiated a study of the population/ breeding biology of secondary cavity nesters in the ponderosa pine forests of northern Arizona (my collaborator on this project was Dr. Russell P. Balda). No large scale nest box studies have been previously conducted in ponderosa pine forests, the most widespread coniferous forest-type in North America. One study objective was to assess the influence of nest site availability on populations of six species that breed in northern Arizona; thus, I conducted a controlled experiment using nest boxes and gathered data through the 1984 breeding season.

Presented here is an introduction to how I conducted my study, and data on Western Bluebirds (*Sialia mexicana*) that specifically demonstrate the relationship between use of nest boxes and changes in breeding densities. Other aspects of Western Bluebird population biology and data on the other species I studied in northern Arizona are considered elsewhere (Brawn 1985, Brawn and Balda MS).

METHODS

I used German-made boxes that were constructed from concrete and

wood chips. This type of box has been used successfully in Europe and is more durable than most designs of wood boxes (the concrete-wood boxes are pictured and discussed in Dahlsten and Copper 1979). I installed 60 boxes on each of three "treatment" plots. Each treatment plot was about 20 acres and roughly square. The boxes were distributed evenly throughout the plots (using a grid-system) and placed 10 to 35 ft [3.05-10.67m] high facing all directions except northwest. I used two entrance-hole diameters: 1½ in. [36 mm] and 1¼ in. [32 mm] (30 of each installed/plot). These diameters were judged suitable for all potential occupants of the boxes except raptors.

The treatment plots were located about 20 miles [32 km] south of Flagstaff in habitat where ponderosa pine (*Pinus ponderosa*) dominate. These plots had different habitat structures, however, because of varying levels of past silvicultural (i.e. timber harvesting) activity. Accordingly, the three plots are called "Open," "Thinned," and "Dense." The Open-treatment plot had been severely cut-over and, therefore, had relatively few live or dead trees. The Dense-treatment was uncut and had numerous snags and live pines, and the Thinned-treatment was intermediate. By placing boxes across this spectrum of habitat types, I could assess the relative importance of nest site limitation and habitat structure on secondary cavity nester breeding densities.

To appraise the effect of nest boxes on breeding densities, I had to census birds and have some sort of control for the nest box experiment. I used the "Spot-Map" method to census birds, a technique that involves visiting and methodically traversing a plot several times/ breeding season. These census visits began before dawn and involved mapping all visual and auditory "contacts" with birds. After observance of certain accepted conventions, data from the census visits yielded density estimates (presented here as the # breeding pairs/100 acres [40 ha]). For controls, I censused birds from 1980-1984 on two plots without

nest boxes. Habitat structure on these plots was similar to that on the Open and Thinned-treatment plots. No suitable control for the Dense-treatment plot was available. The control plots were located 2-3 miles [3.2-4.9 km] from their respective treatment plots. More detailed description of my study plots and the nest box experiment can be found in Brawn and Balda (1983).

RESULTS and DISCUSSION

Of the species breeding on the treatment plots, Western Bluebirds were the most frequent box occupant (the other cavity nesters in this study were as follows: Violet-green Swallows (*Tachycineta thalassina*), Mountain Chickadees (*Parus gambeli*), White-breasted Nuthatches (*Sitta carolinensis*), Pygmy Nuthatches (*S. pygmaea*), and House Wrens (*Troglodytes aedon*)). All species used boxes infrequently on the Dense-treatment plot, where their populations were not obviously affected by the increased number of nest sites. Therefore, I present results from only the Open and Thinned-treatment plots (see Brawn 1985 for a technical discussion of why boxes were not used on the Dense plot).

Use of nest boxes by bluebirds was low in 1980 but increased substantially thereafter (Table 1). By the 1984 breeding season, bluebirds occupied about half of the boxes with the larger (1½ in.) [36 mm] entrance holes. In 1982 and 1983, bluebirds used more boxes on the Open-treatment plot, but in other years box occupancy was similar on the plots. I considered a box to be "occupied" only if it contained a nest with eggs. Bluebirds usually nested solely in boxes on the treatment plots; that is, natural nest sites were largely "ignored" after boxes were installed. Therefore, the numbers listed in Table 1 generally reflect total numbers of bluebird nests found on the plots from 1980-1984.

Densities of breeding bluebirds also increased substantially on the treatment plots. Specifically, during the five years of observation, bluebird

Table 1. Numbers of nest boxes used by Western Bluebirds and their breeding densities on treatment and control plots in northern Arizona.

Year	Number of boxes with nests Plot			Breeding densities (Pairs / 100 acres) Plot			
	Open Treatment	Thinned Treatment	Open Treatment	Open Control	Thinned Treatment	Thinned Control	
1980	3	3	11.0	15.0	10.0	8.8	
1981	10	11	24.0	20.0	27.5	11.3	
1982	15	9	39.0	18.8	37.0	20.0	
1983	16	9	65.0	21.0	50.0	16.3	
1984	14	15	65.0	...*	70.0	15.0	

* The Open-control plot was not censused in 1984.

densities increased 500% and 500% on the Open and Thinned-treatment plots, respectively. These rates of increase between years loosely agreed with changes in the proportion of boxes occupied. This relationship was clear between 1980 and 1981 when numbers of boxes with nests and breeding densities increased sharply on both treatment plots. In later years, changes in box occupancy and breeding densities were not always concordant. For example, on the Thinned-treatment plot between 1982 and 1983, the number of boxes with bluebird nests did not change but breeding densities increased about 35%. This lack of agreement stemmed from cases where bluebirds nested in boxes near the edges of the treatment plots and thus only a fraction of their territories were included when calculating densities.

Data from the control plots supported the notion that use of boxes underlay density changes on the treatment plots. Densities did vary on the control plots but did not increase substantially as on the treatment plots (Table 1). Annual variation in densities on the control likely reflects changes in environmental conditions for breeding apart from nest sites (e.g. climatic conditions during the spring).

Results presented here confirm that nest boxes can increase breeding densities of Western Bluebirds if natural nest sites are in short supply. In northern Arizona much land is public-owned and unavailable for commercial development; however, fuelwood collection by the public and silvicultural practices that maintain large tracts of young forest habitat without snags can promote shortages of natural nest sites. These land-use practices may become more commonplace, and nest boxes might eventually play an important, but not exhaustive (see Brawn and Balda 1983), role in conservation of secondary cavity nester populations in northern Arizona. Data on nest boxes and population densities from ponderosa pine forests in other locations and from other habitats are still needed. ■

ACKNOWLEDGMENTS

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Six Volt Circuit Monitors Bluebirds' Winter Roosting

Morris M. Green, Jr.

During the winter of 1986-87 we had in our backyard, 40 yards [36.56 m] from our house, an unusual bluebird nesting box. If, late on a winter afternoon, one or more bluebirds entered that box to roost for the night, an electric bell immediately started ringing *inside our residence!*

My interest in the winter roosting of bluebirds started when I received my March 1986 issue of *Nature Society News*. My appetite for more information on that subject was whetted by two items on page 12 of that magazine. First, Ralph Bell, of southwestern Pennsylvania, in his regular bluebird column, discussed his discovery of 12 bluebirds all sleeping together in a single nest box on a cold night in March 1971. On the same page was a letter from Laurance Sawyer, of Ringgold, Georgia, describing his discovery in January 1986 of 17 bluebirds all crowded together in one box on a cold night (3°F) [16°C] at his home in northwestern Georgia.

I wondered whether any of the bluebirds we frequently saw near our residence in winter ever roosted in our nest boxes. I assumed that, if they did, they would not enter the box until just before dark so as to avoid detection by humans or predators. Semi-darkness would make it difficult for me to monitor their roosting activities.

In early December 1986 my strong interest in this subject propelled me to attempt to develop an automatic alarm which would alert me instantly if any bluebird roosted in the nest box described above.

Stated briefly, I started with a *side-opening* nest box and added a false floor above the permanent floor with about one inch [2.54 cm] of space between them. By using two wood screws as pivots, I made a hinge for one side of the false floor. Then I screwed a cup hook into the top of the

opposite side of the false floor.

Next I drilled a small hole through the roof of the nest box directly above the cup hook, brought an 18 gauge wire through that hole, and fastened a light rubber band to the lower end of that wire. Then I hooked the lower end of the rubber band over the cup hook. As a result, the false floor *bobbed up and down* on the lower end of the rubber band.

Before I installed the false floor, I fastened on its underside a piece of 24 gauge copper sheeting, holding it in place with two brass wood screws. To one of those screws, near the floor's hinge, I attached a length of *insulated* solid copper "bell wire" (18 gauge) and ran it to the outside through a small hole drilled through the side of the nest box.

I screwed another brass wood screw through the side of the nest box so that it protruded inside directly under the bobbing end of the false floor so that the edge of the copper sheeting rested directly on that screw when the false floor was in a *fully depressed* position. I also fastened a length of insulated bell wire under the head of that same wood screw on the outside of the box.

If the weight of a roosting bluebird was sufficient to *fully depress* the false floor against the pull of the rubber band, the floor would serve as an automatic "pressure switch" which could be used to close a low voltage electric circuit and ring a bell in our house.

I had originally planned to run two lengths of bell wire from the nest box to our residence. However, a kind clerk in a hardware store suggested that I should first try using a length of ordinary "outdoor" electric extension cord (usually colored orange) commonly used to power electric hedge shears

and lawn mowers.

At the same store I bought what electricians call a "duplex receptacle," the common electric outlet seen on the walls of most rooms of modern houses. When I returned home, I attached the two insulated wires coming from the nest box to the terminals of that receptacle. Then I plugged the male end of our 100 foot [30.46 m] extension cord into the receptacle. At the other end of that cord I attached a new 50 foot [15.23 m] extension cord I had just purchased. The two pieces together enabled me to run the combined cords the 40 yards [36.56 m] to our house.

The frames holding the storm windows in our house each have two "weep holes" in the bottom to allow drainage of any water that collects inside the frame. I ran a length of insulated bell wire through each weep hole of one of our windows. Then I ran the wires under the lower sash of the double-hung windows inside the storm windows.

Next I attached the outside ends of those two wires to the terminals of an ordinary electric plug which I had purchased at a hardware store. It was an easy matter to insert that plug into the house end of the orange extension cord.

Then I built a device which I call my "control board." On one end of a wooden board that was $\frac{3}{4}$ in. [1.9 cm] x $7\frac{1}{4}$ in. [18.4 cm] x 17 in. [43.18 cm], I built a small box to contain a 6 volt dry cell battery. To the same board I attached a 6 volt electric bell and a small "knife switch." Close to the bell I installed an insulated "binding post," and from its lower end ran a short length of insulated bell wire (18 gauge) to one of the terminals of the bell. Next I ran bell wire from the other terminal of the bell to one terminal of the knife switch. From the other terminal of the switch I ran bell wire to one of the battery's terminals.

One of the wires brought in through the window was attached to the other battery terminal. The second wire was attached to the upper end of the binding post.

Now I had a complete 6 volt direct

current circuit. I went outside and placed a large stone on the floor of the nest box to close the pressure switch. When I returned to our house I closed the knife switch and the bell rang "loud and clear!"

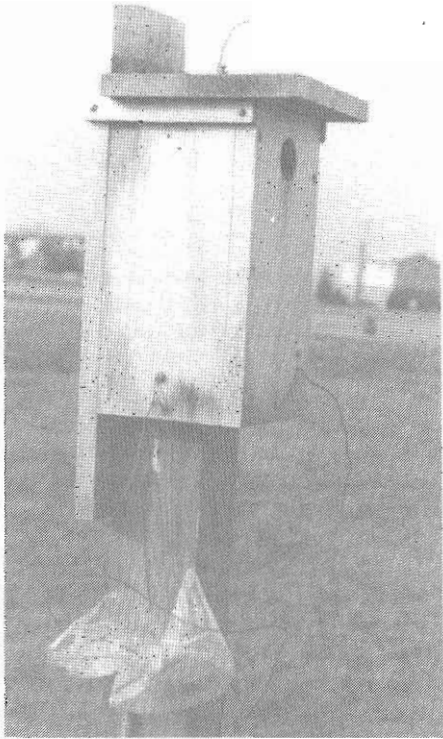
The major question at that point was whether a bluebird's weight would be sufficient to close the pressure switch against the upward pull of the rubber band. Our first real test came, by chance, in the middle of the day. When I happened to glance out a window, I noticed two bluebirds perched on the nest box. I quickly closed the knife switch and picked up my binoculars. One bird entered the box, and one or two seconds later the bell started to ring. My wife Rose looked at me and said, half jokingly and half seriously, "Why don't you invent something that will make us some money?"

My search for materials to build this electric monitor led me to four types of suppliers:

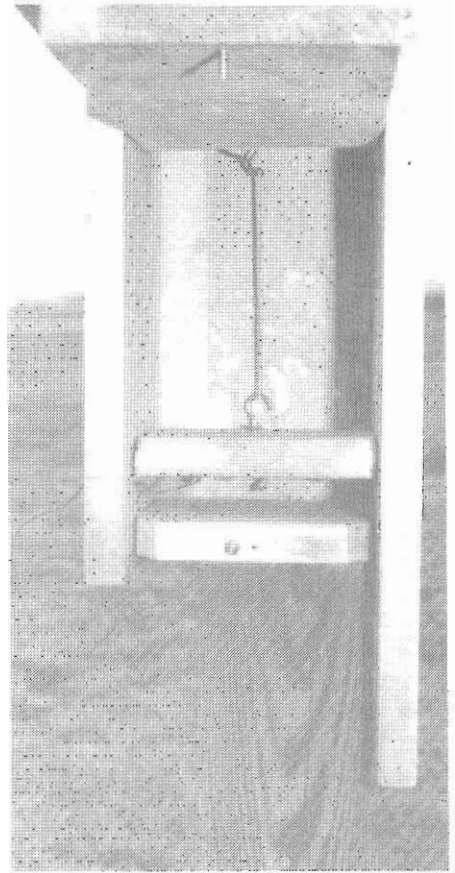
- 1) Electrical supply stores that cater to electrical contractors;
- 2) Hardware stores;
- 3) Electronics stores, for insulated binding posts;
- 4) Stationery stores, for rubber bands of suitable length and elasticity.

Before I built this monitor, I had assumed that bluebirds only roosted in nest boxes on extremely cold or stormy nights. I also assumed that they would not enter a box until just before dark in order to escape detection from predators or humans. The monitor quickly proved my assumptions wrong. I found that they used the box almost every night during the first part of the winter, regardless of weather conditions, and that they entered the box for the night well before sunset.

I started using this monitor in mid-December 1986. My diary shows that, on 12 December 1986, I awoke from a nap at 3:55 p.m. When I closed the knife switch, the bell rang which indicated that one or more bluebirds were on the floor of the box. The next day I observed, through my binoculars, a bluebird enter the box at 3:45 p.m. and ring the bell. At those times on both days,
(text continued on page 131)

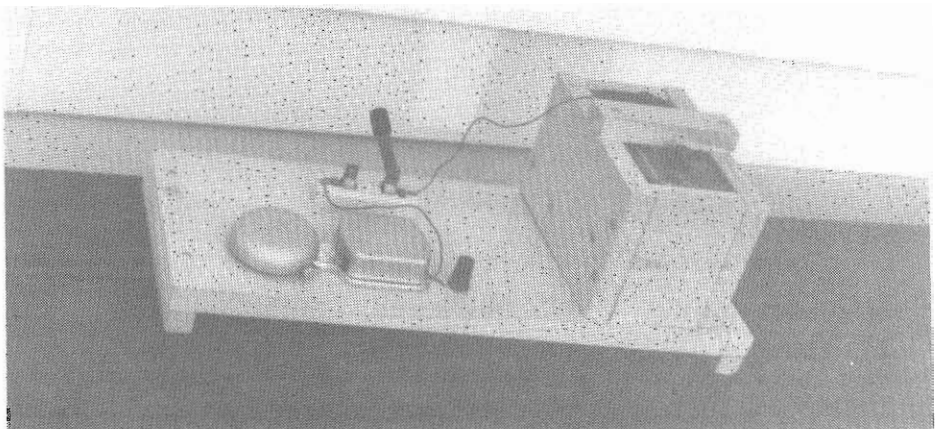


Exterior view of nest box and two wires connecting pressure switch to duplex receptable which is covered with plastic to protect it from rain and snow. Wire at top of box supports rubber band. Both ventilation slots on this box have been covered to reduce the amount of blowing snow entering the box during snowstorms accompanied by high winds.



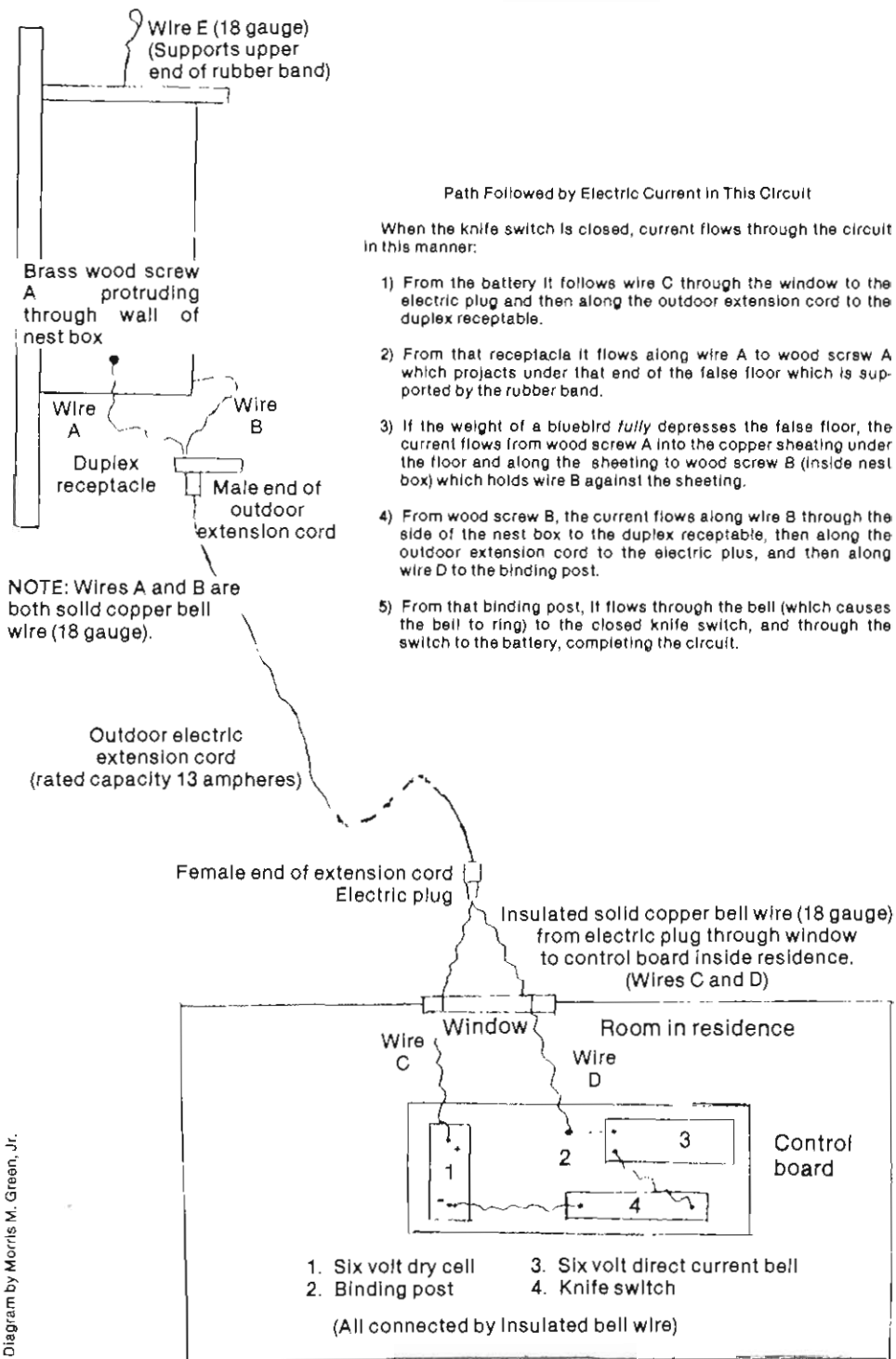
All photographs by Morris M. Grean, Jr.

False floor supported on far end by rubber band. When fully depressed, floor rests on brass wood screw under it.



Control board. Bell and binding post in foreground. Knife switch, in open position, in background. Six volt dry cell at right. (Photo taken out-of-doors.)

Diagram of Six Volt Circuit to Monitor Roosting Bluebirds



Path Followed by Electric Current in This Circuit

When the knife switch is closed, current flows through the circuit in this manner:

- 1) From the battery it follows wire C through the window to the electric plug and then along the outdoor extension cord to the duplex receptacle.
- 2) From that receptacle it flows along wire A to wood screw A which projects under that end of the false floor which is supported by the rubber band.
- 3) If the weight of a bluebird fully depresses the false floor, the current flows from wood screw A into the copper sheathing under the floor and along the sheathing to wood screw B (inside nest box) which holds wire B against the sheathing.
- 4) From wood screw B, the current flows along wire B through the side of the nest box to the duplex receptacle, then along the outdoor extension cord to the electric plug, and then along wire D to the binding post.
- 5) From that binding post, it flows through the bell (which causes the bell to ring) to the closed knife switch, and through the switch to the battery, completing the circuit.

the sun was still well above the skyline of the Catoctin Mountains to the west of us.

My diary shows that *every night*, except 31 January and 2 February, two to four bluebirds slept in the nest box from 12 December to the last week of February. In late January, two of the bluebirds disappeared and just one pair roosted in the box from then to mid-February.

On many days I arose early enough to observe the birds leaving the box in the morning. In mid-December they often entered the box at approximately 4:00 p.m. and came out the next morning at about 7:00 a.m. This meant they were in the box for a continuous period of 15 hours!

Each morning, soon after the birds emerged from the box, they flew directly to our bluebird feeder and spent a considerable amount of time inside, presumably eating "Miracle Meal" (*Sialia* 6(4):135).

Although we never had the large numbers of roosting bluebirds observed by Bell and Sawyer, this monitor greatly increased my knowledge of the roosting habits of bluebirds in our area in central Maryland.

On many afternoons, the bell's ringing told me that bluebirds had just entered the nest box but, by the time I grabbed my binoculars, the birds were already in the box and out of sight. When I opened the box the following day and found droppings on the floor, those served as confirmation that the birds had remained in the box all night. Every day I cleaned out the box so the birds would have a clean floor to sleep on the following night.

In regard to the pressure switch, if a *very sensitive* steel spring could be obtained, it might prove to be superior to a rubber band for holding the false floor in the up position until depressed by the weight of a bluebird. A major problem for me was finding rubber bands of just the right strength and elasticity. They must be strong enough to hold the false floor up and the switch "open" during the day, but they must also be weak enough to allow the floor to drop fully so the switch closes

when a single bird drops down on the floor. I found rubber bands deteriorated rather quickly in temperatures well below freezing and had to be replaced periodically.

To conserve my dry cell battery, I always opened the knife switch on my control board after the ringing of the bell informed me that one or more bluebirds had entered the box. If that is done, one dry cell will last a surprisingly long time.

Readers who are more knowledgeable about electricity and electronics than I am may be able to improve this monitor by

- 1) Replacing the dry cell battery with a "bell transformer" that will step down 120 volt house current to low voltage *alternating* current;
- 2) Replacing the dry cell battery with a "power supply" or an AC/DC adapter, either of which will step down 120 volt house current to low voltage *direct* current;
- 3) Replacing the copper sheeting and brass screws under the false floor with either a magnetic switch or a photoelectric cell of the type used in home burglar alarm systems;
- 4) Hooking up a low ampere pilot light in parallel with the electric bell. If an on-off switch was also installed in the line to the electric bell, then the ringing of the bell could be stopped after the initial alert, but the pilot light would continue to burn as long as the knife switch was closed and one or more bluebirds remained on the floor of the box.

Some of *Sialia's* readers may want to build a monitor like this for themselves. Patience is needed in the construction of the pressure switch in the nest box. Each day I adjusted the height of the rubber band so there was a gap of only about 1/8 inch [.32 cm] between the underside of the copper sheeting and the brass screw it will touch when a roosting bluebird enters the box and settles down "for a long winter's nap."

For me the experiment was a fascinating one and very rewarding in

terms of increasing my knowledge of bluebirds. I hope some of *Sialia's* readers will be able to duplicate my success and perhaps make improvements in my design.

Next winter I intend to try to reduce the amount of blowing snow that can enter a bluebird roosting box during a severe snowstorm. Even if a well-stocked bluebird feeder is available, I think bluebirds are in their greatest peril when a winter storm approaches semi-bizzard conditions: very low temperatures, fine snow particles and high winds. Under those conditions, I am always surprised by how much snow can blow through a small opening during a 12 hour storm. (That is why I believe bluebird winter feeders should have entrances at *only one end* and the end with the entrance should face away

from prevailing winter winds.)

Next winter I also hope to determine how early in the autumn bluebirds normally start roosting in nest boxes. ■

8407 E. Lassie Court
Walkersville, MD 21793

Mr. Green made extensive temperature observations during the winter of 1986-1987. In general they supported the assumption that bluebirds use roosting boxes most regularly on the coldest nights or during storms; however, he also found that bluebirds roosted often when temperatures were above 32° F [0° C]. We hope he will continue his observations during the coming winter. Mr. Green can supply addresses for parts as well as for weather measuring instruments should readers have difficulty locating items locally. Be sure to include a stamped, self-addressed envelope with any request for information or clarification.

PE's Muddy Run Programs Take National Award

Philadelphia Electric Company has been recognized nationally for the outstanding educational programs conducted at the Muddy Run Recreation Park in Lancaster County.

These programs have been selected as a winner in the 1986 Take Pride in America National Awards program which recognizes individual, public and private groups that conduct "outstanding stewardship, action or awareness efforts on behalf of federal, state, local and/or Indian lands and resources." The programs also received the 1986 Take Pride in Pennsylvania Award.

The Muddy Run Park programs selected in the Business/Corporation category were for the Eastern Bluebird Awareness Program, the Eagle Aware-

ness Program Along the Lower Susquehanna River, and the Environmental Programs conducted for school and community groups throughout the year promoting awareness, education, and conservation of resources.

The Eastern Bluebird Awareness Program at the park is an ongoing one started in 1977. The program is designed to supply the public with information necessary to help the bluebird in its struggle for survival. This is accomplished through guided walks along Muddy Run's 75 box nesting trail, slide programs, and workshops. Literature and box construction plans are distributed, schools and civic organizations receive programs, and staff members work with the North American Bluebird Society. ■

(FEEDER—continued from page 145)

especially, are constant visitors to shallow bird baths both in winter and in summer. They will remain throughout the winter if feeders

are established for their use since they are year-round residents. ■

3350 NW Tanager Drive
Corvallis, OR 97330

Observations from a "Bluebird Field" in Western Oregon

Robert L. Altman and Elsie K. Eitzroth

The population decline of both Eastern (*Sialia sialis*) and Western (*S. mexicana*) Bluebirds has been well documented. A positive human response to this decline has been the initiation of nest box trails. One such effort around Corvallis, Oregon, began in 1976. The success has been encouraging (Eitzroth 1983) but not extraordinary; however, the following observations are from a very productive "bluebird field" along that trail.

The nest boxes are located on the Noble Lone Star Ranch, three miles west of Philomath, Oregon, at an elevation of 550 feet [168 m]. The 30 acre [12.14 ha] field is comprised mostly of scattered sweetbrier (*Rosa eglantheria*) and barley (*Hordeum* sp.) and has been grazed or ungrazed pasture. Two boxes were put up in 1980, and from 1981 through 1983 bluebirds used one of the boxes fledging five broods successfully. Two boxes were added in 1984, so currently there are four boxes on three bluebird territories (one box is used by swallows) spaced approximately 300 [91.44 m] and 600 feet [182.88 m] apart. Since 1984 each of the three territories has produced two and sometimes three clutches a year, except when the female died which has occurred once at each box. During the breeding season this is literally a "field of bluebirds" with constant nesting activity.

One of the most interesting and enjoyable observations has been the behavior of one color-banded male. His intense territorial defense and prowess in successfully raising young has been remarkable. He was banded as a nestling in July 1983, about five miles [8.05 km] from Nobles. His first mate at Nobles in 1984 was found dead in the box when the three nestlings were five days old, but he raised them alone to fledging. In 1985 he bonded with another female and they successfully reared two broods and fledged 11

young that year. This pair returned in 1986 and had a banner year as they raised three broods and fledged 17 young. The first clutch of seven eggs was followed by a second of eight eggs although the third had only five eggs. All 20 eggs were fertile and hatched, but one nestling died and two were fostered into other nests.

Even more notable was the ferocious manner in which this bluebird defended his territory. Anytime we approached the box he would immediately fly toward us snapping and scolding. He would also hover several feet above our heads and then repeatedly attack us by "dive bombing." The more common bluebird behavior to our approach at other sites was to fly a short distance away and watch quietly. Other birds, particularly Violet-green Swallows (*Tachycineta thalassina*), were also subject to his attacks. Despite this male's stalwart territorial defense, in 1986 he allowed another adult male bluebird into his territory to assist with the feeding of the second brood. Perhaps the second male was recognized as an offspring from 1985 and thus tolerated to assist with the large brood. It may also be possible that this male had recently lost his mate and young.

An opportunity for comparison of nest box density and bluebird success existed nearby and revealed some interesting results. In 1980 three nest boxes were put up in a similar field of 15 acres [6.07 ha] on Nobles ranch about three-quarters of a mile [1.2 km] away. A single bluebird pair nested unsuccessfully that year, but successfully two of the following three years. As additional boxes were put up (totaling 11 by 1983), Violet-green and Tree Swallows (*T. bicolor*) invaded the area. By 1984 and 1985 no bluebirds nested in this field. Spreading the boxes out in 1986

(Continued on page 136)

Literature Review

T. David Pitts

Peterson, B., and G. Gauthier. 1985. Nest site use by cavity-nesting birds of the Cariboo Parkland, British Columbia. *Wilson Bulletin* 97:319-331.—This study describes the nest sites of 6 cavity nesting species, including Mountain Bluebirds, and compares these data with earlier studies to determine if the introduction of European Starlings has influenced the types of cavities used by native birds. While there was some overlap in characteristics of cavities used by different species, most species used cavities that differed in volume. Since the invasion of European Starlings, two of the native cavity nesters, Tree Swallows and Mountain Bluebirds, use smaller cavities and cavities with smaller entrances. Mountain Bluebirds also now use deeper cavities. The authors question whether the apparent change in cavity preference is due to increased competition from starlings or simply reflects the availability of cavities; it is possible that more smaller, but deeper, cavities are now available.

Den, S.E. 1985. Pesticide contamination and eggshell characteristics for Mountain Bluebirds in Colorado. *North American Bird Bander* 10:119-121.—One egg was collected from each of 15 clutches laid in nest boxes in northern Colorado. The contents of all eggs were combined into one sample for analysis. DDE was the only organochlorine present in sufficient quantity to measure. Traces of two other pesticides were detected. Since all of the eggs were pooled for analysis it is not known if DDE was present in each egg. If all of the DDE came from one egg, the concentration would have been no more than 0.23 parts per million. This is far below the level of 10 ppm which the author states is the amount probably required to affect reproduction. The conclusion is that this population is apparently not affected by organochlorine pesticides.

Pitts, T. David. 1986. Active Eastern Bluebird nest usurped by second pair of bluebirds. *North American Bird Bander* 11:134-135.—After nesting successfully in one nest box, a pair of color banded bluebirds moved to a nearby nest box. After the nest was completed and two eggs were laid at the new site, a second pair of bluebirds took over the nest box, constructed a nest on top of the original eggs, and laid a new clutch. The first pair returned to its original nest site where the female laid a single egg in an almost empty nest box. The egg was not incubated; instead, the female constructed a new nest over the egg and laid a new clutch.

Belser, C.G. 1981. Seasonal ethograms of the Eastern Bluebird, *Sialia sialis*, near Clemson, South Carolina. Master of Science thesis, Clemson Univ., 66 pages.—An ethogram is a description of the known behaviors of a species. Daytime behaviors of Eastern Bluebirds were divided into 8 categories: rest, locomotion, feeding, preening, vocalization, care of young, courtship, and aggression. Males spent 61-76% of their time resting. Resting birds were perched and may have been searching for prey or simply loafing or sleeping. Females spent a similar amount of time resting except in the spring when they spent as much as 27% of their time incubating. Locomotion occupied the second largest amount of time, except during the reproductive season. Males spent less than 1% of their time caring for young, while females devoted 3.5-7% of their time caring for young. Males were involved in 76% of the aggressive encounters with other species. Males and females were about equally involved in aggressive encounters with other bluebirds.

Dr. Pitts welcomes reviews from members. Readers should submit material to Dr. David T. Pitts, The University of Tennessee at Martin, Martin, TN 38238-5014.

Breeding Biology of Western Bluebirds in Western Montana

Art Aylesworth

The handout material for this lecture contains results of nest box programs that started with volunteers from the Ronan area in 1974. Since that time these volunteers have made and distributed over 18,000 boxes. Design improvements as well as improved knowledge of materials and box locations are giving us much better results today than a few years ago. This volume of boxes has been widely distributed from Glasgow, Montana, to Spokane, Washington, and from Salmon, Idaho, to Ashland, Montana.

The results we will be concerned with today relate to the success we have had with Western Bluebirds (*Sialia mexicana*). A few early bluebirders maintained nest boxes from 1925 to the present in western Montana. Only three of these men are currently active. Of these three, only Winton Weydemeyer of Eureka reported nesting Western Bluebirds. His excellent records indicate that the last Western Bluebirds reported in the Eureka area were in 1933. Considering the limited knowledge we have of Western Bluebird habitat, perhaps only Weydemeyer had suitable habitat for the Western Bluebirds as the other men in the Hot Springs area had their boxes placed in more open ranch country and thus were used only by Mountain Bluebirds (*S. currucoides*). Other accounts of Western Bluebirds by reliable sources available to me are the following:

Fay Haynes reported them nesting in the Niarada area in 1935, 1936, and 1937 in woodpecker holes in scattered pine forests on their ranch. None were seen after these dates.

Gracia Hilde of Great Falls, who is a very reliable observer, reported a small group, perhaps a family, in the mountains west of Augusta, Montana, in June of 1968.

I found a pair of Western Bluebirds using a nest box in the St. Regis cem-

etry in 1976 which fledged two large broods. In 1977 I found three pairs in the St. Regis area which fledged a total of 34 young birds. We received an excellent response to a nest box change in 1980. We increased the size of the entrance opening to 1 9/16 inches [3.97 cm] and the floor size to 5 1/2 inches [13.97 cm] square. Whether these changes are deemed necessary or simply preferred, Western Bluebirds' use of our boxes increased substantially. Also in 1980, bluebirds and other cavity nesters secured a great friend when Deni Hershberger of Plains, Montana, placed a single nest box in her yard. It was occupied by a pair of Western Bluebirds and 10 young were fledged. This lady's enjoyment of this unusual species resulted in a personal dedication as well as a keen effort to get others involved in bluebird conservation. At this time, the heaviest concentration of Western Bluebirds in western Montana is in the river bottom area near Plains, Thompson Falls, and Paradise and is the result of this lady's effort. By 1984, the Clark Fork Valley from Superior to Paradise and the Flathead River Valley from Thompson Falls to Dixon were producing in excess of 1,000 Western Bluebird young each year. During the summers of 1980 and 1981, I worked with Dennis Flath as he searched unsuccessfully for Western Bluebirds nesting in natural cavities. The Western Bluebird is considered a species of special concern in Montana. In 1985 a nest box at St. Regis, located only two miles from the very first Western Bluebird nest, produced a presumed family of Western and Mountain hybrids. All birds were banded but none were reported in Montana in 1986.

In 1986 the river bottom area from Paradise to Dixon suddenly changed from an area in which nearly 50% of nest boxes were occupied by Mountain Bluebirds to 100% use by Western

Bluebirds. This area contained 39 nest boxes with 36 of them used by bluebirds, all of which were Western Bluebirds. Mountain Bluebirds and Tree Swallows (*Tachycineta bicolor*) were nearly absent from the area. Mr. Flath explained this phenomena as occurring when a previously extirpated or recently reintroduced species suddenly encounters an area of highly suitable but unoccupied habitat. When they realize recovery is possible, they use every available nesting site in a given area. This is in direct contrast to the general territorial behavior usually displayed. It will be interesting to see if this behavior continues in this area in 1987.

I would like to acknowledge and thank Dennis Flath for his timely counsel and advice over the past years; it has been extremely beneficial to all concerned.

Western Bluebirds must spread and extend their range from the concentrated area they are now found in if their recovery is to be successful. Another Mount St. Helens, a widespread hail storm, or a late snowstorm in this small area could seriously set back 10 years' gain for this species.

The year 1986 indicates that this

expansion is starting and their range is increasing. Several were reported nesting in the Hot Springs and Niarada area. One pair was reported building a nest just west of Kalispell on Ed Nirider's trail. Four pairs were reported along the west shore of Flathead Lake in the vicinity of Polson. Winton Weydemeyer was thrilled to find out that finally Western Bluebirds were back in the Eureka area with four pairs successfully nesting there. A pair was seen this year at a nest box in the Condon area although they did not nest. Another pair built a nest in 1985 in Montana City near Helena but were unsuccessful. Another pair has nested and raised two large broods at St. Ignatius in both 1985 and 1986.

In summary, it appears that the nest box program now functioning is priceless to Western Bluebirds in western Montana. Unless the present base is expanded, there is danger of losing the species again to a natural disaster. Much, much more needs to be done, but the present program and its results are most encouraging to those of us involved with it. ■

Box 794
Ronan, MT 59864

This paper was presented at Montana's Non-game Symposium in the spring of 1987. Later Mr. Aylesworth presented the same program to the Pacific Northwest Bird and Mammal Association's annual meeting at the University of Montana.

(OBSERVATIONS—continued from page 133)

resulted in the return of a nesting pair of bluebirds. We hope that by a reduction and further spacing of boxes in 1987 bluebirds will be more successful at this site. Prescott and Gillis (1985) reported on a similar situation in western Oregon where increasing the number of nest boxes within an area actually worked to the detriment of bluebirds because of increased pressure from the two species of swallows.

As the 1987 nesting season approaches we look forward to the sounds of bluebirds and the bustle of

activity and hope for continued success in our "bluebird field." ■

Literature Cited

- Eltzroth, E.K. 1983. Breeding biology and mortality of Western Bluebirds near Corvallis, Oregon. *Sialia* 5(3):83-87.
Prescott, H.W. and E. Gillis. 1985. An analysis of Western Bluebird double and triple nest box research on Chehalem and Parrett mountains in 1982. *Sialia* 7(4): 123-130.

Route 1, Box 1718, Benton City, WA 99320 (Altman); 3595 N.W. Roosevelt Dr., Corvallis, OR 97330 (Eltzroth)

Where Do Bluebird Fledglings Go?

Lawrence Zeleny

People often ask me what happens to young bluebirds after they leave their nest. They always hope that these young birds will remain close by so that they can continue to enjoy them. But quite often the fledglings seem to disappear almost as soon as they leave their nest. At other times they remain close to home throughout the summer and provide continuous enjoyment to the bluebird landlord. Why this big difference in the behavior of different bluebird families?

The worst thing that can happen, of course, is for the young birds to be killed during the first crucial hours or days after they leave the nest. This is the time when bird mortality is usually at its highest. Cats, raccoons, hawks, owls, and other predators find it relatively easy to capture newly fledged young birds. Severe storms may add to this hazard by knocking the young birds to the ground and soaking their feathers so that they cannot fly.

Young birds of many species leave their nests before they are able to fly well enough to keep off the ground. This is particularly true of those species which build open nests among the branches of trees, in bushes, or on the ground. These young birds are quite vulnerable to predators until they are able to get off the ground into protected places. Young robins, for example, usually flutter down from their nest at the time of fledging and flounder around awkwardly on the ground for a day or two while they are gaining strength and flying ability. In many areas where uncontrolled cats are numerous, I am convinced that 75 percent or more of the young robins are killed by cats during their first two days out of the nest. Cat owners should keep their pets indoors at such times, but they usually don't.

Bluebirds and other cavity nesting birds generally fare much better after fledging. The young birds remain in their nests several days longer than

most birds that nest in the open. Perhaps this is necessary for them to gain sufficient strength to clamber up to and out of the entrance hole of their cavity or nesting box. Young bluebirds normally stay in the nest from 15 to 20 days after hatching. In my experiences with Eastern Bluebirds, the young birds in the great majority of cases leave the nest at the age of 17 or 18 days. At this age they are nearly full grown, but their tails are still rather short and their wing feathers are not quite fully developed. But they are usually able to fly at least 25 feet—often much farther—on their first attempt. Instinct tells them to stay off the ground if at all possible. So, they will fly to the nearest bush or tree and will try to stay in the trees for a week or more while they gain strength and flying skill. During this period they are still unable to obtain much, if any, of their own food, so they continue to depend on their parents to bring them food.

Since suitable nesting sites for bluebirds are scarce, these are often not in the immediate areas where the food supply is adequate. Thus the adult birds may have to travel some distance to obtain food for their nestlings. So as soon as the young birds can fly it seems that the parent birds may encourage them to move closer to a better supply of food. This, of course, simplifies the task of feeding them and at the same time explains why the young birds are often not seen close to where their nest was located.

Bluebird families usually remain intact through the summer and early autumn. Sometimes the young birds show considerable interest in their parents' activities when they proceed to raise a second or third brood during the nesting season. This is most likely to happen when the young of the early brood remain close to the nesting location. Usually the parent birds do not permit these older offspring of theirs to

come too close to the new nest or to enter the nesting cavity or box. But this is not always the case, and sometimes one or more of the young birds will actually assist their parents in feeding the nestlings of the new brood and in keeping the nest clean. This kind of family cooperation is rare among birds and I have never observed it with any species except bluebirds. Perhaps this is one of the reasons why bluebirds are so appealing to their human neighbors!

It is an interesting observation that newly fledged young bluebirds are more likely to assist in the feeding and care of their younger siblings when one of the parent birds has died or has perhaps deserted its family. Why should this be? Could it be possible that a bird so young that it has been able to feed itself for only a few weeks could somehow "realize" that its remaining parent needs help? Or could it be that the single parent in some way "orders" its offspring to pitch in and help during this family emergency? Neither of these explanations would meet the test

of scientific scrutiny. Yet one cannot help but wonder. Surely there are still many mysteries in bird behavior for which we have no valid explanation.

In late summer or early fall entire bluebird families often return briefly to the nesting box or cavity that they occupied earlier in the season. They will go in and out of the entrance repeatedly with much chattering and warbling. It would almost seem that they had a sentimental attachment to their old home and that they wanted to revisit it before going elsewhere for the winter. Occasionally they will even carry nesting material into the box and start building a new nest. People often call me with much excitement to tell me that their bluebirds appear to be starting a late brood in October. Actually, of course, this never happens. ■

This article was first published in Purple Martin Capital News (now Nature Society News) July 28, 1980. It is reprinted with permission.

NORTH AMERICAN BLUEBIRD SOCIETY RESEARCH GRANTS

The North American Bluebird Society announces the fifth annual grants in aid for ornithological research directed toward cavity nesting species of North America with emphasis on the genus *Sialia*. Presently three annual grants of single or multiple awards totalling \$7,500.00 are available and include:

Bluebird Research Grant—Available to student, professional or individual researchers for a suitable research project focused on any of the three species of bluebird from the genus *Sialia*.

General Research Grant—Available to student, professional and individual researchers for a suitable research project focused on a North American cavity nesting species.

Student Research Grant—Available to full-time college or university students for a suitable research project focused on a North American cavity nesting species.

Further guidelines and application materials are available upon request from Theodore W. Gutzke, Research Committee Chairman, P.O. Box 121, Kenmare, North Dakota 58746. Completed applications must be received by December 1, 1987; decisions will be announced by January 15, 1988.

An Experiment That Worked

Florence Germond

On 28 April we awoke to falling snow and temperatures close to freezing. Nearby Sharon, Connecticut, had three inches of snow on the ground. Art Gingert, the bluebird trail coordinator for that area, called me at noon voicing grave concern for the bluebirds. He had lost a box of five young, a few days old, that morning.

He knew we had some nestlings and wanted me to check them. He offered to take them and hand feed them if I could ascertain that the parents had deserted them and, of course, if they were still alive. I left immediately taking a mixture of the food I use for winter birds adding chopped raisins and a few ants I found in my kitchen (I'd been fighting them all spring.)

The first box I checked had five very hungry young about five days old. The parents were nearby. I placed a bit of the food on the box top and watched from a distance. The female flew from branch to branch in a nearby maple cocking her head, looking to the ground (which was not snow-covered) for a bug or worm. She did not find anything and finally flew to the top of the box where she immediately picked up a sizable piece of the dough, taking it to a tree where she perched. She returned for a second piece and repeated her action but did not feed the young. I was sure she was deserting them. In nature when food is scarce the adults save themselves first.

I returned home and called Art. He came straight over with boxes of cotton in which to put the young. He also brought blueberries and currants. By this time I had checked two more boxes with live young and nearby parents, but I

feared for them all.

While we watched the first box, we saw the female take bits of the mixture I had left on the roof and feed the babies. We were thrilled. We watched for an hour. She fed the nestlings and carried out feces. The young were quiet now and certainly surviving. We put the currants and blueberries on a tray set on a post a few feet from the box and watched for another hour. By now the male occasionally brought a tiny worm and fed the babies. The female continued to take the "dough." Neither of the pair went near the berries. Art then set the tray on top of the box. The female came, fluttered near but did not alight. Twice more she spooked, but the third time she landed and took a currant, flew off and ate it. Again she repeated the act. Over and over she fed herself. She did not take the fruit to the nestlings. By now two hours had passed, and both parents managed to find some food and the female continued going into the box with bits of dough.

We watched for almost another hour. When we left near dusk we felt that we had perhaps saved them—most certainly we had established that food could be provided.

The next day I checked the boxes containing young. All were alive and well, but the weather was better here than in Connecticut. In that state not only did they lose young, but eggs were also deserted. Maybe if we ever have another "early-late" spring like this one, food can be provided for the bluebirds. ■

RD 2, Box 254 Shunpike
Clinton Corners, NY 12514

PLANTINGS FOR BLUEBIRDS AND OTHER WILDLIFE

American Bittersweet

Karen Blackburn

American Bittersweet has been prized as an ornamental since colonial times. Its vines, bearing an abundance of colorful fruits, are a conspicuous feature in the autumn landscape, and the fruiting branches are often gathered and brought into the home for decorative purposes.

The long-lasting fruits of American Bittersweet are of importance to wildlife as a source of emergency food. No birds are known to take the fruits as a "preferred food," but during severe weather when other food supplies have been exhausted, the significance of plants that provide life-sustaining "emergency food" cannot be overestimated.

American Bittersweet (*Celastrus scandens*)

Native Range—Southern Quebec and Manitoba south to Georgia and Oklahoma.

Hardiness—To Zone 2

Habitat—Along streams, roadsides, in old fields and fencerows in full sun or partial shade.

Habit—On favorable sites, an aggressive, twining vine reaching 20 feet [6.1 m] or more.

Fruit and Flowers—Inconspicuous greenish-yellow flowers. Sexes on separate plants. Fruits are 3/8 inch [.95 cm] orange capsules which split to expose fleshy red seed coverings. Fruiting period is from August to December.

Landscape Value—Has been planted as an ornamental since 1736. The fruiting branches are decorative whether left on the plant or brought indoors for use in arrangements. Very attractive when grown on trellises or allowed to ramble over fences and walls. Also useful in controlling erosion.

Culture—Best when planted in full sun. Tolerates many soil types as long as pH is nearly neutral. Male and female



plants are necessary for fruit production. Propagate by stem cuttings, layering or fall-sown seeds.

Undesirable Traits—Tendency to spread rapidly under favorable conditions may be considered undesirable on some sites. The fruits are reportedly poisonous if consumed by humans.

Wildlife Value—Excellent cover plant for wildlife and offers good nest sites as well. Annual fruit crops are dependable and persist throughout winter months. Since no birds are known to take the fruits as preferred food, most of the crop is left on the vine until other sources of food have been exhausted. The Wild Turkey, Ruffed Grouse, Northern Bobwhite, Ring-necked Pheasant,

Northern Mockingbird, Gray Catbird, American Robin, Hermit Thrush, Eastern Bluebird, Cedar Waxwing, European Starling, Red-eyed Vireo, Northern Cardinal and Pine Grosbeak are among the birds that feed on American Bittersweet. Rabbits, squirrels and deer also feed on the plant.

Special Uses—The colorful fruiting branches are often used as fall decorations for the home. ■

Rt. 3, Box 213
Marianna, FL 32446

We invite our readers to report their observations of plant use by bluebirds and other wildlife. 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 observations to Karen Blackburn, Rt. 3, Box 650, Marianna, FL 32446.

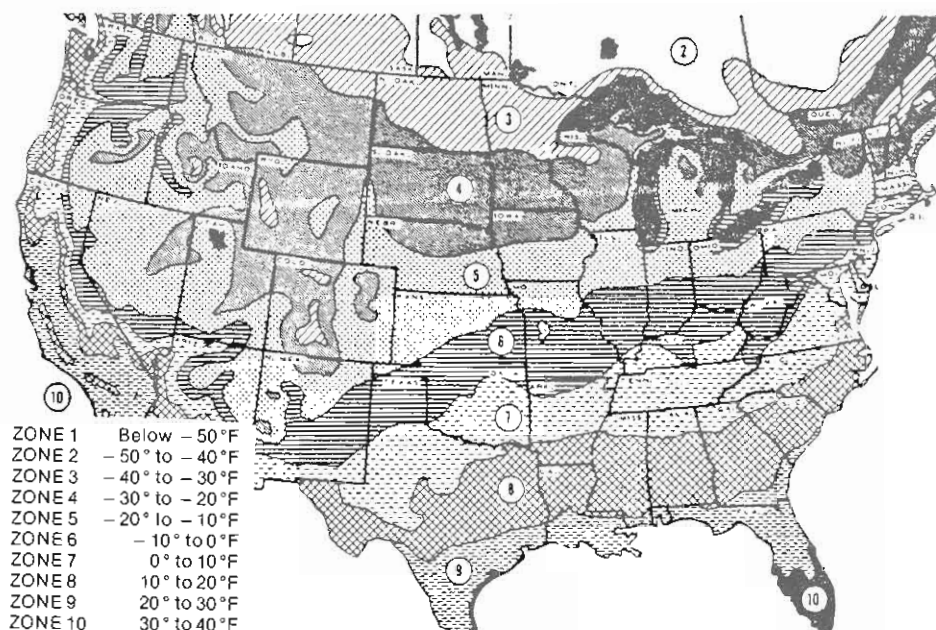


Figure 1. Hardiness Zones for the United States and southern Canada. Temperatures for each zone are the average annual minimum temperatures. When no zones are mentioned with the plant description, plants are hardy anywhere. Factors within zones such as altitude, exposure, soil type, moisture, etc. can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

Trail Directory Additions

If you have monitored a trail of 50 or more boxes for three years or more and would be willing to offer advice, tours, or a site for research give us your name, telephone, address, time tours would be possible, and the county, city and state where your trail is located.

Mail above information to Bluebird Trail Directory, NABS, Box 6295, Silver Spring, MD 20906-0295.

Bluebird Banders Wanted

We have received a few additional names of individuals willing to band bluebirds. They will be published prior to the next breeding season. If you are a licensed bird bander and are willing to make yourself available to trail operators and individuals in your immediate area who need nestling bluebirds banded, send your name, address, and telephone number to Editor J.K. Solem, 10617 Graeoch Rd., Laurel, MD 20707.

QUESTION CORNER

Lawrence Zeleny

During the second nesting of a bluebird pair in our yard, one day the nest that had contained 5 or 6 eggs was completely empty. I moved the nesting material with a screwdriver and found the missing eggs. The female then laid four more eggs on top of them and raised those successfully. Was the first female killed? Did a cold snap kill the embryos? Did the same female lay the second clutch of eggs?

Sarah Heddings
Northumberland, Pennsylvania

The sequence of events that you describe is fairly often encountered by bluebird trail operators. In cases like this it is impossible to say for sure just what happened, but one of the following explanations probably applies in most cases:

1. The female bird either died or deserted her nest for some unknown reason. Another female then built her nest over the original nest and proceeded to raise her family.

2. The original clutch of eggs failed to hatch either because they were infertile or because they became chilled. The same female or perhaps even a different female then built another nest on top and raised a successful brood.

We had a male bluebird with two females nesting about 50 feet apart. One female was caring for her babies alone due to the fact that the male was off with the other female and their newly fledged young. At six days of age there were six apparently healthy young in the nest, but when I checked the box at eight days there were only two young, also apparently healthy. There was no sign of nest disturbance, but four young were missing. If the young had died, would the female remove



them from the nest?

Gene Greenwell
Newport, Indiana

Although it is hard work, single bluebird parents are usually capable of raising even large broods successfully unless there is a serious shortage of insects for food. Exceptions to this rule may occur when the nestlings are very young and the single parent is the male bird, since he may not be able to brood the baby birds well enough to keep them warm during their first few days of life.

Adult bluebirds usually remove any very young dead nestlings from the nest. It is uncertain, however, whether the mother bird in your case could have removed nestlings as old as six or eight days.

The most likely cause of the loss of your nestlings is that they were taken by some predator. Both parent birds will fight valiantly to drive off predators, but with the male bird being absent this source of protection is obviously greatly diminished.

Snakes of several species will often remove nestlings without disturbing the nest. Red squirrels and chipmunks can enter the nesting box and will sometimes carry away nestlings. Blue Jays and kestrels have been known to reach through the entrance holes of bluebird boxes and remove nestlings, and I suspect that other jays as well as crows and grackles may sometimes do the same thing. Cats may also be guilty. And don't overlook the possibility that two-legged predators, the most inexcusable of all, may have been involved. ■

Problems with Pesticides

Sara Loken

For the past three years Sara and Robert Loken, along with some of their neighbors, have been exposed to a variety of pesticides used on nearby agricultural fields. In their efforts to protect themselves, their animals and the wildlife on their land, they have pursued bureaucratic and legal avenues in order to obtain satisfaction. They hope that the following information may help readers who may have similar problems. We are reprinting portions of letters written to NABS by the Lokens on 12 August 1986 and 27 January 1987. Mr. and Mrs. Loken have also kindly volunteered to provide help to members in the form of advice and/or information.

12 August 1986

This has been a tough year for the birds and the monitor alike. It was the third year in a row of severe pesticide drift (on 4/28) from a neighboring hillside. This year's pesticides were Lorsban and Paraquat with other chemicals of a less lethal nature thrown in—better than the two previous years of Toxaphene and Paraquat, but still very toxic. This year we raised hell in every direction, up to the governor's office and with a tough attorney—and hope future years will not be as dangerous to man, birds, the environment, et al.

The drought and heat certainly made existence difficult for the bluebirds. We have 14 boxes of which 12 are monitored regularly. The most active boxes are far from the house; unfortunately, much too close to the pesticide-treated no-till corn field which is also populated by crow families. Of 14 boxes, only five produced successfully: a total of 5, 3, 4, 5, and 5 or 22 fledglings. Where we have often had three clutches per box, we had only one successful clutch per box this year.

There are now many dead trees in the proximity of the treated corn field and I fear bluebirds may be making nests in those trees. If so, and if they are feeding from the corn field, we are losing them there as well.

Our report to the Environmental Protection Agency (EPA), sent in 1985 reporting on the 1984 and 1985 spraying, which was written and signed by five families, met with no response from the investigating agency which is the state Department of Agriculture. We persevered in writing to officers of that department using contacts within our political party, our church, everything. Finally, this year 21 neighbors appealed by written petition to the landowner and lessee for caution. A copy of that petition, along with labels from the pesticide cans and a personal appeal, went to Governor Baliles, whose office took note and urged the Department of Agriculture to render assistance. Investigators have finally visited us, and have been shown wind-speed records, affidavits of innocent visitors to our property who were taken ill, photographs of the spraying in a high wind, etc. The Department of Agriculture is suggesting: a) a buffer zone and b) Department of Agriculture monitoring of future spraying. We will add our own suggestions concerning wind speed and direction during spraying, later monitoring if chemicals have volatility, and insistence that no drift fall on our lands. Our effort is to contain the drift without pushing the neighbors into using Furadan granules which would REALLY kill everything. We are forming into a branch unit of the National Coalition Against the Misuse of Pesticides and working with the National Resources Defense Council.

27 January 1987

You may remember that we are one of the many families who have been exposed for the last three years to pesticide drift from a neighboring hillside. The hillside is leased for five years to a fuel oil distributor for no-till corn. Neither the landowner nor the lessee is a farmer.

After two years of intensive efforts to research, substantiate, document, and PERSUADE the individuals involved and the officials who should have been in-

involved, of the harm done to us, our livestock, birds, etc., we now finally know the system and wish to share it with you and your readers.

I should add that it was the governor's office that finally put the system in motion for us.

Within the State of Virginia, each region has a Pesticide Investigator who, upon approval of the Pesticide Supervisor in the Virginia Department of Agriculture in Richmond, visits the site involved and takes samples of plant tissues, soil, water, et al. He sends these samples to the state labs which report on any residues they find. If residues are found on non-target areas, the state either a) issues a warning to or b) levies a fine on the applicator and notifies the victim of the action taken.

On our part, we photographed our landscaping before the pesticide spraying took place, pulled blood from horses for base reference on cholinesterase, got wind-speed and direction from National Weather Service stations in the area, photographed the applicators themselves while the spraying was in process, photographed horses before and after to show skin reactions, etc. Further, we obtained labels and instruction booklets from the pesticide cartons in order to know the EPA (U.S. Government) laws concerning instructions. Also, we have learned that the Department of Pesticides monitors at random 50 sites each year. They have promised to monitor our site this coming year.

We offer this information to bluebird "custodians" because the birds, or lack of them, are a basic clue to an environmental problem.

The first year of pesticide spraying: We were not aware that the spraying had been done; however, we and our neighbors noticed a complete and total lack of birds. None. No bird songs; no birds. Bluebird boxes that had been producing up to three clutches each year were empty. It was many months later that neighbors began to correlate unusual occurrences relating to our dogs, cats, horses, pond inhabitants, and ourselves that we began to make inquiries.

The second year of pesticide spraying: This time we saw and smelled the pesticides and carefully monitored our individual family situations. Bluebird adults settled into the boxes and hatched their eggs, but fledglings died in the nests. They were found to be sticky, as though they had ingested oil of some sort. (Later diagnosis: the inert ingredients in the chemicals were the cause.)

The third year: Despite protests, pesticide spraying took place again—some chemicals new to us, some changes in the old—in very high winds. Boxes contained three and four nests on top of each other and, in some cases, each nest held eggs which appeared intact.

Because the spraying takes place on a high hill which slopes down on three sides, with wooded hilly countryside surrounding it, many residential areas are exposed without their knowledge. This year, 1986, residents of the area suffered severe reactions from bee and wasp stings, primarily yellow jackets. The first victim died in transit to the University of Virginia Hospital in Charlottesville. The emergency room doctor told the family that pesticide exposure had made the bees more dangerous. Three days later, a young man mowing our lawn was stung and the rescue squad was here within 12 minutes and saved his life—barely. The following morning one of my mares was found dead; her side was covered with welts, presumably from stings. Many more people in our area have had life-threatening reactions to stings. We abandoned the effort to get hay into our haybarn because of the angry bees.

The State Beekeeper told us that bees fly as much as two miles for food and can bring back contaminated food to the hive. As bees within the hive die from the contaminated food, the bees become agitated and are more ready to attack and in greater numbers.

I share this information in the hope that it will alert readers who are monitoring their boxes and hence their environment. There is a system in place for everyone to turn to to prevent contamination of non-target areas, but it takes careful monitoring, responsible documentation, and perseverance. ■

Route 1, Box 54 C
Reva, VA 22735

Training Bluebirds to Use a Feeder

Angeline S. Cromack

Because the feeder design is similar to others that have been published in Sialia, no construction diagram is included; however, Dr. Cromack's methods of training bluebirds to use such a feeder may be helpful to readers.

The "exclusive" bluebird feeder which Verne E. Davison describes in his book *Attracting Birds: from the Prairies to the Atlantic* (1967), was used by him to feed Eastern Bluebirds choice fruits during the fall and winter. The bluebird nesting season is a good time to accustom the birds to this feeder. Since Western Bluebirds feed more heavily on insects and less on easily available fruit than their eastern counterparts, we found that mealworms placed in a clear custard cup were eaten eagerly. Mealworms are easy to grow yourself or you can purchase them from pet stores or a commercial wholesaler. During the fall and winter when they normally eat fewer insects and more fruit, you can experiment by giving the birds raisins or currants or choice fruits attached to small branches such as mistletoe, cotoneaster, or pyracantha. The feeder is large enough to accommodate several bluebirds feeding simultaneously in it. If nuts or seeds are put in it, chickadees and nuthatches will find it attractive.

Davison called the feeder "exclusive" because the 1½ inch [3.8 cm] diameter entrance holes prevent larger birds from using it. Nesting adults can be trained to use it, and others readily learn from those feeding in it. Perches make the route to the exit holes easier

for the birds to find if they become confused once they are inside. Juvenile birds must reach a certain maturity before they understand how to enter and leave a cavity via a hole. For ease of observation and safety, flexible plexiglas sides are used instead of glass. They will cushion the blow if the birds inside become frightened and fly into them. Two sets of parallel lines drawn on the sides with a waterproof felt pen help the bluebirds realize that the plexiglas is there.

It is best to have the feeder maximally open when training bluebirds to it. The roof may be swung open and secured with elastic or twine. Both plexiglas sides can be removed, one by sliding it out vertically and the other by flexing it slightly. As the birds get used to the feeder, the roof can be closed as a first step (especially during rainy Oregon weather), and at a later date one side may be replaced. A tinted clear acetate sheet may be slipped next to one side as an attention getter. When the second side is placed in its slot, it should be covered with white translucent paper until the birds learn how to enter and exit through the holes. Later the paper can be removed.

Because of the feeder's weight, it may be best to set the supporting pipe holding it in concrete. Place the feeder below one of the bird's favorite high perches so its contents may be seen easily. These birds are not used to hanging nest boxes or swinging feeders. A bird bath is an essential accessory to the yard with a bird feeder or nesting box. Bluebirds.

(Continued on page 132)

A Davidson Sesquicentennial Project: Protecting the Threatened Bluebird

Robert Page

The population of the Eastern Bluebird may have dropped nationwide by as much as 90 percent in the last 40 years. A project to celebrate Davidson College's 150th year aims to help the songbird survive.

Under the leadership of the department of biology and the student biology society, the college has addressed the problem with nesting boxes. Davidson has constructed 150 nesting boxes for troubled bird species: 60 are intended for bluebirds and the rest for other native cavity nesters.

"Bluebirds need all the help they can get," says biology department chairman and NABS member, John Williamson. "Older people can remember in the 1940s seeing large numbers of them on a wire over a meadow somewhere, but they don't see them any more. They ask, 'Where have all the bluebirds gone?' Well, the answer is that their population has just crashed."

In October 1986, in preparation for Davidson's year-long Sesquicentennial Celebration, Williamson began a project to help them. He acquired plans for different sizes and types of bird houses—the boxes are designed to protect the threatened birds against their natural enemies—and asked the college shop to cut out the wooden parts. Members of the biology society then assembled and weather-treated the bird houses and developed instructions for their sponsors. Donations from community members and biology alumni paid for the project.

Davidson's biology society expanded the project to include other species of threatened birds because 150 bluebird boxes would require too much space. The boxes will be placed on the college's 450 acre main campus and its 106 acre Lake Norman campus as well as in the town of Davidson (population 3,000).

Davidson may have a good start on a bluebird home improvement plan,

Williamson says, because of the college's traditional emphasis on organic fertilizers. Artificial fertilizers endanger wildlife and insecticides kill or poison the food of birds.

He is confident about the outcome of the Sesquicentennial bluebird campaign. "We'll certainly increase the number of bluebirds, because they're so low to begin with, and we have a very high probability of helping the other species." ■

Extracted from a Davidson College feature release. We will look forward to hearing about the results of this project. We trust that all boxes will be carefully monitored to prevent European Starlings and House Sparrows from nesting, particularly in the duck, owl and kestrel boxes. Their location and larger hole size often make them less likely to be monitored carefully and more likely to be used by aggressive non-native cavity nesters than by the species for which they were intended.

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.

A Bluebird Trail as a Teaching Aid

Tom A. Barber

For the past four years (1984-1987) we have had the unique experience of having Doug LeVasseur band Eastern Bluebirds on our school playground. Liberty Elementary in Cambridge, Ohio, has a two box trail. Thirty-three birds have fledged from this small trail with seventeen of these birds being banded.

Mr. LeVasseur has come into my fourth grade classroom each spring and taught the reasons bluebirds have declined and what we can do to help them. Three different springs he has come back and banded. He also banded once in late summer.

During the nesting season of 1985, we had no successful bluebird nestings because House Sparrows took over the trail. LeVasseur built traps in both boxes. In 1986, four adult male sparrows were caught and taken into town nine miles away and released. That season thirteen bluebirds fledged from four successful nestings.

Again this spring, 1987, House Sparrows were a problem at Liberty. In early March an adult male bluebird was found dead in a nesting box by a child who lives near the school. This bluebird had a band on its leg. The fourth graders checked the band numbers of the nestlings we had banded 28 August 1986. Sure enough, it matched one of those birds. We knew from this information that the dead adult was seven months, three days old. He had claimed a box only 200 yards from where he was hatched. He was breeding fairly quickly and had survived the mild winter.

The traps were not working as not a sparrow was caught with them. Another adult bluebird male was found dead inside a box on our trail with the sparrow still in the box with him. I was able to catch the male sparrow by hand. Then we got lucky and a pair of bluebirds nested in one box. LeVasseur came to school and banded 29 May 1987.

We mailed the band from the recovered bird to the Banding Laboratory in Laurel, Maryland, with each child writing about what they had learned. The students also wrote about the boxes they had built at school and put up at home. At this time, in early May, four students had bluebirds nesting in their boxes. LeVasseur had helped us build twenty-two nesting boxes by cutting out the kits. Following his instructions the students nailed them together in our gym.

As the nestlings hatched at Liberty this spring, one student in particular wanted to watch the parents feed the nestlings and record this information. Scott Secrest timed the adult birds with a stopwatch. He recorded the length of time they were inside the box and noted whether they carried out fecal sacs. He spent his recesses making daily observations.

This same student set up a six box trail of his own at his home. He was excited when a pair set up housekeeping in one of the boxes closest to his house. He kept careful notes when the eggs were laid and when they hatched. He called Doug LeVasseur and arranged for him to come out to his home and band his five nestlings. Things went very smoothly and the babies fledged.

Then he was even more excited when the pair returned for a second attempt to raise a family. He saw me at the library 17 June and told me he had three eggs. Again he kept records and checked the progress every day. The eggs hatched 2 July and everything was going well. Then Sunday, 5 July, his mom called me. She said he had gone out to check the babies and started crying very hard. He found the female dead on the ground in front of the box. The babies were four days old. The male was flying very close to Scott, so I told his mother that the male could feed the young on his own and they



Doug LeVasseur teaching box building at his home 14 March 1987, to fourth grade students of Liberty Elementary School, Cambridge, Ohio.

could survive. The young were old enough so that they would not need brooding at night.

LeVasseur came and banded Scott's healthy, though motherless, bluebirds 12 July 1987. Two days prior to the banding Scott was outside taking a picture of the box. He wanted to record the claw marks on the front of the box to show what had happened to the female. Just then a juvenile bluebird flew in and fed its younger brothers and sisters. Scott took a picture of that bird. It appeared that the male had help with his hectic feeding duties.

Scott's cat has been staying in a cage since the female was killed 5 July 1987. He has taken the rap for the killing even though the family is not sure who did it.

The female bluebird is buried close to another box that at the time of this writing has five nestling bluebirds about three days old.

Scott's trail of six boxes could fledge fourteen bluebirds for his first

year of bluebirding. All will be banded by Mr. LeVasseur. What a neat experience for a child of ten years of age.

Outdoor education does not have to stop in the summer. I have asked all my students to keep records of their nesting results.

The excitement never ends with bluebirding. When you can share that excitement with young people and get them interested early, the fate of the bluebird will be in good hands. ■

60406 Stewart Rd.
Cambridge, OH 43725

Mr. Barber is a fourth grade teacher and the Director of Outdoor Education, Cambridge City Schools, who has a 15 box bluebird trail located close to his home. Within the last four years over three hundred bluebirds have been fledged.

Mr. LeVasseur has banded over six hundred bluebirds both adults and nestlings since 1982. He maintains two nesting trails. One is by his own home in Senecaville, Ohio, and the other is on a golf course near Senecaville. More photos →



Kyna Barber building a bluebird box at Doug LeVasseur's home. Wendy Owens is helping her by holding the box.



Jennifer Helier and Scott Secret observing the feeding of bluebird nestlings on the school playground 26 May 1987. These students gave up recess time to study bluebirds.



Photographs by Tom Barber.

Nestling bluebird being held by fourth graders during the banding on 29 May 1987 which was completed by Doug LeVasseur.

GAY DUNCAN

Bluebirders were saddened to learn that Gay Duncan of Southern Pines, North Carolina, had passed away in August after a battle with cancer. Gay had a deep love for bluebirds and a wonderfully gentle way with people; thus, she was able to share her enthusiasm and spread the word about bluebird conservation throughout her home area of North Carolina. Gay was a past NABS board member and a founding member of the North Carolina Bluebird Society. Her care for others was exemplified in ministering weekly to the elderly in a nearby nursing home. Our heartfelt sympathy goes out to her family. As a fellow North Carolinian said, "Gay must surely be watching us from above as she is now in peace." To that we say, "Amen!"

—M. Janetatos

Nest "Transplant" For Barn Swallows

Dean E. Sheldon, Jr.

Ours is a typical, old midwestern barn which is divided into two separate sections by a wall with separate "cannon ball" track doors leading into each section.

Early each spring, I have opened at least one door into each section of the barn in the hope that Barn Swallows would choose nesting sites in both parts of the barn. Before we came here in 1981, the barn was shut up tight and there was no evidence of Barn Swallow nesting.

In the spring of 1982, Barn Swallows built two nests in the south section of the barn. A third nest was added in 1983, although no more than one pair of birds at a time has ever nested in that part of the barn.

It bothered me that no nesting ever took place in the north section of the barn even though potential nest sites were similar (old, round hardwood log beams with some flat boards nailed to the undersides of the beams). The birds had no apparent aversion to the north side of the barn. They flew in to and through it regularly on feeding flights—they just didn't nest there.

On 18 May this year, as an experiment, I took down a nest from the south section of the barn, soaked the bottom and back in water until it was sticky and pliable, and then put it on a flat board up against a beam in the north section of the building.

A pair of swallows began to add mud to the nest and placed fine nesting material in the structure before the first egg was laid on 21 May. Three more eggs were laid, incubation took place, and the

clutch hatched on 4 June. Those four nestlings fledged on 24 June.

Meanwhile, another pair of birds added nesting material to one of the existing nests in the south section of the barn and a first egg appeared on 26 May. Three more were added and incubated. Hatching took place on 9 June. Fledging took place 29 June.

So, for this year at least, our annual "output" of Barn Swallows has doubled due to the placement of the "transplanted" nest. It remains to be seen, of course, whether birds will return to that nest next year.

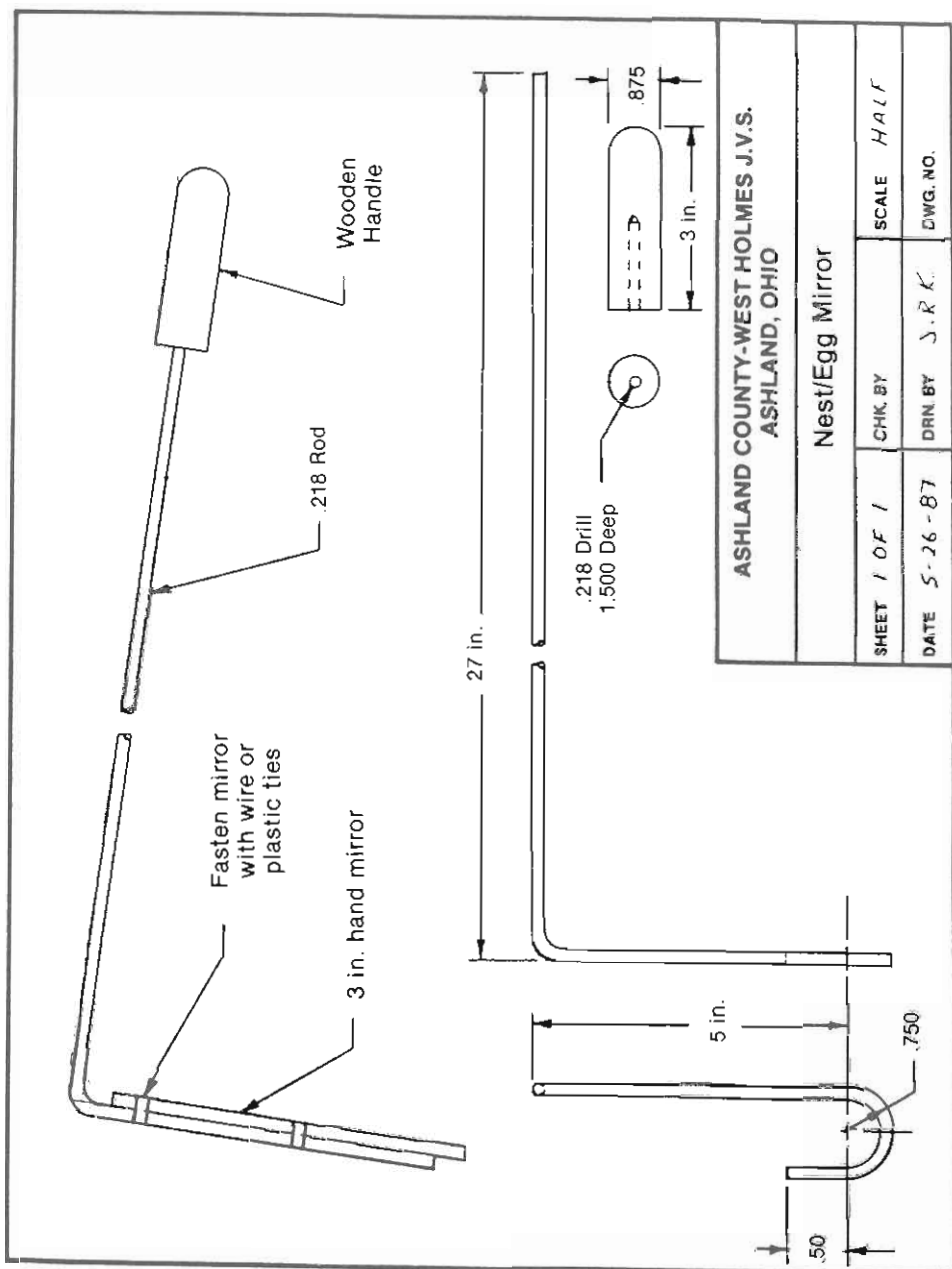
Having had this success with nest "transplants," we are now going to try placing some transplanted Cliff Swallow nests under the eaves of an adjacent building in the hope that we will attract that species to our place. ■

RD #1, Box 77
Greenwich, OH 44837

Bluebird Slide Show

The NABS slide show is available for rental at \$10.00 or purchase at \$55.00. The show consists of 141 collated, cardboard-framed 35 mm slides and a printed script (no slide tray). If a cassette narration is desired add \$5.00 to the purchase price.

To rent or purchase the bluebird slide show, write to the following address: NABS Slides, Box 6295, Silver Spring, MD 20906-0295. Please allow a month for delivery and, if possible, specify several dates.



Above is a drawing of a device Dean Sheldon constructed to enable him to check the nests and eggs of swallows, robins, and other species. Use a flashlight with this mirror if you use it in a dimly lit area.

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!



Dear Editor:

With so many other organizations getting into the bluebird "act," I feel we've got to try to remain as the most believable. For example, you wouldn't believe (or would you) the types of boxes coming out for sale at ridiculous prices that don't meet our standards. Just had two different ones given to me to revamp: 1) wrong size hole, 2) depth from hole to bottom of box 3 7/8 in., 3) no drain holes, 4) one small vent hole at top, 5) no front overhang for sun or rain protection. I could go on and on!

William C. Harris
Nashua, New Hampshire

Dear William Harris:

In natural cavities, of course, there are no "standards," but we can encourage our members when buying or building boxes to be alert to some of the items you have enumerated particularly entrance hole size, drain holes and vents. Thanks for your energetic and enthusiastic support of cavity nesters.

Dear Editor:

I have been meaning to comment on the article "Common Barn-Owl: The Cat with Wings" (8(3):89-92). My observation concerns barn-owl populations depending MORE on food supply than on the availability of nesting boxes. Therefore, if *Sialia* readers put up beau-

tiful boxes and are wondering why they have no barn-owls, they should consider the food supply. Barn-owls feed a prodigious number of moles, voles, mice and other small mammals to their voracious young. The quantities of rodents needed by the owls cannot be found in groomed lawns, wooded lots, or suburbia in general. *Unplowed meadows and untouched marshy land* seem to be the best areas in which rodents can be found by owls. Nesting boxes placed near such areas will have the best success promoting owl populations.

Susan Lisowski
East Stroudsburg, Pennsylvania

Dear Editor:

The Atkins have had a wonderful year (1986) with the bluebirds. We have 27 nesting boxes in a 10 mile radius located in Giles County in southwestern Virginia.

The past winter commencing in late December until mid-February four bluebirds used a nesting box in our back yard for sleeping quarters. You well know that they deposit droppings in the box during the night, so my wife cut 4 x 4 in. pieces of paper from grocery bags and changed the paper each day. It became a source of laughter around the house when I would ask, "Has the bathroom been cleaned today?"

We have 27 boxes, all 4 x 4 inch with

a front opening. A total of 114 bluebirds fledged during 1986; 78% of the boxes had one nest and 19% had two nests.

Garnett W. Atkins
Pembroke, Virginia

Dear Editor:

Enclosed is a clipping from the Norman, Oklahoma *Transcript* about a bluebird trail which I set up in a nature park in town at the park department's request. Nothing to report yet.

I do have a successful short trail 17 miles east of Norman in scrub oak country. The one in Sutton park is more an exercise in consciousness-raising.

My husband and I enjoyed the NABS convention at Western Hills [OK]—especially the fine enthusiastic people.

Patricia Folley
Noble, Oklahoma

Dear Editor:

Art Briggs-Jude, near Westport, just north of Kingston, heads a group of us to encourage the return of the bluebird. Enclosed is material he authored from a display at the Pioneer Supper held at Westport, August 25, 1984.

Jack Sylvester
Kingston, Ontario

THE BLUEBIRDS AND THE PIONEERS

WHEN THE EARLY SETTLERS CAME TO THIS LAND, THEY CLEARED THE FOREST GROWTH AND CREATED FIELDS AND OPENINGS FOR THEIR CROPS AND CATTLE. WHILE SOME KINDS OF WILDLIFE WERE PUSHED BACK, OTHERS ACTUALLY INCREASED BECAUSE OF THIS CHANGE IN LANDSCAPE. MOST NOTICEABLE TO THE PIONEERS WERE THE SOFT-VOICED BIRDS THAT BUILT THEIR NESTS IN THE HOLLOWES OF THEIR RAIL FENCES OR IN THE HOLES IN THEIR HOMESTEAD TREES.

THIS EARLY SEASON MIGRANT, WITH THE SKY-BLUE WINGS AND EARTH-TONED BREAST, SOON BE-

CAME KNOWN AS THEIR HARBINGER OF SPRING. AFTER ENDURING A LONG, COLD WINTER WITH UNBELIEVABLE HARDSHIPS, THE SIGHT OF THE FIRST RETURNING BLUEBIRDS IN MARCH GAVE THESE STRUGGLING SETTLERS NEW HOPE THAT SPRING AND MILD WEATHER WERE AT LAST ON THE WAY. YET THIS RELATIONSHIP WAS NOT LIMITED TO THE BIRD'S GOOD OMEN IN THE SPRING FOR THE BLUEBIRD BECAME A NEIGHBOR AT THE WELL, A CHORISTER ALONG THE LANE, AND AN ALLY IN THE GARDEN. POETS, SCRIBES, AND COMPOSERS WERE INSPIRED BY ITS PLAINTIVE NOTES AND ITS PLEASANT DISPOSITION. ARTISTS STRIVED TO MATCH ITS SOFT COLOR TONES.

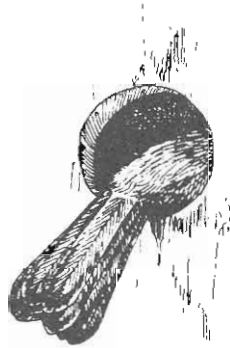
YET, AFTER A HUNDRED AND TWENTY-FIVE YEARS, THE BLUEBIRD, A PART AND PARCEL OF ONTARIO'S RURAL COUNTRYSIDE, BEGAN TO FADE FROM OUR MIDST. COMPETITION FOR NEST CAVITIES FROM IMPORTED HOUSE SPARROWS AND EUROPEAN STARLINGS, TOXIC SPRAYS OF THE NOW-BANNED D.D.T. TYPE, CLEAN FARM AND WOODLOT PRACTICES, AND LOSS OF HABITAT DUE TO URBAN SPREAD HAVE REMOVED THE TRADITIONAL HARBINGER OF SPRING FROM MANY AREAS. FORTUNATELY, THERE IS HOPE AND A WAY TO BRING THEM BACK.

THIS NEST BOX, MADE FROM CENTURY OLD BARN BOARD, WHEN PLACED ON A FENCEPOST IN OPEN FARMLAND, COULD BE A HOME FOR A BLUEBIRD NEXT SPRING. ITS DESIGN HAS BEEN PROVEN IN THE FIELD FOR OVER TWENTY-FIVE YEARS. THIS BEAUTIFUL AND BENEFICIAL BIRD IS IN DIRE NEED OF HELP, NOT SEVERAL YEARS HENCE WHEN THE EFFORT MAY BE TOO LATE, BUT RATHER NOW WHILE ENOUGH NUMBERS EXIST TO ENSURE ITS FUTURE. OUR FOREFATHERS LEFT THIS AVIAN LEGACY IN OUR TRUST. SURELY WE CAN LEND A HAND SO THAT OUR CHILDREN TOO MAY BE ABLE TO SHOW THEIR CHILDREN A BLUEBIRD.

ART BRIGGS-JUDE

Bluebird Tales

Mary D. Janetatos



For the first part of the spring, bluebirds passed by the three nest boxes in the NABS headquarters' backyard. A chickadee family fledged six young from the box in the front; then Great Crested Flycatchers investigated a bluebird box in the backyard. Since that entrance hole was too small, we quickly installed another box with a properly sized entrance hole: 1 9/16", but they found another nest site, probably in the parkland adjoining the yard. Then bluebirds appeared, to the delight and excitement of the NABS' staff. Wrens arrived and between the two pairs, a negotiated truce was declared. "You take the front yard, I'll take the back yard!" Of course, it was Mr. Wren speaking, as HE holds sway, small but mighty. Both pairs built nests: Jenny Wren laid six eggs, Mama Bluebird four. All hatched. Baby wrens fledged successfully but the bluebirds were not so fortunate. Some predator came in the night (cat? raccoon?) and in the morning two young bluebirds were gone from the nest. The parents were alarmed, and in the morning they urged, cajoled and coaxed the other two young out of the box. I managed to corral one young and hand fed her in an outside bluebird feeder until the parents came and took over. She then fledged and off they all flew. I hope they are all surviving now as they fly from tree to tree in the nearby woods. Gone are my cherished plans to lure the bluebirds to the feeder so that we can view them in winter as well as summer.

There is always something surprising when one becomes "Involved" with nature. Mrs. Basil Lyon, of Loretto, KY, asked for NABS information and said, "Three years ago we put two bluebird houses on the fence posts in our backyard. Just this spring we got bluebirds in one of them. Recently we peeked in and discovered two nests in the one house. Mom and Pop sitting in one, and two very young birds and two unhatched eggs in the other. Is this the usual arrangement?" If that was surprising, consider what Pat Burris, of Raleigh, NC, saw happening. "I am so excited about my pair of bluebirds, I can hardly write. On 11 May, Marvin (the beautiful male) built his nest in a clay bird house sitting on our deck rail. It is so interesting to watch Marvin come early every morning with either a worm, moth or some type of insect and Matilda (the female) opens her little mouth and Marvin drops the breakfast in. We have become really at-

tached to Marvin and Matilda and their safety is of utmost importance to us. I hope that I haven't bored you too much. This is just a new and exciting experience for us." From Lindsay in Ontario, Canada, Nicole Bogshaw wrote that she lives on a hog farm 13 miles from NABS Board Member Robert Braley of Omamee, who gave her NABS bluebird information. "I have become almost obsessed with building houses...as yet I have never seen a live bluebird, but hope that my houses will be successful this year." Carol and Sam Cate, of Unionville, VA, wrote that they read of us in the May '87 *Southern Living*. "We first fell in love with them on our wedding day when a male hovered only a few feet away from us as we unwound after the reception. It was a sight we will never forget. This male returns each year with his wife to nest in a small handmade house." From the same source came the inquiry from Jim and Dorrine Evans, of Tulsa, OK. "Since the article we are kicking the sparrows out in hope of attracting the bluebirds and to quote the article, 'to make sure it stays.'" Sarkis Acopian, of Easton, PA, was so anxious to see bluebirds he felt like personally flying down to Beltsville, MD, to see Larry Zeleny's trail. Here's hoping he and Bobbye enjoyed the NABS Tenth Annual Meeting! Lawrence Moore, of Jerome, ID, wrote of the dearth of bluebirds in his home town—which I hope changes because of Al Perry of Boise. Clarence Hagerman of Pinehurst also has been actively promoting bluebird conservation in Idaho, where the state bird is the Mountain Bluebird.

From Knoxville, TN, Naomi Reed wrote, "We did have one mishap that I must share with you. Three years ago a misfortune befell our pair and five fledglings were left. I successfully reared three of them in my spare bedroom for six weeks and with many tears and fears on my part released them with much hope that they could survive on their own. It was not any easy task to care for them. At first it took constant hourly

feedings (I used moistened Purina Cat Chow), and later my daughter and I resorted to insects and fruit, trying to teach them to eat things found in nature, not cat food. They learned to fly in my spare bedroom; needless to say, what a mess that was! The whole event was an experience I remember with much joy and sadness. Joy because it was such a thrill to have these beautiful creatures in my house, gentle as pets; but, oh so sad, because I was advised by a professor at the University of Tennessee Veterinary School that the chances of raising them was extremely low, and that if I did, their chances of survival on their own was almost nonexistent. But raise them we did, and with much sadness released them after six weeks.

J.D. Tankersly, of Maurartown, VA, wistfully wishes for a Steinway grand piano and an organ on which to play Bach and Mendelssohn, but said, "just now I have to be satisfied with only a bluebird nest box." A pair of bluebirds had set up housekeeping in one of his boxes. Another pair came through the yard, "...they were a little larger than my bluebirds at the nest box. After resting on the roof of my house for one hour, the two flew west. Perhaps they are headed to WV or KY. They definitely are not from around here. They were not afraid of me. I hoped they would stay as they were truly great specimens." Maybe the "larger" bluebirds had been dining on the periodic cicadas with which the Eastern states were inundated in late May and June. This crop of gigantic insects managed to amaze, amuse and "terrorize" the populace, as well as to satiate the nestling birds everywhere. In one NABS headquarters incident, I was startled to realize one of the giant bugs had landed in my hair! NABS staff member **Glenda Pollack** coolly plucked it out though **Michele Wright** said it made a nice "barrette"!

Cheryl Lord of nearby Waldorf, MD, called to say that a female bluebird had claimed a four-compartment, old-timey nest box. The bluebird built nests in three out of four of the cavities, then laid eggs in two nests and divided her incubation time between them. A male wren built a dummy nest in the fourth cavity but didn't attract a female.

Alton Wetmore, of Stow, OH, wrote in June, "Please put up with a 94 year stroke victim who is very lonely since just losing a lovely wife. An article on bluebirds interested me. In early 1900s in northern Ohio I had wren and bluebird house and on 150 acre farm knew of eight bird nests in boxesSome nested three times a year. Saw

sparrows by 1926...trapped sparrows always. I saw one bluebird a few years ago, but my children have never seen one. I am very glad that someone is helping. ...Wish you and Dr. Zeleny every success." Also in June, my **Uncle Frank Dougherty** of Hazleton, PA, (my birthplace) celebrated his 100th birthday—with **Aunt Margaret** lovingly looking on. Maybe my hometown doesn't have bluebirds, but in the nearby town of Hegins, **David Hand** tells of results with his 20 boxes. "Five of my boxes have bluebirds, five have Tree Swallows, two are being used by chickadees, five by wrens (looking back on it I put three at good spots for wrens—close to wooded areas), one by sparrows and two aren't being used at all. I've been thinking about going to the NABS Annual Meeting, but I think I would feel out of place because I really don't know very much. I'm a very 'amateur amateur'." But that's how everyone started out, David!

Even bluebird GIANTS **Dick Tuttle**, **Art Aylesworth** and **Duncan Mackintosh** had to start somewhere! The Sunday, July 12 issue of *The Columbus (OH) Dispatch* said, "Thank a Tree Swallow if you're not bugged by mosquitos after the flood at Delaware State Park. Thank Dick Tuttle while you're at it. Only Mother Nature has done more for swallows and another insect-eater, bluebirds, than Tuttle. 'Earlier this year I had raised my 2,000th bluebird,' said Tuttle." As Dick coped with July floods he said, "At one point I was ready to go to Delaware State Park and get two of every species...."

Art of Ronan, MT, and **Duncan of Lethbridge, Alberta**, have been so successful through their Mountain Bluebird Trail group that *Montana Magazine's* June issue told of two pairs of Eastern Bluebirds sighted in Circle, MT. We're now convinced that East is East (ern Bluebird) and West is West (ern Bluebird) and MONTANA (Mountain Bluebird) is where they all meet! They'd all better watch out—the NABS headquarters MIGHT relocate—right in the state where all three bluebird species can be found!

Members who told me of their efforts to publicize NABS recently include the following: **Myra Swan**, of Ava, MD, participated in a radio call-in auction by offering NABS bluebird feeders. She sold a number of them, and publicized the Missouri State Bird (Eastern Bluebird) as well. **Joe D. Allen** of Clarksville, TN, wrote an article in the *Clarksville Leaf-Chronicle* which generated a number of inquiries for NABS material. **Bill Abbey** of Clemmons West also had a piece printed in the *Clemmons (NC) Courier*, which showed him checking his "field diary" on his 72 bluebird boxes in Tangle-

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Upper Midwest Bluebird Conference

Mary D. Janetatos

A cooperative meeting entitled the Upper Midwest Bluebird Conference was held on 19, 20 and 21 June in the Minneapolis suburb of Bloomington, Minnesota. Sponsoring organizations were Bluebird Recovery Program of Minnesota, Bluebird Restoration Association of Wisconsin, Bluebird Program of Iowa, Minnesota Dept. Natural Resources, Nongame Division, North American Bluebird Society.

The proceedings started with registration and field trips Friday morning, with a bluebird trail tour led by John Thompson along with a stop at the Richardson Nature Center. Dave Ahlgren provided a guided tour of the Woodlake Nature Center. At 1:00 p.m. Mary Ellen Vetter welcomed the group and the afternoon talks began.

The moderator for the afternoon was avid birdwatcher Father Bruce Walmering of the Benedictine Abbey at St. John's, Collegeville, MN. Barbara Walker, Director of Education and Public Relations of the Raptor Research and Rehabilitation Program with the University of Minnesota, spoke on "Birds of Prey." She appealed to bluebirders for objectivity regarding raptor predation on their trails. Wildlife Specialist Pamela Skoog Perry gave a presentation on Purple Martins.

Davy Newbauer, wildlife biologist at Carpenter Nature Center, discussed "Rehabilitation and Emergency Feeding of Bluebirds" which is a boon to the average bluebirder trying to rescue individual birds which have suffered some calamity. Pamela Perry presented ways of "Planning a Bluebird Workshop," something the Minnesota DNR has done so well. David Noetzel, Extension entomologist with the University of Minnesota, spoke on "Pesticide and Bird Life." He issued a warning that the bluebirder should heed regarding trails maintained near areas of high pesticide usage.

Next came a description of "The Natural Resource Programs of Minnesota, Iowa, and Wisconsin" given

the following representatives: Carol Henderson, Doug Reeves, and Harvey Halvorsen. Del Fisher described the role of the Dakota Wildlife Trust. The story unfolded of how the owner of a chain of North Dakota radio stations cooperated with announcer Del Fisher who made a spot public service announcement telling how listeners could participate in bluebird conservation. Local Boy Scout troops became involved which resulted in a great increase in the number of boxes and trails in the listening area.

Following a western buffet dinner Friday evening's activities culminated in an instructive, entertaining talk by Dr. Walter Breckenridge entitled "Wood Duck Ways." Dr. Breckenridge is Director Emeritus, Bell Museum of Natural History at the University of Minnesota and an excellent photographer-storyteller.

Saturday morning's moderator, Bruce Cords, an avid bluebirder, introduced Kathy Heidel, senior naturalist at Lowry Nature Center, Hennepin Parks, who spoke on "Trapping and Banding Birds." Bruce then described for the Bluebird Recovery Program, which has seen so much success in the Midwest, "Starting a Bluebird Trail." Dave Ahlgren built upon Bruce Cord's talk by detailing in a fascinating way "The Peterson System." Andrew Nelson of the Bluebird Restoration Association of Wisconsin countered with "Back to Basics" wherein he utilized hilariously his expertise as an engineer and built several boxes of different designs in proportions resembling a raccoon's arm measurements vs. a human's arm measurements.

Dave Johnson, wildlife technician with the Minnesota DNR, gave an interesting presentation on "Barred Owls and Nest Boxes." Before lunch, "Starting a Bluebird Program" with local, state and federal cooperation was described by Dorene Scriven for Bluebird Recovery Program, Ernie Wendt for

Bluebird Restoration Association of Wisconsin, Blair Joseyn, Minnesota DNR and Larry Hood, Special Agent with the U.S. Fish and Wildlife Service.

Saturday afternoon's moderator Gerhard Alexis presented Boz Metzdorf and Mike Leitner who gave the premiere showing of the new Minnesota bluebird film "Jewels of Blue." This film highlights the prodigious bluebird conservation efforts of Dick Peterson. Dick and his wife, Vi, have been phenomenally successful in alerting their neighbors in Minnesota and nearby states to the bluebirds' decline in population and need for human help. Dick has devised the unique "Peterson box" which is now in widespread regional use. The film is a lovely one which will be well received. "The Iowa Kestrel Program" was presented by Doug Reeves, wildlife biologist with the Iowa Nongame DNR. Kevir Kotz, wildlife biologist with the Minnesota DOT, described how the "Bluebird Project, MN Dept. of Transportation" has implemented the placing of nesting boxes in fenceposts along the state's highways.

Staff biologist Jeff Burns of Robinsdale Farm and Garden spoke on the "Breeding Biology of Wrens," confirming the often-observed, annoying habits of wrens destroying the eggs and nestlings of bluebirds, chickadees, etc. Since wrens are native birds, it is illegal to destroy them, the audience was reminded by Special Agent Larry Hood. Dorene Scriven, founding member of the Bluebird Recovery Program of Minnesota, and NABS Founder Larry Zeleny fielded questions from the audience regarding "Predation Problems on the Bluebird Trail" and other topics of concern to bluebirders. There was a lively open discussion and idea exchange.

Following the banquet dinner, Professor "Avian Guano" surprised, delighted, entertained and educated the audience with environmentally oriented subject matter.

The meeting concluded on Sunday with field trips to the following areas: MN Valley Refuge and Bob Smith's Bluebird Trail led by John Thompson, Carlos Avery Biological Research Sta-

tion led by Carrol Henderson, Minnesota Zoo led by Nancy O'Connor, and a tour of the University of Minnesota Arboretum.

It was indeed a fascinating and stimulating event and, in fact, yielded program speakers for the NABS Tenth Annual Meeting scheduled for 18, 19 and 20 September at the National 4-H Center in Chevy Chase, MD. As always, it was heartening and encouraging to meet so many good and earnest people helping the beautiful "gems of blue"—our beloved *Sialia sialis*. ■

(BLUEBIRD TALES—continued from page 157)

wood Park. **Terra Studios** of Fayetteville, AK, continues to publicize the cause of bluebird conservation in their flyer which accompanies "Bluebird of Happiness" signed and dated collectibles designed and made by **Leo Ward**, master craftsman and co-owner with his wife, **Rita**. Television viewers in the Binghamton, NY, area were able to see a very effective interview by **David Rossi** of NABS President **Sadie Dorber**; and in the Washington, DC, area, **West Sarginson** visited Larry Zeleny's bluebird trail in Beltsville with NABS Founder Larry and Executive Director **Mary Janetos**. Other bluebirders who hold high the banner of bluebird conservation include **Tom Meyer**, of Bedford Hills, NY, of whom **Mrs. Peter Wood** of Cross Rivers, NY, wrote: "For three years now...Tom Meyer has been helping us establish a trail—he has given us many houses and shared his experiences with us...our fledglings tripled from last year (16 to 46)...just wanted you to know who is out there doing the work—around here it's Tom!" Tom himself sent us a newspaper article which pictured veteran bluebirder **Beresford Proctor's** marathon efforts in building over 3,000 masterfully crafted nest boxes in his home area of Mamaroneck, NY. Tom also shared with us a poem by **Diana Hunt Westa**, an 86-year-old beneficiary of Tom's and Beresford's efforts.

The First Bluebird

Heaven dropped a bit of blue from its sky
On a feathered back and wings,
And a rose reached up to touch a breast
With the glow a June day brings;
A breeze swept over the open fields
With a song for a sun-filled morn—
All these joined together in a union of love,
and thus the bluebird was born. ■

An Introduction

Adjusting for the distance
I focus on the bluebird
Who perches unnoticed by many
On the wire stretched overhead.

Once I was among the many
Not knowing of the prize awarded
To those who recognize the familiar song
And search the boughs expectantly.

Until one early morning
Just outside my kitchen window
The bluebird made his introduction
Into my innermost world.

He approached, getting my attention
Light blue, light blue
Fluttering momentarily, he departed,
Bright blue, bright blue.

Iva Daniels

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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.

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