Sialia

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The Quarterly Journal Of The North American Bluebird Society





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Cialia means bluebirds. Hence, the title of this fournal. It is the word which the Swedish scientist, Carolus Linnaeus (1707-1778), used to name the genus grouping for bluebirds, a subset within the thrush family (Turdidae). rechnically, sialia is the Latinized, neuter plural version of the Greek ward sialis, a noun meaning a "kind of bird." Since the Eastern Bluebird was the first bluebird he classified. Linnaeus gave it the species name, sialis. Therefore the scientific name for the Eastern Bluebird is Sialia sialis (pronounced see-owllee-an, see-ovyl-iss). Similarly, the Western Bluebird and Mountain Bluebird, the two other species within the genus, were named Sialia mexicana and Sialia currucoides (coo-roo-coydees) respectively, and their species names are descriptive of their locations. All three bluebirds are native only to the North American continent, although each inhabits different regions generally separated by the Rocky Mountains and by altitude preferences.

While the adult birds all show differing plumages, the young of all three species look remarably alike, prominently displaying spotted breasts and large white eye rings. This similarity in plumage was the principal reason the Society chose the juvenile 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 this theme will remind all about the plight of the bluebirds, and will stimulate actions which will allow this beautiful creature to prosper.

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Sialia

The Quarterly Journal **About Bluebirds**

Volume 2, Number 4 Autumn 1980 Pages 129-168

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Suzanne Pennell Turner

COVER

The cover artist is Jan Turner of Brandywine, Maryland. Her drawing is of three adult Eastern Bluebirds

SIALIA welcomes the submission of articles, artwork and photographs for publication. Although this journal is dedicated primarily to the bluebird, material relating to native cavity nesting species will also be considered. Manuscripts should be neatly typed and double spaced. All material submitted for publication is subject to editing or rewriting. Include a duplicate copy if you wish to proof the manuscript before publication. All manuscripts will be acknowledged. Black and white glossy photographs or negatives are preferred. Print the subject, names of any individuals pictured, photographer and return address on back of each photograph. Before preparing tables, graphs or other display material, please check with the editor about the requirements of our reproduction process. Art is welcome and should be in black penand-ink. The editor's address is 10617 Graeloch Road, Laurel, Maryland 20810.

Presidential Points

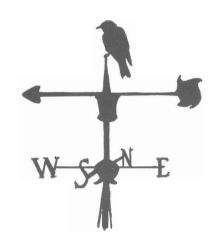
Marilyn Guerra

s we go to press, plans for the Third Annual Meeting of the North American Bluebird Society are being completed. As those who have attended the first and second meetings will testify, the excitement prevailing at these gatherings is legendary.

The first meeting was held at a Ramada Inn located at a Prince George's County (MD) exit off the Capital Beltway. About 65 people attended. Photographs, paintings, and many kinds of nestboxes adorned the lobby. The talks were stimulating; the discussions fast paced. Vincent Bauldry electrified the group with his controversial open-top box said to discourage House Sparrow usage.

Our second convention topped the first. Eighty people converged on the National Zoo property at Front Royal (VA). Again the discussions were lively and the talks informative. Bluebirds on the wing were seen between rain showers on the Sunday morning walk. This time the group was mesmerized by Laurance Sawyer's demonstration as he showed how he makes his unique hollow-log nestboxes and feeders.

For this year's meeting speakers are being obtained from across the continent. We may be privileged to hear from Bermuda's David Wingate on his use of the



Bauldry open-top nestbox. The lovely setting, Gunston Hall Plantation, should set a new high in ideal locations, especially because bluebirds abound all year. Early arrivers may join a guided walk on a dike in the nearby Mason Neck National Wildlife Refuge, an area with nesting Bald Eagles. See the enclosed flyer for latest details and GET THOSE RESERVATIONS IN.

The Society will miss its first Corresponding Secretary, Rev. Raymond Prybis, OMI. Father Ray has accepted pastoral duties at the Sacred Heart Church in Lowell, MA. Since he has always done a fine job both in the duties of his elected position and as our leader in prayer, we will surely miss him.

This is my final column as your President, and I must share my feelings as I take leave. This non-birder (but bluebird lover, I assure you) has been fascinated with the job of guiding the fledgling Society along the path charted so well by my predecessor, Bob Patterson. Heartfelt thanks go to the many dedicated volunteers who always get the job done.

(continued on page 168)

CAUSES OF DECLINE OF THE WESTERN BLUEBIRD IN OREGON'S WILLAMETTE VALLEY

Hubert W. Prescott

The causes of the decline of the Western Bluebird (Sialia mexicana) in Oregon's Willamette Valley are presumably the same as those in other major agricultural valleys of the Pacific Northwest, and are comparable to those reported for the Eastern Bluebird (S. sialis) in regions east of the Rockies. Possibly because of its more recent occurrence, the decline of the Western Bluebird is, as yet, considerably more limited in scope.

The most frequently cited causes for this decline are the following: 1 replacement of wooden fence posts with metal ones; 2. competition from the alien House Sparrow (Passer domesticus) and European Starling (Sturnus vulgaris); 3. extensive use of DDT and other chlorinated hydrocarbon pesticides; and 4. destruction of bluebird habitat by man.

Fence Posts

In many parts of the East wooden fence posts acquire cavities, either by decay or through woodpecker excavations. Some of those hollows provide nesting sites for bluebirds. That the number of such sites is (or was) significant is indicated by the commonly held view among eastern birders that the trend toward replacement of wooden fence posts with metal ones is an element contributing to the decline of bluebirds in the East. This

idea has caught on with some people in the Far West who suggest it as a possible factor in the major declines noted in both the Western Bluebird and the Mountain Bluebird (S. currucoldes) in portions of the region. Such an idea seems doubtful to this writer, however, because of the extreme scarcity of any cavities in wooden fence posts in those parts of the West where the declines have been noted. Both the Western Juniper (Juniperus occidentalis) and the Western Red Cedar (Thuja plicata) from which most wooden fence posts are made are extremely decay resistant. In contrast to Western Juniper which favors the drier areas of the West, Western Red Cedar favors the more humid areas and comprises practically all of the wooden fence posts of the Willamette Valley. After many years of service these posts may rot off under ground, but the wellventilated above ground portions remain solid and cavity-free almost indefinitely; therefore, the replacement of wooden fence posts with metal ones cannot be considered an important factor in the observed decline of the bluebird in the West.

House Sparrows and European Starlings

It is an almost indisputable fact that the House Sparrow has been an important factor in the decline of the Western Bluebird in the Willamette Valley. The European Starling might also have been a major influence except for the fact that it did not appear on the scene in large numbers until after the bluebird's decline was already well advanced. Now, however, one can say that the starling and the House Sparrow exist as impediments to any natural recovery of the bluebird's depleted numbers.

After the House Sparrow was successfully introduced in the East near the middle of the last century, it took almost forty years for it to work its way across the continent. The earliest record I located regarding its appearance in Oregon was contained in an old periodical, The Oregon Naturalist, whose publication has long since ceased. The reference was found under the heading: Report of the Third Annual Meeting of the N.O.A. (Northern Ornithological Association) in the January 1897 issue. The report states, "The English Sparrow pest has not a very strong hold in this state, not having, as yet, been reported outside of Portland. In this city there may be at present in the neighborhood of five hundred. Active measures here will at least suppress if not exterminate them." As time passed this optimistic appraisal changed. Gabrielson and Jewett (1940), in commenting on the House Sparrow, assert "This ubiquitous little foreigner, introduced by extended and painful effort.... is now well established and thoroughly at home throughout Oregon." This hardy little gamin has done a fantastic job of foreclosing to bluebirds the millions of otherwise possible nesting sites around man's buildings in metropolitan suburbs,

small towns, and rural areas. I believe that the House Sparrow is a major factor in the Western Bluebird's decline. It is surpassed only by man's impairment of bluebird's foraging and nesting habitat.

Successful introduction of the European Starling to this country came almost four decades after that of the House Sparrow. A fascinating account by Laycock (1966) tells of energetic but unsuccessful efforts to transplant the starling to half a dozen states between 1844 and the end of the century. Success was finally achieved in New York in 1890.

Half a century was to elapse after the 1890 transplant before starlings showed up in the Far West. Jewett (1945) reported the collection of a starling on 10 January 1942, near Tule Lake, California. The same observer (1946) stated that the first record of starlings in Oregon was made on 10 December 1943, when George M. Benson, Refuge Protector, reported seeing a single starling at Malheur Wildlife Refuge. On 24 December he shot the specimen; later the mounted skin was examined by Jewett. In the same year Wing reported the appearance of starlings in eastern Washington, Quaintance (1946) reported that he had identified a specimen of a starling shot by George L. Golay in northeastern Oregon.

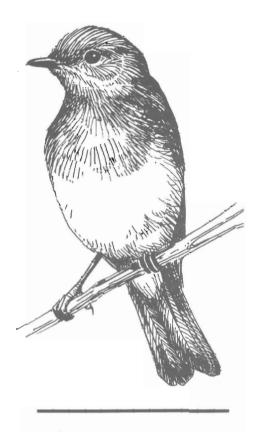
Even six years after the first sightings of starlings in Oregon and Washington, Quaintance (1949) indicates that these birds were being encountered only occasionally and even then as isolated individuals or as small flocks of a few birds. Within nine years this picture had changed. Chester A.

Kebbe (1958), field biologist for the Oregon State Fish and Game Commission, reported on the extension of the breeding range of starlings in Oregon as follows, "Observations during the spring of 1958 indicate the breeding range of the starling (Sturnis vulgaris) has now extended westward in Oregon to the Cascade Range. No starlings were detected by the writer in western Oregon during the breeding season even though they have been wintering in the Willamette Valley in large numbers in recent years." The milder winters of western Oregon may accounted for the movement of the starling to that area for overwintering.

Wildlife biologists predicted that the starling would eventually expand its range to include western Oregon and Washington. The prediction was accurate, and this writer had occasion to observe the event. The movement was gradual; it was not until the mid-1960's that starlings were nesting in large numbers in the Valley--too late by some fifteen years to have been a factor in the decline of the Western Bluebird.

Insecticides

Many people single out insecticides as bearing the major, if not sole, responsibility for the decline of the Western Bluebird. Some circumstantial evidence lends credence to this view. First, the decline seems to have coincided in large part with the post World War II period when numerous new insecticides were developed and came into widespread use. Second, the declines occurred in the major agricultural valleys of the Pacific



Northwest where the new insecticides were most generally and routinely applied.

During the Second World War the discovery of the remarkable effectiveness of DDT for control of certain insect pests led to the creation during the postwar period numerous other chemically related pesticides. These, along with DDT, opened a whole new frontier in the area of pest control. Neighborhoods for the first time were almost completely rid of flies and mosquitoes. Balanced against this, however, were reports of alleged kills of songbirds and other fauna. This detrimental aspect of the chemicals was described by Rachel Carson in her book Silent Spring (1962).

Under the circumstances it is understandable that many people saw insecticides as the paramount cause of the bluebird's decline. The difficulty with such a conclusion is that it leaves too many unanswered questions. For instance, why have so many other insectivorous birds which inhabit the same areas and. like the bluebirds, procure most of their food on or near the ground held their own? Cases in point are the American Robin (Turdus migratorius), Vesper Sparrow (Pooecetes gramineus). Savannah Sparrow (Passerculus sandwichensis). European Starling, Killdeer (Charadrius vociferus), and Brewer's Blackbird (Euphagus cyanocephalus). Other than the bluebird, the Western Meadowlark (Sturnella neglecta) is the only ground-level feeder to come to my attention that has undergone an appreciable decline in numbers in its former Willamette Valley habitat. Another question relating to the role of insecticides is the following: Why did bluebird declines of much greater scope occur in the eastern regions of continental United States and Canada at least twenty years before thay became evident in such limited areas of the West as the Willamette Valley of Oregon? With the exception of DDT, this was long before the suspect pesticides were even evolved in laboratories, and before the insecticidal properties of DDT itself were discovered and widely applied. And finally, now that the insecticides in question have been banned by law from general use for the past few years, why is it that the depressed bluebird populations have shown no signs of natural recovery as populations have invariably done following heavy depletion from natural causes?

Habitat Destruction

It is conceivable that white settlement in the Valley, beginning around the mid-1880's, actually created more good bluebird than it destroyed. Bluebirds require open or semi-open spaces for foraging and nesting. The initial impetus for clearing woodlands came from loggers closely followed by farmers. To the extent that clearing the land for farming opened up heavily wooded areas it made a considerable addition to the good bluebird habitat that already existed extensive prairies the Oregon White Oak (Quercus garryana) savannahs which characterized many parts of the Valley. The rough buildings erected during the early stages of farm development contained numerous knotholes, chinks, and crevices leading into spaces which afforded bluebird nestina sites. In the absence of nest site competition from the House Sparrow at that early date, the Valley may have experienced a remarkable boom in the bluebird population. This possibility is suggested, perhaps unintentionally, by Gabrielson and Jewett (1940) who write of the great abundance during that period of the Western Bluebird in western Oregon. There, they said, it "vies with the robin for first rank as a dooryard bird," and "a nest box will be more sure to attract this species than any other...." From my correspondence with the late Mr. Gabrielson in the fall of 1973, after he had retired to live in Virginia, it is obvious that the above observations applied to the Willamette Valley where Mr. Gabrielson had lived during much of his professional career, and where he and Mr. Jewett obtained many of their bluebird notes.

Now, as well as for the last three or four decades, the situation in the Willamette Valley, is the exact reverse of that expressed by Gabrielson and Jewett. What brought about this change? In the 1930's some crucial developments were taking place in the Valley beginning with the construction of a series of huge hydroelectric dams on the Columbia River. For the first time irrigation water was available on a large scale through the cheap electrical power these dams provided for pumping. In 1940 a flood control program was initiated. Prior to that time, because of the flood hazard, much of the Valley was limited to low-value crops; after 1940 there was a transition to highvalue row crops. The invention of the easily moveable sprinkler irrigation system also accelerated agricultural changes. By augmenting crop yields and making possible the large scale production of highvalue crops, these systems caused a substantial rise in land values. In turn the increased returns from the produce led to the conversion of much of the lower-value rough pasture and idle land (choice bluebird habitat) to irrigated highvalue crop land (poor bluebird habitat). Most of the remaining trees (a source of nesting cavities) were cleared from the Valley plains to make way for the more intensified crop production absorbed by an ever growing population and widely expanding markets.

In conclusion it seems probable that the transition from low-intensive to high-intensive agricultural practices in the Willamette Valley resulted in the destruction of prime bluebird habitat to the point where the Western Bluebird became virtually extinct on the vast expanse of the Valley plains, and persisted only as small population remnants on some of the higher hills within and bordering the Valley.

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CHICKADEES ON THE BLUEBIRD TRAIL

Lawrence Zeleny

ost people think of chickadees as winter birds since that is the time of year that they are the most commonly seen close to our homes. They are frequent visitors to our feeders, especially those that are kept well stocked with sunflower seed or suet. The lively antics and the saucy and acrobatic behavior of these tiny birds endear them to everyone. Few wild birds are a friendly and trusting as the chickadees, and with a little patience they can be persuaded to take nut meats or other goodies from our hands or even our lips.

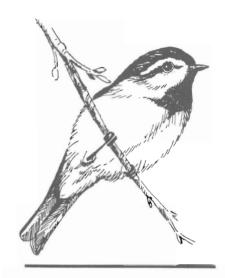
There are seven closely related species of chickadees in North America and one or more of them can be found in most parts of the continent.

The Black-capped Chickadee (Parus atricapillus) is the most widely distributed of the seven species and is found throughout most of the northern half of the United States including parts of Alaska, and in most of Canada.

The Carolina Chickadee (P. carolinensis) is found in the southeastern one-third of the United States.

The Mountain Chickadee (P. gambell) is confined to the western mountains of the United States and Canada.

The Mexican Chickadee (P. sclateri) as its name implies is primarily a Mexican species but its range extends northward into



southeastern Arizona and southwestern New Mexico.

The Boreal Chickadee (P. hudsonicus) is found throughout most of Canada and Alaska and in a few locations in the extreme northern part of the United States.

The Chestnut-backed Chickadee (P. rufescens) is found along the Pacific Coast from central California to Alaska.

The Gray-headed Chickadee (P. cinctus) is found only in the arctic regions. It is primarily an Asian species but is found also in northern Alaska and northwestern Canada close to the edges of the tundra.

Chickadees are essentially nonmigratory birds although some species occasionally wander south or to lower elevations in winter in search of food. The Boreal Chickadee, for example, is, on rare occasions, seen as far south as Maryland in winter.

AII chickadees are cavitynesting birds and all of them will probably use nesting boxes, although some of the species inhabit areas where nesting boxes have rarely, if ever, been set out. Chickadees may use old woodpecker holes or other natural cavities in trees or they may dig out their own nesting holes in rotted tree stumps or limbs. It is surprising how effective they are at this task considering their tiny bills. When nesting boxes are available chickadees are usually quite willing to take advantage of them, particularly in areas where dead trees are scarce.

Since chickadees prefer to nest in wooded areas they are usually not bothered by House Sparrows or starlings. Also openings only 1-1/16 inches in diameter are large enough for chickadees but not for the sparrows or starlings. Thus chickadees have a great advantage over bluebirds in dealing with foreign competitors.

In many parts of the continent chickadees are among the most common tenants of nesting boxes on some bluebird trails. This is true. of course, only where boxes are located close to the edges of wooded areas. This type of habitat is often quite acceptable to both bluebirds and chickadees. Competition between bluebirds and chickadees for nesting boxes may be quite keen but, to the best of my knowledge, neither of these birds will resort to the House Sparrow's tactics of destroying the eggs or nestlings of the other species. Competition between these birds on bluebird trails need not be a serious problem. The answer is simply to set out more boxes. Although neither bluebirds nor chickadees will commonly nest closer than about 100 yards from others of their kind, this territorial behavior does not apply between the two species. Bluebirds and chickadees will often build their nests and raise their families in peace and harmony within 25 feet of each other.

Chickadees take great pains in building their nests and the finished product is truly a work of art. The materials used vary considerably depending on their availability in different regions but typically consist of mosses, fine plant fibers. and animal hairs. Combings from the family dog are eagerly accepted by chickadees as nesting material. At one time we had a chickadee nest made entirely of hair from our poodles. A neighbor once hung her expensive fur coat on her clothesline to air, but hurriedly took it down when my wife called to tell her that our chickadees were busily pulling out hairs from the coat for their nest.

Some people do not realize that it is often possible to enjoy chickadees in their yards throughout most of the year by continuing to supply them with a small amount of food during at least the spring months and by providing nesting boxes for their use. Chickadees seem quite willing to nest close to our houses if we have a few trees in the yard, and they will often nest considerably closer to congested areas of towns and cities than will bluebirds.

Rustic nesting boxes made

from hollowed-out logs or from rough slabs of wood with the bark on are usually considered the best for chickadees since they resemble so closely their natural nesting places. In my experience ordinary nesting boxes made of smooth or rough wood, painted or unpainted, are equally acceptable. Boxes of the same style and dimensions as bluebird boxes are fine for chickadees. Boxes with floors smaller than 4 x 4 inches are not recommended for these small birds since they often have large broods.

Chickadees nest in the early spring and normally have only one brood. Broods of as many as nine are not unusual.

Chickadees are quite secretive about their nesting activities and often have nearly full grown young in a nesting box before anyone is aware of their presence. During the nesting season they rarely alight on or near their nesting box, nor do they cling to the outside of the entrance hole before entering. Instead they fly from a distance directly to and through the opening seemingly at top speed, and one wonders how they can possibly avoid crashing into the back of the box!

A person monitoring his first chickadee nest may be in for a big surprise, especially if he looks at the nest daily. He may watch the newly built nest for some time waiting for the first egg to be laid. Then suddenly seven or eight eggs will be found in the nest that had appeared to be empty the day before. Could the female have laid all of those eggs in a single day? The answer is no. She laid only one egg a day like most birds, but she carefully covered each egg with soft nesting

material so that no prying eyes could see it. Then when the clutch was complete she uncovered all of her eggs so she could start to incubate them.

Chickadee eggs usually hatch after 11 or 12 days of incubation and the nestlings commonly remain in the nest for 16 or 17 days. When they leave the nest they are practically full grown and, except for their somewhat shorter tails, they look almost exactly like their parents. They fly remarkably well on their first attempt and almost always reach a tree or shrub where they are relatively safe from predators.

A few chickadee nests should be considered a welcome and interesting addition to any bluebird trail. Since these birds are early nesters and have only one brood during the season, the nesting boxes they use will be available to the bluebirds for their second broods. On one monitoring tour of my bluebird trail I knew that the brood of Carolina Chickadees that had been in one of my boxes the previous week would have flown. I therefore planned to remove the nest so that the box would be ready for any pluebirds that needed it. But when I opened the box I was amazed to see four bluebird eggs in the chickadee nest that had been vacated. The cup of the beautiful nest of moss and animal hair had been very carefully enlarged and fashioned to fit the body of the female bluebird, but no new nesting material had been added. One of the joys of operating a bluebird trail is the ever present chance of suddenly discovering something something that neither you nor anyone else has ever seen before! This was one of those occasions.

DID FIRE ANTS DESTROY TWO BROODS OF BLUEBIRDS?

George A. Hurst

The imported fire ant (Solenopsis saevissima var. richteri) was accidentally introduced into the southern United States from Brazil in the mid-1930's. This ant, which has spread over nine states from North Carolina to Texas, is very common in Mississippi. Several extensive and costly programs have been used unsuccessfully to eradicate the fire ant

The purpose of this note is to report the possible loss of two broods of Eastern Bluebirds (Sialia sialis) to fire ants in Mississippi. The first case occurred in a standard bluebird nesting box on a cedar post near my house which is 5 miles east of Starkville (Oktibbeha County). The nest was completed on 30 March 1979, and the fifth egg was laid on 9 April. The five nestlings were in good condition on 25 April, and the female was seen near the nest on that date. When the nest was revisited on 28 April, the nest and nestlings were literally covered by thousands of fire ants. The nestlings were dead, but intact, and all huddled together in a circle. The ants had begun feeding on the nestlings as patches of skin and muscle were missing. A steady stream of fire ants was entering and leaving the nesting box. A recently constructed fire ant mound was located 14 inches from the base of the nesting box post. I had noticed and disturbed a fire ant mound about 10 feet from the post earlier in March.



The second case occurred on a bluebird study area in a young pine plantation, 3 miles south of Longview (Oktibbeha County). The nesting box (2" hole, 16 x 8 x 8") had been used successfully earlier in the year, producing five bluebirds on 19 May 1979. A second nesting began in July and four bluebirds hatched on 25 July. The four nestlings were doing fine on 27 July and the female was seen at the nest site. When the nesting box was visited on 31 July. the nest and nestling remains were covered by fire ants. Most of the nestlings' bodies had been eaten by the ants. A steady stream of fire ants was entering and leaving the nest. The ants had built a new mound about four to five inches high around the base of the creosote post to which the nesting box was attached. The mound was not present when the site was visited on 27 July.

Whether the fire ants were responsible for killing the bluebird nestlings before eating them is not known. It is possible that in both cases the nestlings had been abandoned (due to loss of a parent bird) or had died from unknown causes before the ants "attacked" the nestlings. The evidence is circumstantial, but I believe that in

(continued on page 168)

BLUEBIRD PRESERVATION IN SOUTHWESTERN MANITOBA 1960-1980

Norah Lane

B luebird preservation in this part of Canada started with the nature study group, The Brandon Junior Birders, founded in 1958 by John and Norah Lane, Brandon, Manitoba, Canada, In 1959 John Lane had a special vision in mind--a project wherein his club could aid in restoring the fast declining population of the Eastern and Mountain Bluebirds. He had not seen a nesting pair of bluebirds for 30 years and none of the boys had ever seen a bluebird. John explained that the scarcity of bluebirds was due to a lack of nesting cavities. His challenge to the boys was simple: Build and set out nest boxes so that we can BRING BACK THE BLUEBIRDS.

How eagerly those lads responded. In 1960 they set out their first boxes. By 1962 they saw their first bluebirds as four nest boxes were occupied by Eastern Bluebirds and fifteen boxes by Mountain Bluebirds. The year 1963 saw a total of 749 nesting boxes erected with numbers and locations recorded; 34 of the boxes were occupied by Eastern Bluebirds while 36 contained Mountain Bluebirds.

This success stimulated greater efforts. Each year new members were added to the club so that by 1974 the membership through the years had totaled over 200 boys.

Dedicated helpers built most of the nest boxes allowing the Juniors and their leader more time for field work. When the lines became extended, volunteers from outlying areas assisted in maintaining and monitoring the boxes.

Banding bluebirds had begun in 1970. In order to learn their migratory habits John Lane had obtained a banding permit from the Canadian Wildlife Service through the B.J.Hales Museum of Natural History, Brandon, University. Between 1970 and 1974 inclusive he banded a total of 12,462 bluebirds (mostly juveniles). These included 10,433 Mountain, 1975 Eastern, and 54 hybrids.

Annual reports giving highlights and population counts have been published each year in the **Blue Jay**, a publication of the Saskatchewan Natural History Society. This fall, 1980, the twentieth annual report will be compiled.

Since the death of John Lane in 1975 a growing number of volunteer helpers, The Friends of the Bluebirds, willingly look after the nestlines in the vicinity of their homes. This group, which includes eight Junior Birders, numbered 90 members in 1979.

Since the start of the project in 1959 a total of 5051 nest boxes have been set out, but many of this total are not now in place due to the effects of time, weather, and interference. A number of nestlines are not being checked due to a lack of personnel.

A multi-faceted study of our nestlines has been initiated by Dr. Richard C. Rounds, Brandon University, and is being done by Hugh Munro, B.S., Brandon University. A note by Dr. Rounds in this issue of **Sialia** offers further explanation.

Spring and fall meetings of The Friends of the Bluebirds are held at the home of the co-ordinator, Mrs. Norah Lane, where all records are kept along with the topographical maps on which bluebird trails are marked. An exchange of experiences and discussion of relative merits of boxes and placement continues through the afternoon.

Following our next meeting in September 1980, an up-to-date report will be compiled. So far, verbal reports indicate an increase in bluebirds over last year.

1701 Lorne Avenue Brandon, Manitoba Canada R7A OW2

Bluebird Research on Canadian Prairies

A major research effort concerning both Mountain and Eastern Bluebirds began this year in southern Manitoba. Using the nest box system and extensive data files initiated by the late Dr. John Lane, the multifaceted program will continue for several years. Volunteer monitoring by the Friends of the Bluebirds organization is an integral part of the project and is coordinated by Mrs. Norah Lane.

The first stage includes ecological and physical classification of 2000 box sites, along the lines of that recommended by the North American Bluebird Society, but modified to fit local conditions. All data is being computerized and will be correlated to use data from 1980 and as many past years as records allow. The major emphasis is on habitat selection. The results will form an M.S. thesis by Hugh L.

Munro through the University of Manitoba. His supervisor, and the director of other research efforts, is Dr. Richard C. Rounds of Brandon University.

Future projects will include behavioral studies, clutch and brood sizes and success, hybridization, and possibly food studies. One paper on fertility in albinistic eggs for Mountain Bluebirds has already been submitted for publication, and a review of cross-breeding is in progress. It is hoped that future theses and a renewal of banding can begin in 1981. Readers of **Stalla** will be informed of efforts and results of studies in the future.

Dr. Richard C. Rounds Associate Professor Brandon University Brandon, Manitoba Canada R7A 6A9

QUESTION CORNER

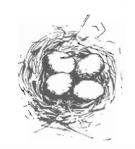
Lawrence Zeleny

Why do "my" bluebird parents lead their fledglings away from the vicinity of the nesting box? Your book indicates that they fly to nearby trees and remain there well off the ground for several days. The young bluebirds I have watched do not stay near the box; in fact, once they fledge I rarely see them again.

Susan E. Carter Kennett Square, Pennsylvania

The movement of young bluebirds after they leave the nest is not always predictable. They usually remain for a time in the general vicinity but not necessarily in the immediate vicinity of the nest in which they were raised.

Since suitable nesting sites for bluebirds are scarce these are often not in the areas where the food supply is greatest. Thus the adult birds may have to travel some distance to obtain food for the nestlings. As soon as the young birds can fly it appears that the parent birds 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 near the nesting site.



Is the bluebird compatible with the Purple Martins I have in my yard?

Jerry P. Keenan Brandon, Mississippi

Bluebirds sometimes occupy one of the compartments of a martin house before the martins arrive in the spring. This usually results in a conflict when the martins arrive. On rare occasions both bluebirds and martins have been known to nest in a martin house at the same time.

If a bluebird nesting box is available nearby the bluebirds will usually use it instead of the martin house, and the two species will raise their families as close neighbors and in perfect harmony.

The only place I would be able to mount a bluebird box would be against my house which is built of cement block. Is this location feasible?

Gunther S. Carr Tamarac, Florida

Bluebirds sometimes nest in nesting boxes attached to the sides of houses, although they prefer to be at a little distance from houses.

In your area I would suggest that the box be located on the east or north side of the house to minimize the chance of overheating.

OUR SUCCESS STORY

Jess and Elva Brinkerhoff

Twelve years ago as we were driving through Bickleton, Washington, seventy miles from our home in Richland, we saw a bluebird. It brought us to a sudden stop. Even after the bird had flown from our view we were reluctant to move. It was the first bluebird we had seen in twenty-seven years.

That incident took place in March 1968 which was near the beginning of the nesting season. We knew bluebirds needed an enclosure in which to nest. We found a clean, though rusty, gallon fruit can. With a screwdriver and hammer we made a round hole in the solid end. We mounted the can with the open end against the trunk of a pine tree at the edge of a clearing. Our project had begun.

We drove home determined to try to increase the bluebird population. By scrounging plywood we built six bird houses painting the roofs blue and the sides white because those were the colors that we had on hand. We took the boxes to Bickleton in May and asked mounting permission of the first farmer we met at Johnson's Ranch. Assured that the farmers would approve, we went down the highway placing boxes on fence posts. The first house was quickly occupied and has produced two or three broods of bluebirds each year since. Later visits that summer disclosed

that not all of the boxes contained nests; some of the houses had even disappeared. This disappointed us so much that we did not put up any new boxes the following year. The third year we decided to try again. Eight houses were erected in April. A week after mounting we went back to check them. Although we found bluebirds at all of the sites, some birds appeared to be frustrated. They fluttered around the houses. poked their heads in, and then flew away. The entrances seemed to be too small so we borrowed a key-hole saw from the Wilsons at the Bickleton Hardware Store in order to enlarge the holes. Then we stood aside while the birds now went easily in and out. Since then we have made the entrance hole 15/8 inches. It may be that many of the Mountain and Western Bluebirds are slightly larger than the Eastern thus necessitating a hole larger than 11/2 inches.

Competition from other species is not a problem. We avoid farm buildings where House Sparrows dwell. Around our home the European Starlings prefer secluded spots so our bird houses sit on top of posts in the open for all to see.

In the early years we found that the bluebirds seemed reluctant to nest in boxes positioned in a single long line. They seemed to prefer an arrangement like this ...



Now we have boxes mounted each quarter mile on all cross roads within an area of 150 square miles. Many farmers ask for nesting boxes to put along their inner fence lines. Most of them prefer our boxes thinking that they will be more successful in attracting bluebirds than using those that they make themselves. Bluebirds seem to recognize our houses from the air. Often when birds see us take a box from the car and carry it to a post they are already fluttering around our heads while we nail it on.

Mr. Herlugson, a college student from Washington State University at Pullman, received a grant to study "our" bluebirds. He built a few nesting boxes from plywood similar to NABS' standard boxes leaving them a natural color. Early in the spring some were placed near ours, sometimes on the same posts. He found that the bluebirds preferred ours. That could be because they were familiar with ours or because the entrance holes in his boxes were 11/2 inches and may have been too small for some bluebirds. He trapped and banded over one thousand females on three roads leading out of Bickleton. He found some boxes in which the same female returned for three successive years.

Because we must drive seventy miles to begin our monitoring we do not keep a card file. Due to the number of houses we maintain we clean them out only once a year. Sometimes when early snow has prevented us from cleaning out all old nests in the fall, we find that bluebirds have built nests over the old ones before we are able to reach them in the spring. We check the boxes in April, June, and August to make sure bluebirds are occupying them. It is not uncommon to find three nests in a house in a single season. The floor of each house is 5½ x 7 inches. Perhaps this makes a second nest less crowded than in a square box.

It takes us four days of hard work to clean out, repair and paint the boxes. We take our camp trailer in the spring and fall so that we can work longer days. Each spring we replace houses that have been pried off of posts and removed.

When we clean out the old nests it is evident that new nests have been built over old ones. Any unhatched eggs have been rolled out of the nest and have fallen to the house floor. The number of unhatched eggs we find is very small and dead nestlings are seldom found. We have recorded only three dead adult birds. All were in the same house; two in one year and one another year. Only two boxes have been taken over by squirrels. Those houses were located in trees. We honor all creatures, men or mice -bluebirds more than mice, but we do not deny mice the use of a house for the winter. We would not evict live baby mice but would simply erect another box on the next post for the bluebirds

One day we saw a pair of frantic bluebirds flying around a closed drill. We stopped, opened the drill, and discovered a nest with five dead nestlings. The wind had, no doubt, blown the lid closed. We left the lid open so that the adults could see that the little ones were dead and then put a new house on a nearby post. They accepted it the following day. Gary Powers postponed finishing his irrigation system because a pair of bluebirds had built a nest in the end of the pipe. Everyone in Bickleton loves the bluebirds and is grateful to us for helping to bring them back. Every year we put boxes a couple of miles closer to Richland so perhaps in about thirty-five more years....

We long to see a repetition of the sight Mrs. Wilson and a friend witnessed. They were returning home from Goldendale one glorious October day. A large flock of bluebirds had gathered prior to migration. The birds came in for a landing in a swale between two hills. Mrs. Wilson said the whole ground was blue, as was the air, with the birds circling, rising, landing, and greeting. The ladies stopped in order to make some kind of count. They mentally blocked off portions of the flock and estimated that there had to be more than a thousand birds. That fall they saw two other similar but smaller flocks.

Let us share with you the placing of our last two houses this spring. We had saved them to replace two on the highway which had been pried off and taken. On our way to the sites we saw six bluebirds but there were only two houses in sight so we felt a house was needed right there. The birds were to the right of our selected post. As Jess set the house on the post the male flew directly to it even though the entrance was on the opposite side. He fluttered in the air briefly, then

circled to the front. Jess continued nailing the box to the post. As he walked back to the car the female joined the male in claiming the house.

Now we had just one house left. We continued a half mile farther and saw a pair of bluebirds sitting on a fence wire. We decided to set the last box on a nearby post. If they took it immediately we would nail it on. No sooner said than done. The birds instantly came to life. Jess' back was not even turned before the female was there. She was too excited to even land on the house or fence and wasn't willing to move more than two feet to call the male who was watching three posts away. Moving quickly closer, one post at a time, he joined her. We had to brush them out of the way to nail the house onto the post. That marked the 790th nesting box we had donated and mounted.

We have steadily increased the number of bluebird boxes. During the past five years we have built more than one hundred each year and still never have enough. Although there were almost no bluebirds here when we started our project, the bluebird population is so great now that we cannot keep up with it; there is always a line waiting for new houses. We are calling for help and hope that people of the area will pitch in and build boxes.

And what has happened to the single fruit can that was our initial effort? It is still on the pine tree and presently houses a family of Flying Squirrels.

703 Smith Ave. Richland, WA 99352

CHICKADEE

The friendly little chickadee
Is busy, busy as can be.
He whistles, chatters, all the day,
And, in between, you'll hear him say,
"Chick-a-dee! Chick-a-dee-dee-dee!"

He's full of mischief as he sings,
And over, under, branches swings
This sassy, restless little bird;
I watch, entranced, without a word.

Beetles, grubs and bugs he swallows,
Gathered from the limbs and hollows;
I never <u>saw</u> such energy,
Except in one small chickadee.
"Chick-a-dee! Chick-a-dee-dee-dee!"

Katharine M. Braun

A LITTLE BIRD IS GONE

A little bird is gone.
Still, there are so many left to fill the
Air with flight and song, I will forget before
Too long the way it flew with wings formed from
A tiny bit of summer sky. The modest
Song it sang as though it did not know
It was a joy for me to hear and see.
A trace of autumn rested on its breast.
And when its blue had turned to gray against
The dying light of day, I knew it by
Its flight there in the field.

I know, too, that
Another summer day will come and other
Birds with skyblue wings will thrill me as this
One. By then, I won't recall at all how
Its leaving saddened me and left me feeling
Just a little bit alone. But she sits
Each day now warming her skyblue eggs and
The little bird. It's gone.

Carol Ann Lantz

Profile:

R.B. LAYTON

Mississippi Dynamo

Mary D. Janetatos

hen Reber Layton takes on a project he does so with gusto. Sialia readers have seen a shining example of this in Mr. Layton's own account of "The Jackson Bluebird Project" (2:99-102). His perception of the problems bluebirds face in securing nesting sites coupled with his organizational genius came together in a project which resulted in a bonanza both for Mississippi bluebirds and for the two sponsoring groups, the Jackson Audubon Society and the North American Bluebird Society.

Here at NABS headquarters we were blessed with a visit by Reber and his wife Gray Layton in May 1980. They had been leisurely touring and dropped in on us. Several of us were able to become acquainted with the cordial couple.

Reber and Gray Oldham Layton are both natives of Mississippi. Reber grew up in and near Jackson, Mississippi, and spent some time as a child on his grandparents' farm. It was here that his lifelong interest in birds took root. One incident which stands out in his memory was the nesting of both Purple Martins and bluebirds in a single martin house. This must have been prophetic of Reber's later activities in the conservation of both species. His love of birds led to his long time

membership in and support of the Jackson Audubon Society which is a chapter of the National Audubon Society.

The following episode provides insight into Reber's professional success as an educator. When "new math" appeared on the scene in the early 1960's, R.B., who was then Assistant Superintendent of Schools, became aware of the perplexity of parents resulting from the new approach to that old bugaboo, math. In order to help them he wrote a book entitled New Math for Parents, It was patterned on a programmed learning approach with the reader mastering each portion before proceeding to the next. The school system provided all the parents with a copy of the book. As its benefits became apparent the superintendent gave Reber permission to publish the book. This was done by a local publisher. Eventually 10,000 copies were sold nationwide.

The math book experience demonstrated to Reber the "ease" of writing a book, so he immediately set to work on a second, **The Purple Martin**. The manuscript was rejected by commercial publishing companies. Undaunted, R.B. simply set up his own company: Nature Books Publishers, Inc. He

advertises his titles in gift and bird catalogues and book stores. The list has grown and includes another NABS offering: 30 Birds That Will Build in Bird Houses.

Gray Layton's home town of Kosciusko is representative of the rural character of the Magnolia State. Gray loved the whole world around her and expressed this appreciation through art. After studying that subject she secured a teaching position in Jackson. The principal introduced the new art teacher to a young man in the mathematics department named Reber Boyce Layton. Their friendship led to marriage, a union now in its forty-first year. Their only child is Dr. Bentley Layton, Associate Professor of New Testament, at Yale University's Department of Religious Studies.

Gray Layton continues to pursue her artistic interests with periodic shows in Mississippi of her abstract, semi-abstract, and nature paintings. She, of course, shares the activities and travels of Reber's retirement years.

Now that Reber has retired, he and Gray enjoy their home which overlooks a small lake in suburban Jackson. There is time for swimming in the lake where they can birdwatch while lolling in the water. No, they don't wear contact binoculars. I get the feeling that perhaps the birds swoop in very close in order to "human watch" this floating pair.

Since the bluebird scarcity is as prevalent in Jackson as elsewhere, the Layton's bird homes attract mainly Purple Martins. Hollowed gourds mounted on tall poles in their yard as well as that of their

neighbors provide housing for a populous colony of the gregarious martins.

All who have played landlord to these avian tenants have observed the excited antics of the juvenile birds. Sometimes their avrations result in a disastrous tumble out of the nest before nature has "firmed up" their wings. When the young bird is thus separated from its nest it is often left to die because the parent bird is not aware of its location. Observing this led to a solution devised by Reber. He places "fallout shelters" beneath the main colony and carefully sets any fallen nestling there to be fed. These individual are gourds hollowed out and mounted near the main colony as needed. Reber is now providing his neighbors with these supplemental martin aids.

Reber's enthusiasm for bluebirds has carried help for them statewide. Working with Dr. George Hurst in a coordinated effort the following groups were enlisted to aid the bluebird throughout Mississippi: Mississippi State Extension Service, 4-H groups, Boy and Girl Scouts, and the Soil Conservation Service.

R.B.Layton's love for the martins and bluebirds and his inspired insight into their problems shows hope for their future. In their gracious practice of Southern hospitality toward native birds in need of homes, the Laytons beautifully display the quality we've seen in other pioneers active in bluebird conservation. With a continent-wide network of similar enthusiasts we hope that bluebirds will once again be the "blue robin" seen in our springtime yards.

STOVE OWNER'S ALERT

Wood Heaters Pose Peril for Bluebirds

The increasing number of wood burning heaters throughout the nation is presenting yet another peril for bluebirds and other species as they become trapped in the heater or exhaust pipe.

On 13 April 1980, upon entering the family room, I heard a scratching sound coming from the wood heater. It was a female blue-bird struggling in the exhaust pipe at its junction with the heater. The bird was removed, apparently unharmed, and released outside.

On 12 May, a female Prothonotary Warbler entered the chimney pipe and heater. It escaped into the house through the heater door which had been left open. This bird was also released, but it suffered a leg injury in the mishap.

The birds could have entered the chimney in search of a nesting cavity or a roosting location. While some birds will be found and released, many others might be trapped and die in unattended heaters--or at the very least may suffer injuries.

Numerous bluebirds were destroyed in past decades under similar circumstances in tobacco sheds that had exhaust pipes. Today wood burning heaters with pipes and spark retarder caps are far more numerous and widespread than tobacco sheds.

I suggest that immediate steps be taken by bluebird conservationists and the North American Bluebird Society to prevent the loss of bluebirds. First, the public should be notified through the mass media of the dangers of the pipes. Second, manufacturers of the pipes, heaters, and caps should be contacted to determine what can be done to modify these apparatuses to prevent birds from entering the pipes/heaters. --- George A. Hurst, Dept. Wildlife & Fisheries, Mississippi State University, Mississippi State, MS 39762.

Editor's Note: President Marilyn Guerra has appointed Dr. Hurst to chair a committee which will explore ways to reduce this bluebird hazard. Board member Jack Finch has already assisted George in this matter.

USING NESTS TO RECRUIT BLUEBIRDERS

Richard M. Tuttle

are trees in late autumn expose numerous nests to inspection by the curious, but the homes of cavity nesters remain hidden within dead limbs, snags, and den trees. Bluebird trail operators are privileged to witness much of the breeding cycle in otherwise hidden nests while checking their boxes. Often individuals who join trail operators on monitoring trips become so enthusiastic that they start trails of their own. But how can new bluebirders be recruited without escorting them along a bluebird trail? Fortunately, one answer is a simple one: Put used nests into showcases so that the public can see them.

Philosophy

The nesting cycle of a protected species must never be interrupted or terminated for the sake of a display. A true conservationist will observe this basic ethic of bluebirding.

Legal Aspects

It is illegal to disrupt or end the nesting of any bluebird trail species except the House Sparrow. Furthermore, it is also illegal to eggs, or possess used nests. feathers without a permit. After permits have been issued, nests, by law, must be deposited with an educational, scientific, or governmental institution. Readers who wish to collect nests for public display should locate a depository for the collection before making application for permits. In the United States both state and federal

scientific collecting permits must be applied for and awarded before used nests can be collected. Contact the nearest Fish and Wildlife Service District Law Enforcement Office to make application. Canadian law is slightly different. All permits pertaining to migratory birds are issued by the Canadian Wildlife Service. Both a federal and scientific permit are required. Application must be made to the regional office nearest the collecting point Permits for nonmigratory species are issued on a provincial level.

Since permits are not easily obtained in either the United States or Canada, there is another possible way to proceed. Sometimes nests can be collected by a cooperative professional naturalist or biologist in your area who already has the necessary permits.

Collecting Procedures

Three steps are necessary in order to collect a nest in the best possible condition. First, the front or side of the nesting box must be opened or, better yet, removed.

Second, a piece of poster board cut almost to the width of the box must be slid under the nest like a spatula. Cereal box cardboard works well. If the nest box measures 5 x 5 inches a spatula measuring 4 7/8 x 6 inches works well. For 4 x 4 inch boxes a 3 7/8 x 6 inch piece of cardboard would be satisfactory. The idea is to push the poster board spatula under the nest until it strikes the back or opposite side of the box.

A free hand is placed on top of the nest to steady it while a screwdriver is pushed under the spatula. The screwdriver is lifted to remove the nest while it is sandwiched between the spatula and a hand.

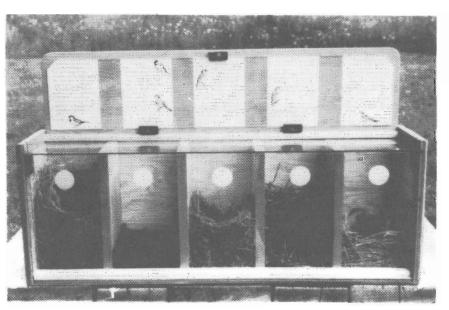
Third, the nest should be put into a storage stall until it can be placed in a showcase. A nesting box which lacks a top and front or any box of the same dimensions may be used to temporarily hold the nest. A plastic bag should be placed over the storage stall to keep the nest dust free.

Showcase Construction

Most bluebirders use nesting boxes with one of the following floor dimensions: 4 x 4 inch, 4½ x 4½ inch, or 5 x 5 inch. Plans and dimensions for a five stall multinest showcase are given in Tables I and II. The letter "W" is used to represent the width of the nesting box floor.

Of course the depth of nesting boxes varies but most are made from either 1 x 10 inch stock (3/4 x 91/4 inch) or 1 x 12 inch stock (3/4 x 11¼ inch). Table I represents for boxes dimensions approximately 91/4 inches high. Table II represents dimensions of the back, sides, stall partitions, and front glass for a showcase displaying nests from boxes approximately 111/4 inches high. For standard NABS boxes described in the Parade article, "Where Have All the Bluebirds Gone?" use the 4 x 4 inch column in Table I

Precut all pieces from plywood stock. Glue and nail the back to the bottom. Add the partitions and the sides. Use extra fine emery cloth in a "shoeshine rag" motion to sand sharp corners from the glass. After sanding, slide the front glass into-



A nest showcase display contains nests, illustrations, and information. Left to right: House Sparrow, Carolina Chickadee, Eastern Bluebird, House Wren, and Tree Swallow.

Photograph by Richard M. Tuttle

place and then the top glass. Nail and glue the one-half inch quarter round after a snug fit with the glass has been assured. Attach other items and then REMOVE THE GLASS. Sand and apply the desired finish. After a proper drying time, use the spatula technique to carefully implant and position each nest. Reinstall the glass and add the trim.

Masking tape is used to represent entrance holes. Stick a strip of 1½ inch tape to wax paper. Use a compass to draw 1½ inch circles, then cut them out with scissors. Peel the wax paper from the tape and stick the 1½ inch disks to the inside surface of the front glass to represent entrance hole locations.

A multinest showcase isn't the only way to display nests in a nature center. The Columbus Metropolitan Parks in Columbus, Ohio, use replica nesting boxes with Plexiglas fronts and tops which display used nests quite effectively. Single scattered boxes in a display area can accommodate more viewers than can a single showcase.

Nest Displays

The nests of bluebirds, chickadees, titmice, and House Wrens need little cleaning before they can be displayed. Dried remnant droppings can be removed easily by hand or with a pair of tweezers. Pyrethrin spray can be used to rid wren nests of lice and mites.

The greatest challenge lies with preparing a used swallow's nest for display. Few things are more beautiful than a newly built Tree Swallow's nest, but a used nest is most unpleasant with its caked droppings and lice infestation.

Reconstruction may be the only answer. Old feathers and droppings are removed and new chicken, duck, or goose feathers are used to construct a presentable top layer.

Typical trail stories can easily be told with the display of multiple layered nests. Competition and/or poor box placement can be illustrated with a wren's stick nest built on top of a bluebird's grass nest. Nest succession can be shown with a bluebird nest built on top of a chickadee's. An old paper wasp's nest can be accurately glued in a display box to illustrate the need for wasp control. The display may be valuable by illustrating the difference between the nest of a bluebird and that of a House Sparrow.

Infertile eggs can be prepared for display by first poking a hole in the egg with a sharp object such as an awl. A medicine dropper or straw is used to remove the contents from the egg. Infertile eggs usually are not numerous so it pays to practice preparation techniques using House Sparrow eggs.

Replica egg clutches are also a possibility. A talented wood carver might be able to carve and paint a convincing clutch of eggs. Field guides can provide accurate dimensions, colors, and patterns.

Captions can be typed on plain 4 x 6 inch index cards to explain portions of the life history of each nest builder as well as the habitat it occupies on the trail. Perhaps local artists or art students can provide illustrations. Good illustrations and accurate facts are essential to a convincing nest display. A useful reference book is A Field Guide to Birds' Nests by Hal H. Harrison.

A nest showcase is just one technique by which bluebirders can be recruited. If nature centers use a showcase in conjunction with the NABS Slide Program and monitor an interpretive bluebird trail during the nesting season, new bluebirders

will be enlisted and bluebird trails will continue to spring up across North America.

NABS Education Chairman 295 W. Central Ave. Delaware, OH 45015

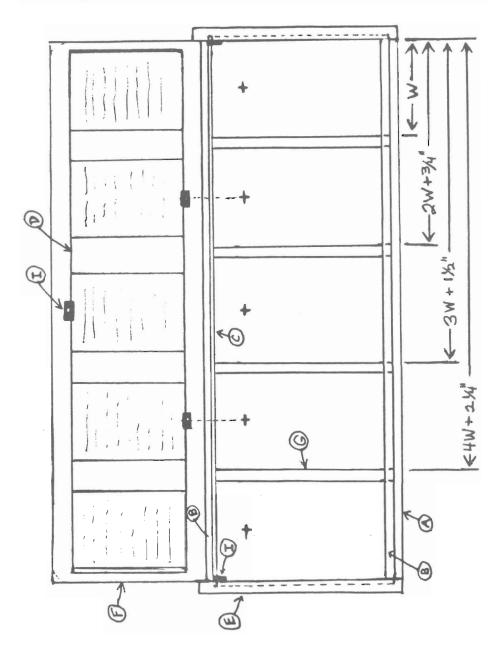


Table I - Boxes 91/4" High

BOTTOM DIMENSIONS (W x W)

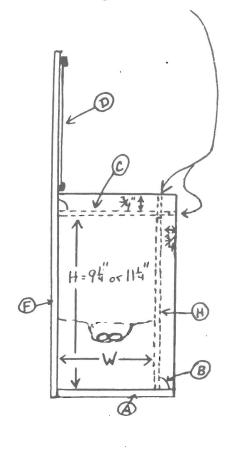
,						
	PART	Pcs.	FORMULAS	4" × 4"	4½" × 4½"	.5" x 5"
4	Bottem	_	1/2 × (5W+3) × (W+1)	½" x 23" x 5"	12" x 2512" x 512"	1/2" x 28" x 6"
Ω	%"- quarter round	2	5W + 3"	23"	25%"	28"
O	Top Glass	-	(5W+3%) × (W+1/2)	23%" x 4½"	25%" x 5"	28%" × 5½"
۵	Panel Glass	-	6" × (5W+2)	6" x 22"	6" × 24%"	£₹ × .,9
Ш	Side	2	¾" × (WH) × 10¾"	¾" x 5" x 10¾"	3/4" x 51/2" x 10%"	34" × 6" × 1034"
tu.	Back	-	1/2" × (5W+3) × 181/4"	₩" x 23" җ 18¼"	½" × 25½" × 18¼"	½" x 28" x 18¼"
9 .	Partitions	4	3/4" × W × 9/4"	34" X 4" X 9%"	%" x 4½" x 9¼"	34" × 5" × 914"
I	Frent Glass	-	(5W+3¾) × 9½	2336" x 916"	25%" × 91⁄6"	28¾" × 9¼"
	Giass Holder	ည	3/8" × 3/4" × 11/4"	Notched to hold gla	Notched to hold glass, Held by a screw 34" long.	

Table II - Boxes 1111/4" High

x W)	5" x 5"	¾" × 6" × 12¾"	½" x 28" x 20¼"	%"×5"×11%"	28%" × 11%"
BOTTOM DIMENSIONS (W x W)	4½" × 4½"	¾" x 5½" x 12¾"	½" x 25½" x 20¼"	%" x 4½" x 11¼"	25%" × 11%"
BOTTON	4" × 4"	%" x 5" x 12%"	½" x 23" x 20¼"	%" x 4" x 111/4"	23%" x 111%"
FORMULAS		%" x (W+1) x 12%"	½" x (5W+3) x 20¼"	%" x W x 11%"	(5Wx3%) x 11%"
Pcs.		2	-	4	-
PART		Side	Back	Partitions	Front Glass
		ш	IL	ű	I

Scale: 1 cm = 1 inch

3"wide x 4" deep slot for glass



H x W = @

Diagram and tables by Richard M. Tuttle

BLUEBIRDS HAVE A FRIEND IN NEW JERSEY

Junius W. Birchard

n February 26, 1977, the New York **Times** carried an article from the Department of Conservation in Albany, New York, about the shortage of nesting sites for bluebirds. This reminded me of the 1920's when I was growing up in Warren, Pennsylvania (home of well-known bluebirder William Highhouse). We had bluebirds nesting in our box every spring and our family was always interested in observing birds and other wildlife.

After careers in business and education (as a French teacher) I retired although I still work parttime as a school custodian. I decided to put up some bluepird boxes in the eight miles between my home and the school. Two old clippings from my garden file gave me more information and specifications, and the Hackettstown Free Public Library came through with Lawrence Zeleny's book The Bluebird. I found a local source for 3/4 inch rough-sawn white cedar lumber, made a few boxes, and put them out. Shortly thereafter the principal of our Green Township Schools provided funds for the purchase of enough lumber for the 50 children in the two second grade classes to build bird boxes to take home. The Sussex Vo-Tech carpentry shop agreed to cut the boards into the seven necessary parts, thus providing experience for the students at no cost for labor. As of this writing they have cut lumber for 3800 kits!

A circular to the principals of the other elementary schools in Sussex County and a display at the teacher resource center resulted in a boom in business - and in my losses. I had been charging \$1.50 per kit even though I was losing money so the price was raised to \$2.00. Recent increases in the cost of lumber have caused that price to rise once again to the present \$2.50. My venture was Birchard Non-Profit Enterprises, Inc. Publicity has been excellent as the local papers are always interested in publishing pictures of activities in the schools. The local radio station also provided some publicity, particularly when Tree Swallows nested in a box under their transmitting tower.

In the elementary schools children are supposed to become aware of their environment as well as begin to learn the use of simple tools. I present a program for this educational level that combines these aims. First I talk for half an hour or so. When I have an especially receptive audience I sing a couple of songs such as "Blue Skies" to indicate the association bluebirders have with happiness. I then show several dozen slides I have taken of the nesting cycle. Finally, I put together a nest box kit to show the students how it is done. The kits are then distributed and noisily assembled, often with the help of a few visiting parents. I furnish the galvanized nails and the single screw for each box. Sometimes the schools furnish the money for the kits and, in other cases, the children bring it in. I haven't kept an exact count, but I have spoken at over 50 schools in the area and have had to turn down requests from those I judge to be too distant. In addition, I've given similar programs for Scouts, 4-H clubs, conservation and outdoor organizations, and women's groups.

With 3800 boxes out I do not know where all are located. Although I inveigh against the House Sparrow I am sure some people don't clean out the nests of that species. Although I feel that eventually this program will bring the bluebird back to northwestern New Jersey, the population is still low. We do, however, have a large population of native cavity nesting birds that use the boxes. Regular nesters include Tree Swallows, chickadees, titmice, nuthatches, and wrens. I have now begun erecting boxes in pairs so that the Tree Swallows can nest in one box and bluebirds can use the other.

My program is intended to help the bluebirds, but, most of all, I am trying to help the children of Warren and Sussex counties appreciate and develop a lifelong interest in wildlife.

207 E. Valley View St. Hackettstown, NJ 07840



PLANTINGS FOR BLUEBIRDS AND OTHER WILDLIFE

George N. Grant

The chart in this issue covers many of the fruit or berry producing plantings that were listed in the Summer 1979 issue of Slalla. Most of these are important to the survival of bluebirds as well as many other species of birds and wildlife.

This chart is designed to help those who would like to start their own wildlife planting program utilizing basically native or "wild" plantings. In this way landscape plants can occupy a dual role providing beauty as well as food and cover for wildlife.

Of the 52 plantings included in this chart nearly all grow on our property, either naturally or as introduced plants. Some of our plantings are still too small to bear appreciable amounts of fruit. Others fruit heavily so that there is a steady profusion of berries or fruit ripening from late June until frost. In the chart special emphasis is placed on plants that hold their fruit until the following spring to aid wintering birds and early spring migrants.

It is hoped that this chart will act as a guide in explaining the key criteria for each plant. Like most charts there is a great deal of latitude in it for it is impossible to completely and accurately cover each specific plant in detail.

There may be considerable variation from the ratings given in the chart. This is caused by personal preference, the bias of reference books, and the variability of each plant. Local growing conditions such as soil, moisture, competition, etc. must be considered as well as regional influences. Given these variables it is easy to see why a specific plant does not fall into a stereotype of fixed or known conditions. It is intended that this chart indicate the average condition for each plant.

If you become serious in your enthusiasm for wildlife plantings then I would strongly advise further reading regarding particular plants that interest you. It could mean the difference between success and failure for a chart can give only minimal information about each plant.

An excellent book from which much of the information for this chart was derived and thus much credit must be given is **Trees, Shrubs and Vines for Attracting Birds** by Richard M. DeGraaf and Gretchin M. Witman, University of Mass. Press, Amherst, 1979.

The term for whether a plant is native or escaped is often misleading. Many of our so-called "native" plants were actually introduced into this country during the seventeenth and eighteenth centuries and subsequently escaped from cultivation.

In the near future the Society will have available a slide program illustrating more than 70 plant species with value both for wildlife and for landscaping.

RD#3, Box 153B Canastota, NY 13032

HARDINESS ZONES

This hardiness map was developed by the Agricultural Research Service of the U.S. Dept. of Agriculture. The hardiness zones 1-10 are based on the average annual minimum temperature for each zone and divide the United States and Canada into areas where specific plants are winter hardy. Many factors such as altitude, length of growing season, exposure, moisture, soil types, etc., can create variations within zones, but adhering to your specific zone will generally give you the best results.

ZONE 1	BELOW -50°	ZONE 6	-10° TO	0°
ZONE 2	-50° TO -40°	ZONE 7	0° TO 1	00
ZONE 3	-40° TO -30°	ZONE 8	10° TO 2	0
ZONE 4	-30° TO -20°	ZONE 9	20° TO 3	0
ZONE 5	-20° TO -10°	ZONE 10	30° TO 4	0

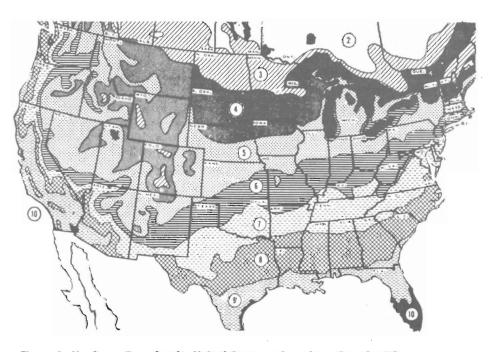


Figure 1. Hardiness Zone for the United States and southern Canada. When no zones are mentioned with the plant description, plants are hardy anywhere. If a zone is given, it indicates that plants are hardy within the zone and in all areas south of it.

	KEY
	X - Depends on Species
Tree - Shrub - Vine	V-S-T
Size	A - 1-3'; B - 3-6'; C - 6-10'; D - 10-15'; E - 15-20'; F - 20-30'; G - 30-50'; H - 50-80'; I over 80'
Native - Escaped - Cultivated	N - Native; E - Escaped from Cultivation; C - Cultivated
Hardiness Zone	Zones 1-10
Deciduous or Evergreen	D or E
Landscape Value	E - Excellent; G - Good; N - Naturalizing
Specimen or Mass	S or M or E - Either
Flower Display	E - Excellent; F - Fair; P - Poor
Flower Color	White; Red; Pink; Yellow; Greenish
Fruit Color	Bk - Black; B - Blue; R - Red; O - Orange; P - Purple;
	W - White
Fruit Size	A=1/8"; B=1/4"; C=3/8"; D=1/2"; E=5/8" or larger
Fruit Display	E - Excellent; G - Good; P - Poor
Fruiting Period	Jan = 1; Dec = 12. Ex. 9-3 = Sept to Mar
Fall Foliage	E - Excellent; G - Good; N - Not Effective
Light Requirement	1 - Full Sun; 2 - Part Sun; 3 - Shade
Soil Requirement	A - Wet; B - Normal Garden; C - Dry; D - Dry Poor
Soil pH	A - Acid; B - Mildly Acid; C - Mildly Alkaline
Plant Sex	A - M+F on Separate Plants; B - M+F on Same Plant; C -Either of Above
Plant Source	A - Most Nurseries; B - Some Nurseries; C - Specialized Nurseries; D - Dig from Wild
Method of Transplanting	A - Dormant with Soil Ball; B - Dormant with Bare Roots when Small; D - Difficult
Propagation	A - Seeds; B - Stem Cuttings; C - Root Cuttings; D - Suckers; E - Difficult;
	Refer to Reference
Bluebird Use	A - Preferred; B - Limited; C - Minimal
Wildlife Value	E - Excellent; G - Good; F - Fair; P - Poor
Winter Survival Food	E - Excellent; G - Good; P - Poor

Winter Survival Food	G	۵	ш	۵	۵	۵	ш	ш	Q
Wildlife Value	L	ш	g	ш	ш	¥.	ш	ш	g
Bluebird Use	ω	œ	æ	<	⋖	æ	O	∢	ш
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Pethod of Transplanting	AB	∢	m	AB	⋖	∢	AB	∢	4
Plant Source	æ	8	ВСБ	CD	AD	⋖	∢	∢	BCD
Right Sex	ABC	∢	4	В	ω	æ	В	∢	∢
Hq lio8	BC	AB	BC	BC	œ	BC	BC	AB	AB
Soil Requirement	Θ	AB	A-D	BCD	В	BC	BC	8	AB
Light Requirement	1,2	1,2	1,2	-	1,2	-	-	2	73
Fall Foliage	ш	g	g	z	ш	z	z	z	z
Period Period	1-6	9-11	9-4	9-11	9-12	×272	6-3	6-3	9-12
Fruit Display	ш	g	ш	۵	ш	ш	ш	ш	ш
əsi2 fiu17	8	۵	O	O	۵	всх	В	O	æ
Fruit Color	œ	Œ	0/R	OP	Œ	Œ	Œ	œ	œ
Flower Color	>	>	G	ŋ	W X	WPX	3	3	≥
Flower Display	ш	L	۵	۵	ш	×	ш	۵	۵
Specimen or Mass	Σ	ш	ш	S	S	ш	S	S	Σ
randscape Value	g	Q	G	G	ш	ш	ш	ш	ш
Deciduous or Evergreen	۵	۵	۵	۵	۵	×	۵	ш	۵
Hardiness Zone	S	4	~	4	တ	4-6X	Ω	9	ო
Mative, Escaped, Cultivated	z	Z	z	z	z	O	Z	z	Z
əziZ	BC	CD	Į.	g	Œ	ACX	Œ	Ø	O
Tree, Shrub, Vine	S	Ø	>	۴	⊢	S	۴	⊢	S
	Red Chokeberry Aronia arbutifolia	Spicebush Lindera benzoin	Bittersweet Celastrus scandens	American Hackberry Celtis occidentalis	Flowering Dogwood Cornus florida	Small-leaved Cotoneaster Cotoneaster sp.	Washington Hawthorn Crataegus phaenopyrum	American Holly llex opaca	Common Winterberry Nex verticillata

(Chart will be completed in the next issue.)

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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:

Thank you very much for the new print size. I really enjoyed Spring 1980 SIALIA from cover to cover - no eye strain.

George Boesl Toms River, New Jersey

Dear Mr. Boesl:

Glad you're enjoying **Slalla**. We'll try to make each issue readable from "cover to cover"

Dear Editor:

I have been a bluebirder just two years and have found the information in the journal to be very helpful. I would like to offer one bit of significant information regarding bluebirding nesting success.

The chickadee, titmouse, and nuthatch have proven to be serious competitors for

bluebird boxes. I have observed their habit of nesting early thus depriving the bluebird of a suitable box. In addition they are very persistent, especially the chickadee. I have watched them win the battle with the bluebird because of their maneuverability. In three cases this spring when these birds nested and were evicted, bluebirds nested immediately in all three of the boxes. They must be considered a detrimental factor in bluebird conservation.

I wanted to make the convention this past winter but I had a conflict of schedule. I hope to make it this year.

R.E.Garriss Raleigh, North Carolina

Dear Mr. Garriss:

How lucky you are to have birds like nuthatches and chickadees competing for your bluebird boxes - usually people are complaining about House Sparrows and wrens. The birds you enumerated are protected in both the United States and Canada. It is illegal to disturb their

nests or eggs. After they finish their nesting cycle immediately clean the box and a bluebird will still have time to nest.

The species you mention are especially fond of open woods and wood edges which means the bluebirds might benefit from your moving boxes to more open areas. Or leave the boxes where you have erected them and put up extras. Larry Zeleny's article about chickadees in this issue should be helpful to you.

NABS especially promotes the cause of the bluebird, but it is also a proponent of aiding other native cavity nesting species for, to varying degrees, they all face similar problems.

I hope you will be able to attend the convention this year. It is being held in a beautiful location.

Dear Editor:

Re: "Natural Perches for Bluebirds" SIALIA 2: 108-109.

Tom Betts in the account of his experience of erecting perches for bluebirds has rightly stressed the need that bluebirds have for hunt perch sites. No other single need or requirement for attracting bluebirds within an ideal habitat is more important in my opinion. This is assuming that the habitat you have selected is as free as possible of House Sparrows and flying squirrels.

Over fifty years ago bud worms in tobacco were controlled by hand picking. The critical bud stage was reached in June which was when the worms did the most damage. Several old timers have reported to me that when they were boys their dads had them erect sticks about the tobacco fields to serve as perches for

bluebirds while they were hunting for bud worms.

This was before 1940 when tobacco farmers were still curing with the wood furnace. After 1947 bluebirds began to be trapped in the new pot type of oil burners having five or six inch smoke stacks. The wood furnace had had a 12 inch smoke stack and did not attract bluebirds. During the week of July 14, 1980, I talked to an old farmer near Pinetown, NC, who told me that he had removed as many as 50 bluebirds from one oll burner back in the early 1950'8.

With all the wood burners with their small smoke stacks going into homes today, are we to repeat this folly again?

Jack R. Finch Balley, North Carolina

Dear Mr. Finch:

It's good to have you underscore the usefulness of hunt perches. New bluebirders may not realize their importance.

The Society is anxious to prevent a repetition of the oil burner flue problem which was so devastating to the Eastern Bluebird population in the postwar years. With the direction and advice of you, George Hurst, and others who share a desire to find a solution to this problem, we can demonstrate that we are not condemned to repeat history.

Dear Editor:

At the Washington Cathedral Flower Mart this past May a friend of mine bought a bluebird box from the NABS' stall. He was very enthusiastic about getting a bluebird in this box which was going to be set up in his back yard. The only problem was that he lived two or three blocks from the Cathedral. He was dismayed to hear from me that bluebirds are rural birds and hadn't nested inside the Beltway within recent memory.

There are a couple of things which bother me about my friend's experience. First, I think that, when possible, the prospective purchaser of bluebird boxes should be discouraged if the boxes are going to be put up in an unsuitable area. He might be shown a printed information sheet of what constitutes good bluebird breeding habitat.

Second, we are not doing the bluebirds a favor (or any other native species for that matter) by putting up boxes which will most probably be occupied by House Sparrows, as would certainly have been the case of my friend. That is only defeating our purpose.

As a charter member I applaud NABS in its endeavors to assist the bluebirds, but I occasionally question the wisdom of the way the cause is promoted I'd venture to say that the overwhelming response to the cover story in PARADE magazine will, in all probability, result in a greater proliferation of House Sparrows than in a corresponding increase in bluebirds.

I should like to see NABS insist, as much as it reasonably could, on some sort of criteria for nesting bluebirds before it lends its assistance to anyone and everyone who wants to put up boxes anywhere and

everywhere. Otherwise we are not just to our cause.

Robert H. Hahn Washington, D.C.

Dear Mr. Hahn:

The concerns voiced in your letter are certainly valid.

It has been NABS' policy to include an information sheet with all nesting boxes sold. It describes, among other things, the correct habitat in which to place boxes. In this case the purchaser could have been questioned at the time of purchase about the proposed location of the box, but, since the vast majority of boxes are sold by mail, it is necessary to rely on printed material to explain location, height, possible problems, etc.

Not all individuals are willing to destroy House Sparrows nests if that species should take over a bluebird box. Since NABS cannot personally investigate nesting box sites (and people will buy, build, and erect boxes of all shapes and designs whether we approve or not) the Board has felt that widespread publicity along with education is the best way to help the bluebird.

With the cooperation of thousands of people there is the risk of raising some unwanted House Sparrows, but we hope that through continuing education most of those boxes will attract native cavity nesting species and many will be homes for bluebirds. Thus there is at least a possibility of bluebirds approaching their former abundance in certain localities. To do nothing or to be overly demanding about giving our approval might spell the eventual doom of the bluebird.

Because the problems that you raise are central to the philosophy of bluebird protection, perhaps the Board will wish to consider your ideas further.

BLUEBIRD TALES

Mary D. Janetatos

The best kept bluebird secret in the state of Maryland may be the large trail at the Aberdeen Proving Ground where the U.S.Army tests its offensive weapons. Game Warden Ellis Porter knows "secrets" that the Army never dreams of.

During a brief clear period in a rainy. June Larry Zeleny (NABS' Founder) and I visited Aberdeen and were greeted by Charter Member Wilson Ford and Ellis Porter. From them we learned the story of the longest known bluebird trail in Maryland.

Wilson Ford, now retired, spent his boyhood on Spesute Island which was acquired by the U.S. Army in 1918 for testing its weapons.

Because he was intimately familiar with the area and its wildlife. Ford realized that bluebirds and army materiel might coexist very nicely at the Proving Grounds. The property consists of approximately 88,000 acres with a variety of habitats. Among the wildlife found there are nesting Bald Eagles, Osprey, Prothonotary Warblers, Tree Swallows, numerous deer, and otter. With Game Warden Ellis Porter's sympathetic support, the Peregrine Falcon restoration is being carried out while, in collaboration with Wilson Ford, the bluebird population is being replenished.

In the early 1970's Wilson contacted Ellis Porter with a



question: Why not put bluebird nestboxes on the Proving Ground's vast acreage? "O.K.," replied Ellis, "you provide the nestboxes and I'll see that they're set out." Almost immediately Wilson appeared on Ellis' doorstep with about 100 boxes that he had made.

Over the years about 100 more have been added and set out by Youth Conservation Corps members making this the longest known bluebird trail in the state of Maryland. The number of bluebirds fledged is reported to Larry Zeleny annually, but, according to Ellis Porter, no Audubon Christmas Count is done at Aberdeen.

The Bowie Count which is located almost entirely in Prince Georges County (where the bluebird has been named the official county bird) has always boasted the highest bluebird count in the state during that tally. I fear that if Harford County birders ever penetrate Aberdeen during Christmas count time, Prince Georges would have to concede first place. This is only a guess, dear readers, and far be it from me to instigate a bluebird rivalry....

Speaking of Prince Georges County, Larry Zeleny and I also visited a state-owned property there--the Merkle Wildlife Management Area which is near Surrattsville. An existing bluebird trail is being refurbished by the naturalist staff. As we examined the area the need for more monitoring became evident. Some nest boxes showed a nest from this year built on top of last year's because the staff lacked time to clean them out. Inflation and cutbacks in government spending have caused some necessary tasks to go undone.

As plans proceed to encourage the county bird, the staff is appealing for local helpers to maintain the trail. Bluebirders in the area who would like to become involved in bluebird trail work should consider volunteering. (The area can be reached by exiting the Capital Beltway at Branch Ave., Rt. 5, East.) Call this office at 384-2798 or call Merkle directly at 953-2342.

Recently a letter came in from long time bluebirder Junius Birchard from Hackettstown, NJ, who needed to replenish his supply of our brochure "Where Have All The Bluebirds Gone?" His excellent efforts on behalf of the bluebird are highlighted elsewhere in this issue.

Another New Jersey correspondent was **John C. Sutton** who obtained an Eagle Scout award by constructing 20 nest boxes from the NABS plans. He then distributed the boxes throughout Warren County, NJ, and has obtained the agreement of the property owners to maintain them.

Fran Hanes of Utica, NY, wrote in early spring that her work as a teacher nearly went undone due to her busy time bluebirding. She manages to work bluebird facts into the classroom in the form of puzzles and word games and would gladly share them with others who might be interested. Fran gets people involved too. When a birding acquaintance retired from one career, she enlisted his services in presenting the bluebird slide show in the town near his trail.

Again in the Northeast, Lillian Files and Joyce Marinel have launched a campaign with "revolutionary" overtones. Their slogan is "From Concord to Concord." They see their territory as covering an area from Concord, NH, to Concord, MA. Lil and Joyce are just the type of "live-wire" bluebirders to rouse New England to the cause of saving this beautiful remnant of colonial times.

Meanwhile, a Parade article (see Sialia 2:80) reader, Steve Dent of Laporte, CO, saw his first bluebirds in early spring. He reported that a group of six brilliant male Mountain Bluebirds were together. He concluded that they probably needed nesting sites, so he built 25 nesting boxes from NABS plans. Four nesting pairs of Mountain Bluebirds raised 17 young in Steve's first foray into bluebirding. The total of other native species fledged reached 77!

And so it continues. Bluebirders everywhere are surging forth on a small scale or on a grand scale. All it takes to turn nonchalance into enthusiasm is to encounter the beautiful blue creatures. With that another bluebirder is created. Be they young or "seasoned," from the East, West, North, or South, they have finally found the bluebird of happiness.

SOCIETY RESEARCH COMMITTEE

The North American Bluebird Society Research Committee has been organized to include a geographical balance, with one member from each of three regions. The regions and their respective representatives are as follows:

EASTERN REGION

Paul Jung 12606 Memory Lane Bowie, MD 20715

MIDWEST REGION

Ray Adams Kalamazoo Nature Center 7000 N. Westnedge Kalamazoo, MI 49007

WESTERN REGION

Ben Pinkowski P.O. Box 308 New Town, ND 58763

Society members are urged to contact their regional representatives concerning matters of interest, including on-going and proposed research projects. The Committee is currently at work revising the nest card format with an eye toward computer storage and retrieval of the data. Suggestions are welcome.

(Fire Ants - continued from page 139)

both cases the fire ants "attacked" healthy, living bluebird nestlings. The parent bluebirds probably attempted to prevent the ants from reaching the nestlings, but abandoned the futile effort.

I do not suggest that another massive insecticide program be launched to help bluebirds or other wildlife. The cost to the environment would be too great. I do recommend that all fire ants and their mounds near bluebird nesting boxes be destroyed. The ants and their mounds can be destroyed by Diazinon or Chlorpyrifos, two readily obtainable insecticides which can be used as granules or as a spray.

Dept. of Wildlife and Fisheries Mississippi State University Mississippi State, MS 39762

(Points - continued from page 130)

My sincere gratitude is also expressed to Mary Janetatos, NABS' Executive Director, her tireless office staff, and to Jo Solem. Especially invaluable has been the inspiring guidance of Larry Zeleny, NABS' indomitable Founder.

I promise to be available to the next President, if needed. And I wish all of you "Many Bluebirds!"

Art Credits

Chuck Anderson: 157.
Jon Boone: 130, 163, 166.
Suzanne Pennell Turner: 133
Western Bluebird; 136
Mountain Chickadee; 142.

Drawings which are not attributed are copyright free art, not original to this journal.



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: Students (under 21) and Senior (over 60), \$7.50: Regular, \$10; Sustaining, \$30; Supporting, \$50; Contributing, \$100; Corporate, \$100; Donor, \$250. Amounts over \$5 are tax deductible.

