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

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

Anne T. Sturm

Many members of NABS have expressed a desire for a formal system of local and regional chapters. Bluebird enthusiasts have for a long time banded together locally to build and monitor nestbox trails, educate their communities, and share their common interest and experience. NABS had its roots in local bluebird committees so that really our Society's birth was the joining together of groups and individuals throughout North America.

A national organization is essential to carry on large projects (such as research) and to serve as a clearinghouse. The distribution of educational materials such as nestbox plans and trail advice can be better handled on the local level wherever possible thus saving postage as well as time. The Bluebird Recovery Committee of Minnesota and the Minnesota Department of Natural Resources have distributed over 3,000 brochures and nestbox plans at various workshops throughout that state. The NABS slide show was created by Dick Tuttle and the Education Committee and needs the Society for central distribution; however, it needs local support by individuals and groups to show it.

Exciting work is being done by dedicated local bluebird committees across the continent. The Friends of the Bluebirds help Norah Lane carry on the extensive work of the late John Lane in Brandon, Manitoba. The Indiana Bluebird Society and the Bluebird Society of Central New York are just a few of the many local groups that have decided to formalize a spontaneous reaction to the plight of the bluebird.

How can NABS' efforts best be coordinated with local organizations? Should they be formalized? If so, how can that be done without diluting our support from individual members whom we also need? The question is not whether there should be local groups or NABS. Both are vital to bluebird conservation. Indeed the question is whether NABS chapters should be organized or whether the relationship should remain informal.

Bluebird communication is a two-way street. Perhaps a local enthusiast in Dutton, Montana, joins NABS after hearing about bluebird conservation from a source such as The Mother Earth News. NABS informs this national member of the marvelous assistance available locally from the well-organized and experienced members of the Mountain Bluebird Trail. Sometimes the order is reversed. A bluebird convert might be made by the beautiful cover story on the Mountain Bluebird in the April issue of Montana Outdoors. An individual starts a trail with the assistance of the Mountain Bluebird Trail, but he is so enthusiastic that he wants more involvement and thus joins NABS in order to receive Sialia and find out what bluebirders in other areas are doing.

The board of the North American Bluebird Society would like to study the questions of chapters: 1. Should we have them? 2. What form should they take? 3. What would be the obligation and benefits? 4. What could NABS do for member organizations and, in turn, what could they do for NABS?

Our continuing need for dues and other forms of financial support is an important factor to consider. Publication costs for Sialia, brochures, nestbox plans, and research make our present dues support essential.

If you have had experience in this field, please share it with us. I want to know what interested individuals feel are the possibilities and pitfalls we need to consider in discussing the idea of member organizations.
Breeding Biology and Mortality of Western Bluebirds Near Corvallis, Oregon

Elsie Kollin Eltzroth

Before 1940 Western Bluebirds (Sialia mexicana) were considered a common songster of farms, fields and backyards in Oregon. In the mid '40's, the population began a steady decline. Use of pesticides resulted in a loss of important prey species. Removal of snags, decaying trees, and substitution of metal posts for wooden ones accelerated competition for natural nest cavities by other avian species.

The House Sparrow (Passer domesticus) and European Starling (Sturnus vulgaris) were considered prime factors in an earlier loss of the Eastern Bluebird (Sialia sialis). Only in the past decade have these two introduced species increased in number here in Oregon, to the point where they add another threat to the nesting opportunity for the bluebird. A reduction of habitat conducive to bluebird nesting may also be the result of an overall change in Willamette Valley agricultural practices. Small farms consisting of a variety of row crops and orchards gradually gave way to expansive acreages cultivated in grain and grass crops.

In the early '70's, birders and ornithologists began to express concern, and bluebird trails got their start. In 1976 Audubon Society of Corvallis joined other organizations in the Willamette Valley in an effort to increase the size of local bluebird populations. During the past seven years, approximately 160 nestboxes have been placed in what was considered ideal habitat within a 15 mile radius of Corvallis, most on private property.

Each year bluebird nestlings were banded with USFW bands, and I recorded information about nesting behavior and success which I hoped would provide a data base for detailed study of the Western Bluebird in our area.

Other species which have taken advantage of nestboxes on the Corvallis Trail are the following: Tree Swallow (Iridoprocne bicolor), Violet-green Swallow (Tachycineta thalassina), House Wren (Troglodytes aedon), White-breasted Nuthatch (Sitta carolinensis), and House Sparrow. One would expect the bluebirds in our area to have an advantage over the swallows since the bluebirds are permanent residents while the swallows return in March and April. This has not been the case even during the best of bluebird breeding seasons when the ratio of swallows to bluebirds was approximately two to one (Fig. 1).

Both swallow species and the bluebird are secondary cavity nesters and utilize the same habitat; therefore, competition for available nest sites becomes an intense activity although preferred prey and foraging techniques differ. The "flocking-in-flight" strategy of swallow species must have an intimidating effect on the bluebird, and combined with aggressive behavior which we have observed, drives some of the bluebirds elsewhere.

Although bluebird species have been re-established in impressive numbers in other sections of the U.S. and Canada, here in Corvallis there has been a very slow, moderate increase in the number of nesting attempts from 7
Figure 1. Comparison of nesting attempts between Western Bluebird and two species of swallows.

![Comparison of nesting attempts](image)

By eliminating questionable data, using 355 of the 665 eggs laid, I found that 34.4% hatched in 13 days and 53.0% hatched in 14 days (Table 2). This incubation time included day of hatch. Length of incubation was influenced by mate and nest attentiveness, weather, and possibly by number of eggs in the clutch. The clutch marked with the asterisk that took 18 days to hatch was attended by parents which were in less than prime physical condition. The female was heavily parasitized by an intestinal worm, *Plagiorhynchus formosus*; the male died of enteritis.

It was not unusual for bluebirds on this trail to leave the nest at 20 days of age, 25.5%; however, 40.9% of the time young fledged on the twenty-first day after hatching (Table 3). A substantial number, 13.5% remained until the twenty-second day. Earlier fledging occurred when weather was especially warm and natural prey was abundant, at nest sites where first brood juveniles were helpers, or where supplemental food (mealworms) was available in special feeders. Premature fledging occurred when nestlings older than anticipated were banded. The two latest fledging dates on record are 30 August 1977 and 28 August 1982.

![Rate of growth in terms of fledging age](image)
In an earlier issue of *Sialia:* 2(2) 67-71, I discussed a problem of endoparasitism which we considered detrimental to the breeding success of the Western Bluebird in this area. The acanthocephala, *P. formosus,* is carried by an isopod commonly called the pillbug (*Armadillidium vulgare*). The pillbug is a readily available prey after fall fruits and late berries, including mistletoe, have been depleted by wintering birds. In preparation for the breeding season, it would be natural for adult bluebirds to feed on the pillbug when preferred insects were scarce.

Our observations and method of monitoring provided us with data not

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<td></td>
<td>3</td>
<td></td>
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<td>13</td>
<td>7</td>
<td>37</td>
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<td>6</td>
<td>4</td>
<td>3</td>
<td>8</td>
<td>14</td>
<td>16</td>
<td>13</td>
<td>58</td>
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<td>7</td>
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<td>2</td>
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<td>9</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
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Total eggs: 38 43 120 130 184 150 665

Total nests: 7 8 21 24 34 29 123

Av. 5.4

<table>
<thead>
<tr>
<th>Days</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
</tr>
</thead>
<tbody>
<tr>
<td># Eggs</td>
<td>15</td>
<td>122</td>
<td>188</td>
<td>19</td>
<td>3+</td>
<td>4+</td>
<td>4+</td>
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<tr>
<td>%</td>
<td>4.2</td>
<td>34.4</td>
<td>53.0</td>
<td>4.4</td>
<td>.8</td>
<td>1.1</td>
<td>1.1</td>
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</tbody>
</table>

Day "1" follows day of last egg laid.
+ Clutch of 7; male disappeared, 4 nestlings died, 3 hand raised.
* Female died, young died, then male died also.

---

Table 1. Clutch Sizes for Western Bluebirds, Corvallis, Oregon.

Table 2. Western Bluebird 1977-1982, Length of Incubation Period—355 eggs.
Table 3. Western Bluebird 1977-1982, Age at Fledging—274 young.

<table>
<thead>
<tr>
<th>Day</th>
<th># fledged</th>
<th>%</th>
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<tbody>
<tr>
<td>16</td>
<td>3</td>
<td>1.1</td>
</tr>
<tr>
<td>17</td>
<td>10</td>
<td>3.7</td>
</tr>
<tr>
<td>18</td>
<td>14</td>
<td>5.1</td>
</tr>
<tr>
<td>19</td>
<td>14</td>
<td>5.1</td>
</tr>
<tr>
<td>20</td>
<td>70</td>
<td>25.5</td>
</tr>
<tr>
<td>21</td>
<td>112</td>
<td>40.9</td>
</tr>
<tr>
<td>22</td>
<td>37</td>
<td>13.5</td>
</tr>
<tr>
<td>23</td>
<td>70</td>
<td>25.5</td>
</tr>
</tbody>
</table>

Day "1" follows day of last egg hatched.

usually seen on other trails. We have made it a point to search for adult bluebirds reported missing. Some of the birds found had died as the result of predation, injury, disease, environmental factors, electrocution or reasons unknown, especially nestlings. Necropsies confirmed that 10 of 26 dead adults had been infested by the parasitic thorny-headed worm, *P. formosus*. One nestling and three fledglings were also found to contain the parasite.

As a result of parental deaths, disappearance or abandonment of the nest, we have hand raised 35 nestlings under a federal rehabilitation permit. Some were placed with foster broods to fledge; others were released at a later date.

In 1981, 104 nestlings were color-banded by Dr. Lloyda Thompson-Cowley. We were unable to determine the sex of 19; 40 were male, and 45 were female. During 1982 I was able to account for 12 of 14 color-banded males as distinct individuals (Table 4). This chart also includes all returns of older USFW banded birds from 1978 through 1982. Ten color-banded males were pair bonded or had mates with eggs in the nest; the mates were unbanded. One color-banded male nested with the single color-banded female shown on the chart. Five of the ten males were found dead during the season; a sixth was unmated.

In addition to the color-banded bluebirds, two males numbered with USFW bands only, also nested with unbanded mates. Seven unbanded pairs used nestboxes on the trail.

There is considerable interest as to whether imprinting on the natal site or nest influences subsequent nesting of second year bluebirds. Many studies substantiate the fact that age and prior success influence the return of breeding birds to territories or to nesting sites used in previous years. Pinkowski (1979) found that migratory Eastern Bluebirds banded as nestlings in Michigan, did not return to the natal site in any great number.

On the other hand, Herlugson (1981) studied migratory Mountain Bluebirds in Washington using two types of nestboxes. He concluded that second year males and females, breeding for the first time, did select the same type of box that housed their natal nest even though none returned to its natal territory. Evidently they had

Table 4. Returns of Previously Banded Western Bluebirds.

<table>
<thead>
<tr>
<th>No. fledged</th>
<th>male</th>
<th>female</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1977</td>
<td>18</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>1978</td>
<td>23</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>1979</td>
<td>52</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>1980</td>
<td>52</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>1981</td>
<td>104*</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>1982</td>
<td>83</td>
<td>3 + 14*</td>
<td>2 + 1*</td>
</tr>
</tbody>
</table>

* Color-banded

All graphs and tables by Elsie K. Eltzroth

Sialia, Summer 1983
been dispersed by earlier arriving older males and females.

Our observations of second year resident Western Bluebirds indicate, that on the Corvallis Trail, males did make an effort to return, some to the natal box itself, others to the natal area where they had spent some time as juveniles. The fact that 12.5% of the color-banded population nested or attempted to return in 1982 may indicate excessive mortality to those who parented them.

During the past seven years mortality has been quite evident. Detailed records of those birds found show that we have retrieved 26 adults, 16 of them male and 10 female. This figure probably represents a very small percentage of those that actually died.

The Corvallis Trail has not been without its unusual or exciting moments. We have evidence that a male bluebird, contrary to literature regarding nest building, constructed a nest in a day and a half following the death of his mate and young. We discovered an incomplete albino nestling among four normally feathered siblings. In 1982 we documented interspecific cooperation between bluebirds with young in the nest and Violet-green Swallows (in prep.). In addition to anecdotal information, this project has provided reliable data which I have presented here.

Acknowledgement

I would like to take this opportunity to thank my volunteers for their assistance and cooperation and Audubon Society of Corvallis for major funding of this project. Additional funds necessary to continue this study come from a state income tax refund "check-off" and are administered by the Oregon Department of Fish and Wildlife for non-game inventories and surveys.

A substantial portion of this paper was presented at the Fifth Annual Meeting of the North American Bluebird Society, 6 November 1982.

LITERATURE CITED:


3595 N.W. Roosevelt Dr.
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Review of Recent Literature
Theodore W. Gutzke and Ben Pinkowski

Tardell, J.H. and P.D. Doerr. 1982. Black Bear damage to bluebird nest boxes in southeastern North Carolina, Journal of Wildlife Management 46:244-246.—Black bear damage to bluebird nestboxes was documented during the summers of 1977 and 1978 at Camp Lejeune Marine Base, Onslow County, North Carolina. Boxes were situated in 1-4 year clearcuts, 4-8 year regenerated stands, and 40 year old stands of longleaf and loblolly pines. Eighteen bear incidents occurred in 1977 and 27 in 1978. Fourteen incidents resulted in the loss of 32 eggs and 29 nestlings, which were presumed eaten. Boxes in old tree stands were damaged significantly more often than those in other areas; however, bears did not seem to actively search out nestboxes.

Stauffer, D.F. and L.B. Best. 1982. Nest-site selection by cavity-nesting birds of riparian habitats in Iowa. Wilson Bulletin 94:329-337.—Factors influencing nest-site selection by 10 cavity nesting species are examined for a variety of riparian habitats in Guthrie County, Iowa. Primary (excavating) and secondary (non-excavating) species are considered separately, and the results suggest that the latter were not randomly choosing cavities abandoned by woodpeckers. The most important variable separating secondary cavity nesters was nest cavity height. European Starlings, Great Crested Flycatchers, and Red-headed and Red-bellied Woodpeckers chose notably similar nest sites.

Pinkowski, B.C. 1977. Foraging behavior of the Eastern Bluebird. Wilson Bulletin 89:404-414.—Observations during the nesting seasons of 1972 and 1973 in Macomb Co., Michigan, demonstrate that Eastern Bluebirds employ numerous foraging tactics to capture invertebrate food but rely most often on "dropping" (78.8%) during all seasons and weather conditions. No differences were noted between male and female foraging behavior. Height of ground cover altered feeding tactics; low vegetation was preferred. Availability of feeding perches in the spring may be a limiting factor to the species nesting distribution.

Willner, G.R., E. Gates and W.J. Devlin. 1983. Nest box use by cavity-nesting birds. American Midland Naturalist 109:194-201.—This study, conducted at the Carey Run Sanctuary, Garrett County, Maryland, examines 24 box and habitat variables for sites used by several species, particularly Eastern Bluebirds, Tree Swallows, and House Wrens. Bluebirds tended to use boxes where herb height was less than for other species and where distances to the nearest trees were intermediate compared with swallows and wrens. It is concluded the use of nestboxes by bluebirds can be enhanced by placing them in the correct habitat configuration.

Grubb, T.C., Jr. 1982. Downy Woodpecker sexes select different cavity sites: an experiment using artificial snags. Wilson Bulletin 94:577-579.—Artificial snags consisting of polystyrene ("bead board") cylinders 22.5 cm in diameter and painted dark brown were set out in central Ohio woodlots to examine roost cavity excavation by male and female Downy Woodpeckers. Females avoided the tallest snags and excavated farther down from the top than did males.
Cowbird Parasitism of Two House Wren Nests

Richard M. Tuttle

I unknowingly began to witness and record a case of cowbird parasitism on 25 May, 1978, as I monitored a trail of 21 bluebird nesting boxes south of Delaware, Ohio. The Ohio Wesleyan University Trail was in its second season. Although the trail has raised over 20 bluebirds yearly since 1977, over half of the boxes have been located in brushy fence rows favored by House Wrens (Troglodytes aedon). I used my penlight and machinist’s mirror to peer into box no. 9 and counted eight pinkish-brown eggs nestled in a cup of fine grasses supported by bulky sticks. In order to improve my 35 mm slide program, I decided to photograph the “perfect” wren nest. I removed the top from the nesting box and used a 5 x 6 inch mirror to take several exposures. Since the nest contained a large clutch of eggs, I decided to return frequently in order to sequentially record the progress of the wren family.

In anticipation of photographing the eggs during hatching, I returned ten days later to find a brown-dotted, grayish-white egg atop the wren eggs. Further inspection revealed seven wren eggs instead of the original eight. I concluded that a Brown-headed Cowbird (Molothrus ater) had parasitized the nest since these birds often either discard or eat one or more host eggs before or after they deposit one of their own. Warblers and other open nesters are their usual victims; cowbirds never make a nest of their own. The unusualness of a cowbird depositing its egg in a wren’s nest was surpassed only by the realization that the female had to squeeze through a 1½ inch hole to do so. (The diameter of the hole was confirmed later by rotating and attempting to insert poster board strips of 1½ inch, 1 9/16 inch, and 1 5/8 inch widths. The 1½ inch wide strip was the only one which passed through the entrance as it was rotated.)

Less than 15 minutes later, I peeked into box no. 13 and found a second cowbird egg. This time a cowbird had parasitized a clutch of six wren eggs which was now reduced to five. The two parasitized nests were 280 meters (306 yards) apart leading me to believe that the same cowbird female was responsible for both eggs.

I returned daily in an effort to photograph the hatching in the two nests. It took place in box no. 9 on 8 June, but was rather unsuccessful. The large cowbird egg had been on top of the clutch so that the female wren was supported high and away from her own eggs. Her warmth apparently reached only two of her eggs: one hatched successfully, the other egg showed only a few peck marks.

The cowbird chick in box no. 9 (hereafter CB-9) was definitely larger.
Box No. 9, 13 June 1978. The sixth day after hatching a large cowbird sits on top of its smaller wren sibling.

than the host nestling and noticeably orange—typical of new hatchlings of the blackbird family. The cowbird in box no. 13 (hereafter CB-13) had emerged one day earlier than CB-9. This female wren was more successful with her incubative duties than was the wren female in box no. 9 for, in this case, five wren nestlings competed for food and attention with CB-13.

As I returned daily to take photographs, I began to notice a contrast between the nest behavior of the wrens and the cowbirds. The contrast was first noticed when the young were six days old. When the nesting box was opened the young wrens always held their heads down and "played possum" which is typical of cavity nesters. Remaining motionless when potential predators are prowling about may be their best defense. The cowbirds, on the other hand, never "played possum" but, rather, stared into the mirror as I photographed them—behavior more typical of open nesters. Open nesters will "play possum" up to a point, but when danger is imminent, their best defense may be to flee to a new location. The alertness of the cowbirds increased as they matured; at eight days they were so restless that I feared that they would fledge prematurely. I checked the nests with cowbirds early on the tenth day. On the eleventh day both cowbirds were gone. Such a short nestling period (11 days) is too short for wrens or bluebirds, but some members of the blackbird family, such as cowbirds, flutter from the nest before they can actually fly. Like their blackbird cousins, these cowbird fledglings would be fed and protected by their adoptive parents until they could fly well on their own.

The wren nestlings were harmed by the cowbirds in several ways—possibly even as the cowbirds fledged. A wren may have fledged prematurely when CB-13 fledged. I checked box no. 13 before the cowbird departed and all five wren nestlings appeared to be healthy. One of the wrens

Box No. 9, 18 June 1978. By the eleventh day the wren is dominated completely as the cowbird nestling stands to peer at the author.
was absent from the nest the next day, but I cannot say that it fledged with the cowbird because I did not witness the departure of either bird. All four of the remaining wren nestlings fledged successfully after a normal nestling period of 15 days.

The only wren sibling of CB-9 was not as lucky as the nestlings in box no. 13. I checked box no. 9 on 18 June. The cowbird nestling typically peered upward and I assumed that the wren was hiding under the standing cowbird. I found the wren nestling lying on its back dead in the box the next day.

Since 1968, there have been over 900 wren nestings on my trails. The only cases of cowbird parasitism have been the two described herein. There have also been 299 nestings of Eastern Bluebirds (Sialia sialis), 206 nestings of Tree Swallows (Iridoprocne bicolor), 30 of Carolina Chickadees (Parus carolinensis), and three of Tufted Titmice (Parus bicolor): All nests have been free of cowbird eggs. I have decided to do a weight study of all nestlings if cowbirds ever parasitize a wren’s nest again. Such a study would help to draw a more complete picture of the uncommon occurrence of cowbird parasitism of a cavity nester.

295 W. Central Ave.
Delaware, OH 43015

Box No. 13, 14 June 1978. The cowbird nestling looks up as his five wren siblings “play ‘possum.” Four of the five wrens survived despite the voracious appetite of their competitor.
**QUESTION CORNER**

Lawrence Zelony

Last year broken bluebird egg shells were found on the ground near the box but the nest was not disturbed. Do you have any clues as to what happened?

Harold C. Whitlock
Easley, South Carolina

There are several possibilities in this case. The raider could have been a House Wren, a House Sparrow, a starling (if the entrance hole was 1 5/8 inch in diameter or larger, or if the starling could reach the nest without entering the box), a chipmunk or a squirrel. Snakes of several kinds also take bluebird eggs without disturbing the nests, but they nearly always swallow the eggs whole leaving no tell-tale shells.

We are on an open two acre lot with a creek and trees on the periphery. Do we need more than one bluebird box?

R.G. Taylor, M.D.
Talbot, Maryland

Bluebirds will usually not nest closer than about 100 yards from other bluebirds, although there are often exceptions to this general rule. It is quite possible that your two-acre property could accommodate as many as four pairs of nesting bluebirds by locating the nesting boxes strategically.

I’m having a hard time preventing starlings from destroying eggs and young bluebirds in my boxes. What can I do?

R.M. Bridgman
Prattville, Alabama

Starlings cannot enter the 1½ inch diameter entrance hole generally recommended for bluebirds. If your nesting boxes have that size openings and are at least 6 inches deep, measured from the bottom of the entrance hole to the floor, starlings should rarely, if ever, bother your bluebirds. How we wish we could control House Sparrows that easily!

An old issue of *Bird Watcher’s Digest* noted that your organization had had some success using peat pots as a blowfly deterrent. Could you explain how it works and if it is successful.

Eleanor Ellis
Springfield, Vermont

There is some evidence that where parasitic blowflies are a problem a direct relationship may exist between the amount of nesting material in a bluebird nest and the extent of blowfly infestation. Placing a round peat pot on the square floor of a nesting box usually results in a smaller amount of nesting material being used by the bluebirds and thus, perhaps, a smaller amount of blowfly infestation. More research is needed before any definite recommendation can be made concerning this method of control.
At 1950 on 13 June 1982, on a 10-ha Eastern Bluebird (Sialia sialis) study area in Fulton Co., Illinois, we saw an American Kestrel (Falco sparverius) flying directly toward a bluebird nestbox. The kestrel landed on the front of the nestbox which had no perch and struck a woodpecker-like posture by grasping the box with its talons and occasionally flapping its wings for balance while its head was level with the box entrance. The kestrel inserted its head into the entrance and removed a 6-day-old nestling bluebird. Meanwhile, the parent bluebirds flew toward the kestrel at the box, hovered, and gave their alarm chatter but were unsuccessful in warding off the intruder. A Common Grackle (Quiscalus quiscula) also joined the adult bluebirds in harassing the kestrel. The kestrel then flew toward a nearby grove of trees with the prey grasped in its talons.

Five nestling bluebirds had hatched in the nestbox on 7 June. Late on 9 June, all five nestlings were still present; however, by 12 June, only three young remained. We were curious as to the cause of the disappearance of the two nestlings between 9 and 12 June. The nestbox was located at the edge of a 3-year-old, 1.6-ha Christmas tree plantation with recently mowed sparse ground vegetation and an adjacent newly planted soybean (Glycine max) field—habitat not really conducive to snakes, a known bluebird nest predator (Musselman, 1946). An immediate check of the nestbox after the departure of the kestrel revealed two remaining nestlings. The adult bluebirds subsequently began feeding the remaining nestlings and both eventually fledged.

Kestrels had been frequenting the area and nested in an old barn approximately 100 m from the predated nestbox during the previous three springs. They often fed in the Christmas tree field and nearby pasture where 35 other nestboxes were located. Primary food items of the American Kestrel are insects and small mammals; however, they are known to prey upon small birds (Reilly, 1968:114; Steidl, 1928) and have been reported to rob bluebird nestboxes (Drinkwater, 1953:215; Steffen, 1981:54). Steffen (1981) saw a male kestrel extract an adult House Sparrow (Passer domesticus) from a bluebird nestbox without a perch in a manner similar to our observations of the nestling removal. Steffen (1981) also reported that the kestrel subsequently examined other bluebird boxes in the same manner and that this hunting behavior was later demonstrated by either the kestrel’s mate or one of its siblings. Drinkwater (1953) reported a kestrel landing on a perch below the entrance of a bluebird box containing nestling bluebirds and extending its leg into the entrance. Although removal of nestlings was not observed by Drinkwater (1953), he had previously seen the kestrel eating a nestling on top of the nestbox. Removal of the perch by Drinkwater (1953) allowed the one nestling remaining in the box to fledge. Thomas (1946) noted that bluebirds ignored kestrels nesting in their territories although a decrease in a bluebird population as a result of kestrels was alluded to by Musselman (1941).

The nestbox from which we saw the nestling removed was constructed in accordance with Musselman’s (1934) plans for a 8.3 x 8.3-cm (3¼ x 3¼ in.) box. The entrance hole was 4.5 cm (1¾ in.) in diameter, 15.2 cm (6 in.) from the bottom of the box, and 1.17 m (46 in.) above the ground. The distance from the bottom of the hole to the heads of...
the remaining two nestlings was about 5.1 cm (2 in.). However, nestling bluebirds first open their eyes around day 9 (Hamilton, 1943; Havera, unpublished data). When these 6-day-old nestlings noticed our disturbance at the box entrance, they assumed a feeding position and stretched their heads to within approximately 3.8 cm (1 ½ in.) of the entrance, evidently within grasp of the kestrel’s bill.

It is noteworthy that the remaining two nestlings fledged. Either the kestrel did not return or, if it did, it was unsuccessful in reaching older, more cautious nestlings that flattened out in the nest, especially after their eyes opened. We question whether the magnitude and severity of such rare kestrel depredation on nestling bluebirds merits modification of nestboxes other than insuring that no perches are present near the entrance hole. We also recommend that no nestboxes for kestrels be placed near areas with bluebird boxes.

We thank Drs. S.C. Kendeigh, F.C. Bellrose, R.R. Graber, and G.C. Sanderson for comments.

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**WANTED: Back Issues of Sialia**

Don’t discard back issues of *Sialia*! If, for any reason, you cannot keep past copies of the bluebird journal return them and claim a tax deduction of $2.50 for each. Many new members desire complete sets of back issues which we are unable to supply. Copies of Volume 1:1,2 and Volume 3:2 are particularly needed. Mail back issues to headquarters:

North American Bluebird Society
Box 6295
Silver Spring, MD 20906-0295

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**Literature Cited:**


Illinois Natural History Survey
Box 599
Havana, IL 62644

**Editor’s Note:** If kestrel predation is a problem on bluebird trails, raccoon guards over the entrance hole may prove useful.
Bluebirds and Tree Swallows Nest in Proximity

New Jersey

Junius W. Birchard

Over the Memorial Day weekend (1982) we camped on the New Jersey side of the Delaware River a few miles below Port Jarvis, NY. On previous occasions I had given the owners of this farm some bluebird boxes.

We discovered that a pair of bluebirds had nested in one of the boxes which had been placed on a garden fence post and had four 12-day-old nestlings. We were told that the numerous Tree Swallows had been fighting the bluebirds for a week trying to get into the box; we verified this activity with our own observations. The swallows had occupied three other nearby boxes but were also attempting to claim the one in which the bluebirds were nesting.

I put up a new box on the next garden post, just ten feet away. Within half an hour the swallows were looking it over. The next day they started to build a nest in it and were no longer troubling the bluebirds. We were still there on the third day and there seemed to be no strife. We later heard that both broods fledged successfully.

Two families of bluebirds would not live that close together, nor would two families of Tree Swallows (usually) but the two species are able to live in proximity without fighting. Swallows take most of their insects out of the air while bluebirds pick most of theirs from the ground. Perhaps this difference in their feeding methods allows them to share the same area.

207 East Valley View St.
Hackettstown, NJ 07840

Female Eastern Bluebird with food for young, Rosenkrans Farm, Flatbrookville, NJ, Memorial Day, 1982.
boxes were placed within 25-30 feet of the existing boxes. Because of vandalism and Whitefooted Mouse (*Peromyscus leucopus*) interference, no definitive results were obtained in the first year (1980).

In 1981, at one pair of boxes (30, 30A) one of the boxes fledged a brood of Tree Swallows and the other a brood of bluebirds; but because the bluebird box was first usurped by House Sparrows (*Passer domesticus*) for six weeks before they could be ejected, the female bluebird was building a nest and laying eggs while the swallows were feeding and fledging young, so there was little overlap.

In 1982, two of the pairs of boxes had simultaneous occupancy by bluebirds and Tree Swallows. At one pair (30, 30A), the nesting of the swallows in one box coincided essentially with the first of two nestings of the bluebirds in the other box; at the other pair (29, 29A), the nesting of the swallows overlapped the two nestings of the bluebirds.

Because I had Tree Swallow competition on my bluebird trail along River Road at and northwest of Seneca, Montgomery County, Maryland, I decided to test this idea the following spring. At three places where the competition had been most persistent in previous years, second

Maryland

Edwin T. McKnight

At the Second Annual Meeting of the North American Bluebird Society at Front Royal, Virginia, in November, 1979, George Grant gave a paper on the competition of Eastern Bluebirds (*Sialia sialis*) with Tree Swallows (*Iridoprocne bicolor*) for nestboxes in New York. During the discussion of the paper, Mr. Grant suggested that, because of territorial intolerance of both species during the nesting season toward others of their own kind but a limited tolerance of each species toward the other, the conflict for nesting sites might be solved by putting up the nestboxes in closely spaced pairs. One box of such a pair would be available for bluebirds and the other for swallows.

Because I had Tree Swallow competition on my bluebird trail along River Road at and northwest of Seneca, Montgomery County, Maryland, I decided to test this idea the following spring. At three places where the competition had been most persistent in previous years, second

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5038 Park Place
Bethesda, MD 20816

RESEARCH GRANT AWARD

Steven Kruger, a graduate student at the University of Wisconsin Stevens Point, is the first recipient of a NABS Research Grant. Steve was awarded $500.00 for his research topic of nesting habitat preference for the Eastern Bluebird in Wisconsin. His Masters program will include not only habitat preference but nesting locations throughout Wisconsin to aid the State in their non-game management program. We wish Steve success and look forward to positive results from his study.
During 1982 the nestbox project was again carried out by "The Friends of the Bluebirds." This volunteer group held spring and autumn meetings and monitored boxes during the breeding season.

A summary of nestbox occupants and nestings during 1982 is shown in Table 1.

A pair of Eastern Kingbirds nested in one of Earle Farley's boxes. Three eggs were laid but did not hatch. The entrance hole had been enlarged by a squirrel which had previously occupied the box. Farley also reported the only case of cross breeding this season: an Eastern Bluebird female with a Mountain Bluebird male.

On the average the Mountain Bluebird clutch size was down this year. Possibly the late, cold spring was a factor.

In order to keep mice from overwintering in nestboxes, some members used a strip of plywood or screen netting to cover the entrances when cleaning the boxes at the end of the nesting season.

Raymond Gladden, our primary contributor of nestboxes, built 261 this year. Some of them have 1 9/16 inch entrance holes for purposes of experimentation.

A master map of nestlines, prepared by Ann Smith, will be a continuing project.

Nesting results were compiled by Norah Lane, Mamie McCowan, Barbara Robinson, Hazel Patmore and Ann Smith.

Mountain Bluebird Trail, Lethbridge, Alberta

Three thousand miles were traveled in banding 307 bluebird nestlings and 27 adults. Eleven second broods fledged by 5 August. Results are shown in Table 2.

Calgary, Alberta, Area Bluebird Trail Report

Thirteen sections of bluebird trails were monitored by one or more individuals during 1982 in the Calgary area. These people monitored 765 boxes on 421 miles of line. Nests in these boxes fledged approximately 840 Mountain Bluebirds and 2,030 Tree Swallows.

This summary was submitted by Don Stiles.
# Table 2. Occupancy of Nesting Boxes on the Mountain Bluebird Trail, Lethbridge, Alberta, 1982.

<table>
<thead>
<tr>
<th>Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nesting boxes available</td>
<td>840</td>
</tr>
<tr>
<td>Boxes used by bluebirds</td>
<td>101</td>
</tr>
<tr>
<td>Bluebird eggs laid</td>
<td>482</td>
</tr>
<tr>
<td>Bluebirds fledged</td>
<td>387</td>
</tr>
<tr>
<td>Bluebird nestlings banded</td>
<td>307</td>
</tr>
<tr>
<td>Bluebird adults banded</td>
<td>27</td>
</tr>
<tr>
<td>Sterile eggs</td>
<td>95*</td>
</tr>
<tr>
<td>Tree Swallow nests</td>
<td>56*</td>
</tr>
<tr>
<td>Tree Swallows fledged</td>
<td>280*</td>
</tr>
<tr>
<td>Tree Swallow eggs laid</td>
<td>365</td>
</tr>
<tr>
<td>House Wren nests</td>
<td>5</td>
</tr>
<tr>
<td>Number of boxes used</td>
<td>156</td>
</tr>
</tbody>
</table>

*estimated

This report was compiled by Duncan J. Mackintosh.

1701 Lorne Avenue, Brandon, Manitoba R7A OW2 (Lane); 1719 - 9th Avenue S., Lethbridge, Alberta T1J 1W4 (Mackintosh); 20 Lake Wapta Rise SE, Calgary, Alberta T2J 3M9 (Stiles).
ON THE TRAIL

With this issue of Sialia we initiate a new feature, "On the Trail" will be published from time to time and is intended to provide our readers with succinct information about bluebird and cavity nester trails. Let us know what is happening on your trail. Send trail reports, unusual observations, publicity efforts, etc., to the editor, 10617 Graeloch Rd., Laurel, MD 20707.

Muncy, PA—Jane Derr, Christine Schaefer and Jackie Wottrich were honored in January for their efforts in the Seven Mountains Audubon Society's Bluebird Project. National Audubon Society Meritorious Service Awards were presented to them.

Bella Vista, AR—Chuck Nelson, President of Bella Vista Bluebird Society, reports that the 160 boxes on their bluebird trail fledged 405 bluebirds in the first two broods of 1982.

Jackson, MS—R.B. Layton writes that the Jackson Audubon Society Bluebird Project in 1982 sold over 3,000 bluebird boxes at cost with more than 50 garden clubs participating in this statewide effort. Radio, television and newspapers were utilized in a highly effective campaign.

Peterborough, ONT.—The Pike Lake Bluebird Trails completed the second year of operation at the end of 1982 according to the Braleys' report. Available nesting boxes increased from 75 to 217 and the number of bluebirds fledged rose from 25 to 247. This trail system also fledged 420 Tree Swallows and 38 House Wrens. Predation from raccoons and human intervention were the major problems. A total of 199 nest record cards have been submitted to the Royal Ontario Museum and the Laboratory of Ornithology at Cornell University.

Muncy, PA—The Seven Mountains Audubon Union County Bluebird Trail completed its fourth year in 1982. Each year has seen a dramatic rise in the number of bluebirds fledged: 1979—21 from 5 boxes; 1980—91 from 16 boxes; 1981—139 from 33 boxes, and 1982—233 from 39 boxes. Nestlings were banded by Christine Schaefer. A female banded in 1980 as a fledgling successfully raised eight young during the 1982 nesting season. Five adult females were banded in 1982. Three of those females had two successful nestings; however, two of the banded females lost their second broods due to environmental factors, i.e., pesticide use.

Toronto, ONT.—L.A. Smith reports that there were 112 "good" nestings in his area. House Sparrows used only two boxes. Two teams of bird banders banded 55 juvenile bluebirds. Hundreds of acres of prime land have been obtained for 1983 production. Smith notes that when he first came to Canada in the nineteen fifties bluebirds were seen once in four years. Now he sees them every day!

Ocean County, NJ—The Colliers Mills Wildlife Area Bluebird Trail of 19 nestboxes fledged 127 bluebirds in 1982. Tom Mulvey notes that 202 bluebird eggs were laid and 127 eggs hatched (62.8%). All nestlings were banded. Five of the nestboxes contained triple nestings and 14 had double nestings. Cornell University nest record forms were completed for nestings on this trail.
Huber House Sparrow Trap

How to Co...

A — 4" x 8½" plywood
B — 1 ¾" entrance hole
C — Steel plate (1/8"
D — Brass rod (3/32"
E — Insulated electrical wire
F — Stop screw (#6
G — Pivot screw (#6
H — U-shaped clip

• Cut a piece of plywood for the box.
• Before drilling the hole in your nestbox.
• Cut a steel plate (C
• Bend a 10½" brass rod for the lower part of the rod
• Install the trigger (I
will serve as hinges
• Install the steel plate (C
plate in the closed position
• Bend a brass rod on the plywood trap again

Use the in-box traps when they have egg rows at the box. Leave advanced the sparrows

When you decide to interfere with its opening, the trap plate is not to interfere

If you catch a few, and try to catch the rest (solving the problem), clean out the box

CAUTION: Use of these traps in the death of birds
How to Construct a Huber In-box House Sparrow Trap

A— 4" x 8½" plywood
B— 1¾" entrance hole
C— Steel plate (1/8" x 1 1/4" x 3")
D— Brass rod (3/32" diameter) for trigger
E— Insulated electrical staples for hinges
F— Stop screw (#6 x ½" round-head wood screw)
G— Pivot screw (#6 x ½" round-head wood screw)
H— U-shaped clip

• Cut a piece of plywood (A) approximately 4" x 8½" (or to a size that fits your nestbox).

• Before drilling the 1¾" entrance hole (B), be sure that it will align with the hole in your nestbox.

• Cut a steel plate (C). Drill 1/8" hole in the steel plate for the pivot screw.

• Bend a 10½" brass rod (3/32" diameter) to the shape shown in Figure 1. Bend the lower part of the rod forward 90°, as shown in Figure 2. This is the trigger (D).

• Install the trigger (D) on the plywood with two insulated electrical staples (E) that will serve as hinges.

• Install the steel plate (C) with the pivot screw (G). The dotted lines show the steel plate in the closed position (C'), after the trigger has been tripped.

• Bend a brass rod or coat hanger wire into a U-shaped clip (H) and use this to wedge the plywood trap against the inside front of the nestbox.

When to Use the Trap

Use the in-box trap only when House Sparrows are actively building a nest or when they have eggs in the nest. Never set the trap if you have merely seen sparrows at the box. Learn to identify a House Sparrow’s nest. Generally, the more advanced the sparrows are in the nesting cycle, the more quickly you can catch them.

When you decide to set the trap, be sure the nesting material in the box does not interfere with its operation. It is best to test the mechanism several times to be sure the trap plate is not binding.

If you catch a female House Sparrow first, remove her, reset the trap immediately and try to catch the male. When you trap the male sparrow (which usually ends the problem), clean out the nestbox so that it is ready for bluebirds and other native cavity nesters. A box containing a nest signals other bird species that it is occupied.

CAUTION: Use of this trap requires special attention. Careless use could result in the death of birds that are protected by law.
Newman's Publicity for Slide Program

I send the following letter to organizations to let them know about the NABS slide program. Along with the letter I send a copy of the brochure, "Where Have All the Bluebirds Gone?" and my card. The brochure provides information and shows them what a bluebird looks like (many people confuse it with a Blue Jay). I send my card hoping that the recipient will save it long after the letter has been discarded.

When I present a slide program I give a short talk prior to the slides and allow a question and answer period afterward. I also take with me the following items for a visual display: a completed nestbox, an unassembled nestbox, the 25 November 1979 issue of Parade magazine, copies of the June 1977 issue of National Geographic, a nestbox with infertile eggs in the nest in a plexiglass case, a wasp's nest taken from a box, Dr. Zeleny's book The Bluebird, a few copies of Sialia, and enough copies of the Society's brochure so that each member of the audience receives one.

Dear

How long has it been since you've seen a bluebird? Maybe you're one of the majority of Americans who has never seen this beautiful bird nor heard its soft warble. The North American Bluebird Society is determined to increase the three species of bluebirds on this continent by promoting effective conservation. The primary object of the Society is to educate all who will listen about the importance of preserving these singular creatures in their native environment.

Because of the acts of human beings, including the importation of the House Sparrow and starling, the bluebird, a cavity nesting bird, is in dire need of conservationists who will ensure that future generations will be able to enjoy their beauty. Toward this end, the Society has produced a 25 minute slide program titled "Where Have All The Bluebirds Gone," that tells the plight of this beautiful native bird. If you and your club members would like to see this program, my wife and I would be pleased to present it, and to tell you of our success in increasing the bluebird population in the Rising Sun area.

Sincerely,

Jerry Newman
Member: North American Bluebird Society

P.O. Box 53
Rising Sun, Md. 21911
Phone (301) 658-5187

Jerry Newman
BLUEBIRD CONSERVATIONIST

P.O. Box 53
RISING SUN, MD 21911
(301) 658-5187

MEMBER
NORTH AMERICAN BLUEBIRD SOCIETY

Sialia, Summer 1983
Study of Bluebirds

William Lovell Finley

The following excerpt from American Birds published in 1907 was passed along to us by Arlene Kunkel of Fredericktown, Ohio. It provides insight into bluebird life as well as incidental social comment for the first decade of the twentieth century.

Blue is not a common color among our birds. There are many more clad in neutral tints of brown and gray than in bright blue. But a list of birds that everyone should know could not be complete without our common study in blue, the bluebird (Sialia sialis). In all our woods, from the Atlantic to the Pacific, one may find this gentle and friendly bird.

Throughout the East, the bluebird is known as the forerunner of spring. The bluebirds are the first to return, and they bring the spring with them. But in the West, where the winters are not so cold, a few always stay the year around. They are altogether in small flocks during the day and sleep together at night. One evening I saw four huddled together in one of my bird-boxes. During the hard days of rain and snow they were continually together, and returned at night to stay in the box. I think they were partly drawn to return each day by the food I put out. When I first saw them in the back yard, I tossed a worm out of the window, and it had hardly struck the ground when it was snapped up. They were all hungry, for they ate half a cupful of worms.

The bluebird, the wren, and the swallow have taken remarkably to civilization. They formerly built in holes in old trees in the midst of the woods, but now they prefer a house in the back yard. In one locality near my home we used to find the bluebirds nesting every year in some old stumps. Now several residences have been built near, and in three of the yards there are bird-boxes, and the bluebirds have abandoned the stumps and taken to modern homes. A bluebird has better protection in a back yard, and he knows it. Then if the owners like him, he grows fond enough of them to perch on the hand, and he pays rent in the quality of his song and by ridding the fruit trees of harmful worms.

Although the bluebird often lives about the city, I associate him with country life. I imagine he likes a farm home better than a city flat. I have a friend in the country who has bird-boxes up in various places about his farm. Most of them find occupants every year. An old square box that is set in the crotch of an apple tree is ahead in the record. This box was put up in the spring of 1897, and was taken by a pair of bluebirds. It is only four feet from the ground and has a removable top, so that the owner may readily make friends of the tenants. When I opened the box and looked in, the mother sat quietly on her eggs, and was tame enough to allow us to stroke her feathers.

This box is now covered with moss and lichens, but it is famous in bluebird history. It has been occupied every year since it was put up, and not a single year has there been less than two broods reared, and several times three. The record year was in 1904, when the bluebirds had two families of seven and one of five birds, and succeeded in raising them all. Seven is a large family for bluebirds, and it is more remarkable that there should have been seven in the second brood and then a third brood. In the eight years there have been over one hundred and ten young bluebirds hatched in this box in the apple tree. One would think the bird world would soon be overcrowded with bluebirds, but it isn't. There seem to be no more bluebirds about the farm than eight years ago, although there are generally two or three broods raised in other boxes near by. It all goes to show how the birds of each year take the
place of the numbers that die during the winter. Birds have many enemies that we
know not of. Many die of diseases, many starve or die of cold, and many are killed by
birds of prey and animals that hunt small birds.

It would be interesting to know whether the same pair returns each year to the
box in the tree, or how many different pairs have lived there. Sometimes the same
pair has returned, but it is improbable that they have lived longer than three or four
years. If one of the birds died, the other may have taken another mate and returned
to the same home.

I find it an easy matter to make friends with the birds; if one has a yard with
some trees and bushes, he may have a real bird retreat. Fortunate is the boy or girl
who has a big yard with a tangle of bushes or an old fence--some thick trees and a
wild corner where the weeds run riot. Under such conditions he ought to go right in
to the bird business. Arrange a shallow dish or basin, where fresh water may be kept
every day for the birds to bathe and drink. This makes a most attractive bird resort
for the summer. Then build some bird-houses, and put them about in the trees or on
some posts and you are sure to have tenants all summer. For the fall and winter
start a bird lunch-counter by all means. Nail up a box or board just outside your win-
dow where you can watch it and where you can set the table without the least trou-
ble. Then keep it supplied with a few cracked nuts, seeds, and crumbs. Suet chopped
in fine bits may be put out, or a large piece may be nailed down, so it can be
pecked, but not dislodged. The news will spread, and you will have boarders every
day. If you are regular, your boarders will be regular. The guests will assemble even
before the meals are served. In this way one may establish the closest relations with
his feathered visitors. Accustom them to your presence gradually, and do not make
sudden movements, and the birds will learn not to be afraid. Later you may even
have the birds come at call or take a bit from your hand. Such a bird relationship is
worth working for, and such familiarity with the wild birds cannot help but make a
boy or girl's life better.

In the side of our tank house we bored two holes about four feet apart and nail-
ed up boxes on the inside. One of these was soon taken by a bluebird. The female
went in and looked the box through, and in a moment came out and perched on the wire while the male took a look. The next day the female began carrying straws. She had a devoted husband, but he was merely an attendant when it came to work. He watched and applauded, but he didn't help build. I don't know but that he was too lazy; or maybe he didn't know how, or the wife didn't want him bothering while she was building to suit herself. It looked to me as if he were ornamental without being useful. But after watching awhile, it seemed that it was her duty to build and his to watch and encourage.

I had a splendid arrangement to watch the builders at close quarters. I could go in the tank house and close the door, and then in the darkness I could look through a crack in the box, and with my eye less than a foot away could watch every movement the birds made. While the mother was setting on the eggs she became very tame, and we often reached in and stroked her feathers.

When the young birds came I watched the mother come to feed and brood her young. The father was the ever-watchful admirer, but the mother was all business, and paid no attention to him except to knock him out of the way when he was too devoted. The mother always brought in the food, and the father kept staying away more and more, until the young birds were grown.

One day while I was watching, the mother was feeding the youngsters on maggots almost entirely. She was gone quite a while, but each time returned with a large mouthful, which she fed to the young. Occasionally one of the young failed to get all of them, and if one dropped the mother picked it up and ate it herself.

One of the eggs was addled and did not hatch, but the mother was very fond of it. She would look at it almost every time she returned, and would turn it over, and then cover it a few moments, as if she were sure it contained a baby bird.

The nest was lined with horsehair, and once when the mother fed one of the chicks, the food caught and the little bird swallowed the hair too, but both ends stuck out of his mouth. He kept shaking his head, but could not get rid of it. I waited to see if the mother would assist him, but she didn't seem to notice his trouble, so I had to reach in and dislodge the hair. Otherwise I am afraid it would have fared badly with the chick.

These bluebirds have five young in their first brood. When the first youngster left the nest, the father became more attentive and helped care for the little ones that were just starting out into the world. They all stayed about the yard till the young knew how to hunt for themselves. Finally three of them disappeared. I suppose they went off with other bluebirds, but two of the young still stayed with us. The parents themselves seemed to disappear for a few days, and I thought they had left for good. Then one morning I saw the mother enter the house again, and the father was there, too, perched on the wire. He was more attentive than formerly. The next day I found a fresh egg in the nest. The parents had returned to raise a new family.

There were only three eggs in the second setting, and all hatched. The two young birds of the first brood followed the father about while the mother was setting. Then when the mother began feeding her second family I made some interesting observations. Her older children began following her about to hunt food, and to my surprise I saw one of them bring some worms, and after the mother fed, the young bluebird went into the box and fed her small brothers and sisters. After that I watched closely, and often saw the birds of the first brood feed the little ones of the second brood. Perhaps the two birds of the first brood were girls and took readily to housework. They may have been learning for the next season, when they themselves expected to have a home.

One of the young birds was very enthusiastic in helping her mother. For a while she fed as often as the mother. Several times when the latter brought food, the young bird flew at her and tried to take the morsel she had in her mouth, as if saying, "Let me feed the children," and twice I saw the mother yield and let her older child feed the younger ones. It was a very pretty bit of bird life to watch these bluebirds.
With the exception of the arid regions of the western United States, elders, in one form or another, are common across the continent. The twelve native species vary in form from shrubs to small trees but share in their preference for rich, moist soils. All elders are deciduous plants, and all have compound leaves spaced opposite one another along the stems. Their showy flower clusters are followed by blue, black or red fruits depending upon the species. In the East, the American Elder (Sambucus canadensis) and the Scarlet Elder (S. pubens) are the most abundant species, while in the West, the Blue Elder (S. cerulea) and the Blackbead Elder (S. melanocarpa) are widely distributed. As a group the elders provide an important source of summer food for wildlife. All three species of bluebirds feed on the elderberries found within their ranges.

Humans too consider the fruits of several elders to be palatable. The Blue Elder reportedly has flavorful fruit while the Mexican Elder (S. mexicana), another western species, is said to have delicious fruit with a flavor reminiscent of blackberries. The American Elder, described below, and its varieties are the elders most commonly cultivated for their fruit. The plants are offered by a number of nurseries. The familiar berries of this species are excellent sources of vitamin C and are often used in the making of wine, pies and jellies. Less familiar perhaps, is a recipe for “Flower Fritters” in which the large, flat flower clusters of this shrub are batter-dipped and fried. This unusual dish apparently originated among the American Indians.

American Elder
(Sambucus canadensis)

Native Range—Nova Scotia to Georgia west to Manitoba and Texas.

Hardiness—Zone 4

Habitat—Usually found on moist, open sites in slightly acid, fertile soils.

Habit—A 6-12 foot flowering shrub associated with wetland areas. Capable of forming thickets by means of suckering and layering. Leaves are opposite and compound, each containing 5-7 toothed leaflets.

Fruits and Flowers—Small white flowers in showy, flat-topped clusters 5”-8” across, appearing in mid-summer. Clusters of small, blue-black berries are produced in late summer.

Landscape Value—Tolerates saturated soils; a valuable flowering shrub for use on wet spots. Effective grouped along stream or pond margins.

Culture—Can be grown in ordinary garden soil where conditions are not droughty. Prefers full sun. Easily transplanted. Yearly pruning increases fruit
production. Propagate by stem cuttings taken in spring or summer or by digging suckers. Seeds will germinate 2 years after sowing.

Wildlife Value—Berries of the American Elder are eaten by at least 50 species of birds. Those preferring the fruit include the Red-bellied and Red-headed Woodpeckers, Blue Jay, Northern Mockingbird, Gray Catbird, Brown Thrasher, Eastern Bluebird, Cedar Waxwing, Yellow-breasted Chat, Northern Cardinal, and Rose-breasted Grosbeak. Other birds that prefer the berries of native elders are the Band-tailed Pigeon, Mountain and Western Bluebirds, Black-headed Grosbeak, Steller's Jay, Phainopepla, Western Tanager, and Lewis', Nuttall's and Pileated Woodpeckers. Many more species use elderberries to a lesser degree. A number of mammals ranging from chipmunks to elk also feed on elder fruit or foliage. The American Elder offers outstanding cover for nesting birds.

Special Uses—The juicy berries of American Elder are used for making wine, pie or jelly. The flowers are also used to make a delicately flavored wine or they may be dipped in batter and fried to make flower fritters.

P.O. Box 110
E. Hampstead, NH 03826

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. If a zone is given, it indicates that plants are hardy within the zone and in all areas south of it. 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.
The Remarkable Process of Incubation

Lawrence Zeleny

Incubation in the life of a bird is the approximate equivalent of pregnancy in the life of a mammal. Both the bird and the mammal provide warmth and protection for the fertilized egg and the embryo that develops from it. In the case of the mammal, food for the developing embryo is supplied by the blood stream of the mother and waste products are removed by the same route. With the bird sufficient food is stored in the egg to last the embryo until the time of hatching. Part of the waste products accumulate within the egg and part are given off in gaseous form through the slightly porous shell.

Some birds start incubating as soon as the first egg is laid but most species, including the three species of bluebirds, usually delay the start of incubation until the last egg of the clutch is laid. This latter system has a distinct advantage since all of the young are then usually hatched on the same day and are thus capable of competing with one another on equal terms for the food supplied by the parents.

Embryo growth and development in the egg take place only when the egg is kept warm. The normal incubation temperature for the eggs of most songbirds including bluebirds is about 95 degrees F (35 degrees C). Occasional cooling of the eggs for short periods during the incubation process does not appear to damage the embryos but may delay their development somewhat and thus increase the incubation period. Overheating of the eggs for even short periods may cause the death of the embryos. This may occur in nesting boxes on very hot sunny days if the boxes are made of material that is too thin or too dark in color, or if they are not adequately ventilated. The maximum temperature that can be tolerated by bluebird eggs is not known exactly but is probably in the neighborhood of 107° F. This temperature may be encountered inside some nesting boxes when the outside shade temperature is no more than about 87° F.

In order to keep the eggs warm enough for proper incubation in most weather it is necessary that the eggs have close contact with the skin and blood stream of the incubating bird. Since feathers are poor conductors of heat the bird develops a "brood patch" by shedding feathers on an area of its belly shortly before the complete set of eggs has been laid. Brood patches develop on both sexes in those species in which both parent birds share in the task of incubation. In settling itself on the nest the brooding bird takes great pains to bring the eggs into close contact with the warm skin of the brood patch. One of the marvels of nature is that some penguins can successfully incubate their eggs during the antarctic winter when the temperature may be as low as -70° F.

With many species of birds both parents help with the incubation. In the case of a few species the male alone is responsible for the incubation. With the bluebird and many other species, however, incubation is performed almost exclusively by the female. The male bluebird sometimes sits on the eggs while the female is out of the box for brief periods, but it is doubtful that he contributes much to the incubation process since he does not have a brood patch. His responsibility during the incubation period is to defend his home against any possible unwanted guests and to support his mate's morale by singing to her and bringing her an occasional choice insect.

The female bluebird broods her eggs continuously all night during the incubation period, but during the day she will leave the nest for varying lengths of time while she exercises and searches for food. On cold days she usually returns to her nest within a few minutes to avoid any unnecessary
chilling of the eggs; but on hot sunny days she seems to know that the eggs will stay warm for some time without her attention, so she may leave them for periods of an hour or more. Biologists tell us that this difference in brooding behavior on cold and warm days is due simply to instinctive reactions to differences in temperature.

During the incubation period bluebirds and most other birds will turn and rearrange their eggs in the nest rather frequently. This serves to maintain an even temperature among all the eggs in the nest; it also prevents embryonic membranes from adhering to the shells.

Bluebird eggs normally hatch after 13 or 14 days of incubation. From my own observations of the Eastern Bluebird, mostly in Maryland and Virginia, it seems that the incubation period for the first brood of the season is usually 14 days and for the second and third broods it is usually 13 days. The warmer weather during the periods when the later broods are raised probably results in a slightly shorter incubation period. In one instance a clutch of eggs on my bluebird trail hatched in 12 days during very warm weather. There are a number of authentic reports of bluebird incubation times in excess of 14 days, most of these occurring in the colder parts of the country. A most unusual instance was reported by B.C. Pinkowski in the Jan.-Feb. 1974 edition of Inland Bird Banding News. He made careful and frequent observations of an Eastern Bluebird's nest in Michigan in which the first of six eggs did not hatch until the twentieth day of incubation, and the last egg hatched on the twenty-first day. During the incubation period the weather was unusually cold, often below freezing, and the female appeared to be somewhat negligent in her duty of keeping the eggs warm. The combination of these two unfavorable factors evidently seriously retarded the development of the embryos, yet all six of the eggs finally hatched.

As the incubation process proceeds eggs gradually lose weight through losses of water vapor and gaseous waste products which escape through the shells. One published report showed an average loss of 12.6 percent in the weight of 24 Eastern Bluebird eggs during the 13 day incubation period.

Shortly before hatching the maturing embryo develops a short but stout "egg-tooth" on the upper mandible of its bill. At the same time it develops a special set of remarkably strong muscles at the back of its neck. These muscles enable the young bird to wield its egg-tooth with sufficient force to break through the shell and to liberate itself gradually by tearing the shell apart. The egg-tooth and special hatching muscles are then no longer needed and soon disappear. The hatching process in the case of the bluebird requires several hours and sometimes the greater part of a day. The parent birds offer little or no help in the actual hatching process, but the mother bird carries away the empty shells and often eats part of them as a valuable calcium supplement to her diet. Thus the shells may in part be recycled to help build the shells for the next clutch of eggs.
highly adaptable. In other cases, changes in design may prove valuable in thwarting certain predators, protecting birds during adverse weather conditions, etc. Many of these designs merit experimentation by other bluebirders. If you do try some of the multiple-hole boxes described by the author or if you have already experimented with this type of nesting box, your results would be appreciated. Direct your comments to Tedd Gutzke, Research Committee Chairman, P.O. Box 66, Upham, ND 58789.

In the spring of 1982 Laurance Sawyer erected a log for bluebirds with two entrances. Two knots on opposite sides of the log offered a chance to try an experiment so he drilled an entrance hole in each knot. The birds readily accepted it so a log with five holes was also tried. The bluebirds also accepted this model. Sawyer has plans for erecting more multiple-hole boxes during the 1983 breeding season claiming they are safer for the birds than conventional models and they provide fine cross-ventilation. A large round top overhangs the entrance holes. He has written his material through the eyes of two bluebirds: Boy Blue and his mate, Rusty.

"Well, well, what have we here?" Boy Blue asked the question more out of interest in the unusual phenomenon than from ignorance.

"It's a house for us, obviously, but it has two entrances. Never saw one before," and he fluttered once more around the apple tree log on the pole. "Might as well have a look. This location is all right at least," and Boy Blue alighted to examine the interior.

"Wow, I've never before had a good look at the interior of a house because my body blocks the light while I'm in the entrance. Nifty, to say the least. Wonder what Rusty will say.

"I've found our home for this season, Rusty, dear," and Boy Blue did an extra flip of ecstacy. "You've never seen one like it, nor so handy in at least one strange way."

The air of mystery prevailed until the couple landed on the house. Boy Blue, quite beside himself with satisfaction over his unheard-of-discovery, slipped inside through the eastern opening, emerging instantly through the opposite doorway.

"Let me try it, B.B." Rusty quickly disappeared inside to check the appointments of the place.

"It's great. Just deep enough. And I love that in-and-out feature. It's still light in here when you poke your head through an entrance. There's something else that I like about it. I've always been scared to death about how I could get out of here if a predator should suddenly appear at the door. Now, I can slip out the other door. Wonderful, wonderful!"

Boy Blue listened with delight as Rusty canvassed the advantages of the great two-holer. Within a few days she had built a nest and laid an egg. A few days later Boy Blue came to the eastern door and announced excitedly, "You'll never believe what I've just seen. I, Boy Blue, have been inside a log house with, not two, but five holes. I went in and out till I got fairly dizzy. It's only a short distance down the driveway near the road past our yard."

Of course Rusty had to see the new house, too.

Her evaluation was that it was nice and roomy with plenty of light and easy escape from snakes and cats. Before she could once more visit the five-hole mansion, another couple had taken over busily building a nest.

"Maybe another time we can try one like that if it's still around," observed Boy Blue. "You never can tell what man will put up for us to nest in. I just love our snug little house, Rusty. It's especially nice to be able to see you there on our nest when I peek inside."

"Yes, yes, B.B., just go get me one of those new green worms like you used to bring me." Rusty settled carefully on the nest while Boy Blue, well able to take a hint, flew happily off in quest of the dainty morsel.

Bluebird Lane
Route 1
Ringgold, GA 30736
After the success that we had in 1981 with a pair of bluebirds raising two families in the two bluebird boxes in our backyard, we repaired and repainted the boxes over the winter and set them up again in about the same locations. The boxes were built to approximately the dimensions recommended by the North American Bluebird Society. The bottoms of the boxes were removable to make cleaning and painting easier. The boxes were mounted with ¾-inch pipe floor flanges bolted to the bases of the boxes. Placing the boxes about 6 feet above the ground and away from the trees seemed to work well. We set the boxes up during some warm weather in the latter part of February to be sure that we would have them out in time for the bluebirds’ arrival.

It wasn’t until Easter Sunday (11 April) that we saw the bluebirds checking the boxes. After a few days they appeared to have selected the dark green box and started to carry in nesting materials. This process was done slowly and methodically. There didn’t seem to be any hurry in getting the nest completed. Sometimes the birds had so much nesting material in their bills that they couldn’t get it through the box opening and a lot of it fell to the ground. We couldn’t really tell when the nest building was completed and the laying of the eggs started. The female didn’t stay in the house for a long time; in fact, it looked as if the birds might be adding to the nest as the eggs were being laid.

Trying to decide when incubation started was not easy. Instead of spending a long time on the nest, the female sat outside for extended periods. During the nest building and incubating, the male often perched on a nearby branch, apparently to maintain a watch.

In early May we noticed that both birds were carrying food into the box. It was fascinating to watch the birds fly to the box and enter without any maneuvering problems.

Occasionally, the male bluebird stopped gathering food to chase away squirrels, chipmunks, and starlings which he apparently considered to be too close to the nest. Although we have lots of robins in the backyard, we never saw the bluebirds bother a robin. We watched the bluebirds chase away a House Sparrow that wanted to use the second nestbox.

On 27 May we noticed more activity in the bluebird box. A little head appeared quite frequently in the opening. Sometimes the young bird put only its head out, and at other times it extended enough of its body for us to see part of the speckles on its breast. In the evening we noticed that the parents didn’t always take food directly to the nest anymore. Once we saw the male hold a nice, juicy morsel in front of the nestling from the roof of the box. It looked as if the parents were trying to get the baby to take its first flight by holding food out in front of it. As the youngster became more bold, it extended its body farther out of the box. We watched for about a half hour as the bird emerged part way and retreated back again. Finally, the young bird rocked back and forth in the opening, and then it took its first flight to a tree about 25 to 30 feet away. It was thrilling to see the little bird take its initial flight without any prior practice.

A short time later we saw a second little head in the opening, but this nestling didn’t attempt to fly out that evening. Meanwhile, the first fledgling had flown to a spot near a flicker nest in an oak tree. The flicker didn’t want the young bluebird around its nest, and it started to peck and push the bird away. The bluebird parents then started to attack the flicker like a pair of planes in aerial combat. The flicker didn’t seem to know what was going on, but it didn’t take long for the young bluebird to find other quarters, and peace was restored in the backyard.
The next morning about 8 o'clock, the second nestling started to rock back and forth at the entrance hole, and then it took its initial flight. It went in the same general direction as the first fledgling and about as far. Apparently there were only two offspring because all of the feeding activity at the box ceased after the second bird emerged.

Since then, we haven't seen the babies, but we have occasionally seen what we thought were the parents. The male came back once to enjoy the bird-bath.

We hope that we may see the young bluebirds again, and, since bluebirds can raise more than one brood per year, we hope that the parents will return and raise another family for us to enjoy.

2105 Weberwood Drive
South Charleston, WV 25303

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**Students Create Bonnie Bluebird as Conservation Symbol**

Marian Sharp McGrath

What can a group of 10-year-old kids do to further the cause of the bluebird? Well, in Youngsville, Pennsylvania, a class of fourth graders, along with their teacher, Margaret Wheeler, created Bonnie Bluebird, a symbol promoting concern for a safe environment and the future of the bluebird.

That was 12 years ago.

The idea took flight—so well, in fact, that a whole Bonnie Bluebird Program involving hundreds of children and adults has evolved. In addition to spreading the word about the plight of the bluebird, the program has resulted in the creation of a bluebird trail at a local recreation area and the yearly planting of trees and berry-bearing shrubs. Bluebirders gave nesting box blueprints to State Representative John Peterson, which led to over 100 boxes being built, adding significantly to the number that program participants have placed themselves. There is also a Bonnie Bluebird Parade, a yearly event in Youngsville for the past ten years.

Participating in last year's parade were the local volunteer fire department, the high school marching band, local dignitaries, the characters Woodsey Owl and Smokey Bear, and some 600 children wearing Bonnie Bluebird t-shirts and dressed as trees, flowers, birds, and butterflies. The parade culminated in an awards program in a nearby park, where the goals of the Bonnie Bluebird Program were explained and awards were given to children who won the essay and poster contests and to adults whose efforts had contributed to a better environment. A keynote speaker from the Pennsylvania Environmental Council emphasized the importance of recognizing the beauty and value of our land, the problems that threaten it, and how we can protect it. Other dignitaries present included school district personnel, the Youngsville Mayor, the County Commissioner, a State Representative, a State Forester, and spokesmen from the Animal Rescue League, the U.S. National Forest Service, and the Environmental Protection Agency.

We should all applaud the people of Youngsville for providing such a fine example of what can be done at the community level to help the bluebird.
Every year since 1974 when they first arrived, we have eagerly awaited the return of the bluebirds. We hoped they would nest in one of Charlie's four oak logs, or maybe in his latest "little green house," as we named it, built to NABS' specifications and painted sage-green. The boxes are all located in the front yard of our mountain home, nestled in the pines and oaks of eastern Shasta County, California, approximately 15 miles west of beautiful Mt. Lassen.

The bluebirds have not disappointed us. With the exception of 1979, three or more young have been fledged each year. And each year we have named nesting bluebirds "Papa" and "Mama."

Although we have learned much about bluebirds, there are always surprises; 1982 was no exception. After thoroughly exploring four of the boxes, Papa and Mama chose the "post house," a small log Charlie had hollowed out and nailed to the top of the northwest corner post in the orchard. The box was only 25 yards from the spot where a well was soon to be drilled on the property of our new neighbors. While happy that bluebirds had chosen the box, we were apprehensive about the success of their project. We watched with interest as Mama busily gathered cedar strips from bark Charlie had shredded and placed on the ground near the "post house." Some of the strips were so long that she had to make several attempts (comical to us) to get them into the entrance hole. Occasionally, she would gather pine needles for the nest.

Mama's nest building went on for several days. Papa occasionally brought her choice morsels to eat. Soon Mama started laying eggs—one each day. As yet no sign of the well driller. We dreaded his arrival wondering whether the birds and their eggs would survive the vicious pounding of the drill into the hard ground and the much harder volcanic rock beneath it.

Violent spring storms brought heavy rain, wind, vivid lightning and crashing thunder furthering our fears for the survival of the eggs Mama was now brooding.

One day while Mama and Papa were away from the nest Charlie said, "I'm going to find out what's happening in there." Lifting the roof of the log house, he peeked inside. What he saw greatly relieved our fears—at least for the time being: one tiny, newly-hatched bluebird and two unbroken eggs.

"But," said Charlie, suddenly very serious, "what if Mama and Papa abandon them when the pounding starts?"

"And I wonder if the little ones will make it if they do stay," I added, ruefully.

"Mack" and his well-drilling rig arrived while the three nestlings were being fed from sunrise to sunset. We braced ourselves for the unrelenting "boom-boom," "thump-thump" of the drill against hard ground, then against rock. Our house, which is about 50 yards from the site where the rig was drilling, shook with each and every blow rattling doors and windows. We watched the bluebirds for signs of fear and possible flight. Mama flew from the nest almost immediately, lit on the nearby power line, and observed the situation. Papa stayed close by in a tree. We watched narrowly from chairs in the front yard, wondering what we could do to ensure the nestlings' survival if they were abandoned. After about two minutes Mama and Papa hurriedly checked the nestlings and, much to our surprise and delight, went on busily feeding them with insects caught close to the nest. The bluebirds' devotion to duty and family had won.

Mama and Papa kept all possible predators including chipmunks, squirrels, woodpeckers and other birds from approaching the nest. They speedily routed a chipmunk that tried often to
get water at the bird fountain. With their wings clicking angrily close to the body of the little animal, they caused it to flee, apparently in terror. Their eyes and energies were also kept focused on a family of young Douglas' squirrels nesting nearby in an old log cavity. We watched in amusement as mother squirrel twice nervously moved her four wildly kicking offspring one at a time, each clutched firmly in her mouth, into other oak logs farther away from the bluebirds' house. Next day our neighbor on the other side informed us that the young squirrels had been moved into his woodpile, a much longer and safer distance from the bluebirds.

One day Charlie said, "Did you see Papa chase that Blue Jay?" I had to admit, with surprise and regret, that I hadn't.

We learned early that Blue Jays are a real threat to bluebird eggs and even to the nestlings. It was the first time a bluebird had been seen chasing a Blue Jay here! While loud danger signals were given and the bluebirds had seemed fearful when jays were in the vicinity, we had never before seen them chase one. Perhaps, after the well-drilling experience, Papa felt he could tackle anything.

Charlie and "Mack" discovered that Papa apparently had become immune to the presence of the towering, booming drill. While it was in full operation, Papa lit on the ground within a few feet of the truck containing the machinery, expertly captured an unsuspecting "bug," and carried it to his hungry offspring. He seemed completely indifferent, they said, to the noisy rig and its close proximity to his nest.

"Mack" and his rig departed upon his successful completion of the 108-foot-deep well. Life went on much more quietly for the bluebirds—and for us. When the young bluebirds were fully fledged, we watched them depart with regret. Our feelings were mixed with relief and gratitude that they had survived their trying experience. All I could think of was (no pun intended), "Well done, little bluebirds. Godspeed and do come back next year!"

Rt. 1, Box 395
Shingletown, CA 96088


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**Bluebird Slide Show**

The NABS slide show is available for rental at $5.00 or purchase at $50.00. 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.

The show has been revised recently. Nineteen slides have been substituted to improve the quality of the show, an audible sound now signals the speaker to advance the slide tray, an inaudible signal advances the tray when automatic equipment is used, the narration has been slowed, and script lettering has been enlarged for easier reading. There will be no price increase for this revised show. Revision kits are being prepared for past purchasers of the show and will be furnished to them at no charge.

To rent or purchase the bluebird slide show, write to Dick Tuttle, NABS Education Committee, 295 W. Central Ave., Delaware, OH 43015.
Backyard Blues

My Backyard Blue and his regal Queen
The prettiest sight these eyes have seen.
She sits and suns; he perches and preens,
Majestic hues amid deep, cool greens.

The glowing sun warms the clear spring air,
Blue soaks it up without a care.
"It's time, it's time," Queen chatters to him,
"To build the nest; it's time to begin."

They dip and fly 'round the big back lawn,
Up every morn way before dawn.
Blue carries bits of strawgrass and string,
Queen builds a nest for the royal heir-lings.

The honeymoon cottage on the tree
Now has become a nursery;
Four perfect white eggs they watch with love,
Sharing the pine with a Mourning Dove.

Early on a June summer morning
Four bluebirds busily hatching.
So quiet, still Mum watches the eggs,
Blue waits to tidy the tiny bed.

Blue swoops and flutters from tree to ground,
His friends wait, not making a sound;
Queen twitters and calls Blue in again,
"Look at your bluebabies, my darling."

"Come, Jay; hurry, Rob; Wren, come and see:
Four sons have I who look like me."
Mum smiles, spreads her wings, closes her eyes,
"Boy, is he in for a big surprise!"

Blue watches them sleep, warm in the nest;
After they wake from their short rest
He brings dinner all in a dither;
Then Queen tells him they are all sisters

Blue flies away yelling to his friends,
He moves quickly from limb to limb,
"My babies aren't boys, but lovely girls,
Sweetest little things in all the world!"

He loves them and teaches them to fly,
His four daughters that match the sky.
Queen Mum, so happy, helps him out, too,
It's blue boys next time for Backyard Blue!

Yvonne Parks
Dear Editor:

Would you please extend my apologies to the NABS staff for not having written to thank them for a job WELL DONE! The annual meeting was the highlight of the 1982 season for me and left me elated for weeks (until we came back to our rainy Northwest). It was a delightful experience to meet with so many positive people working together to benefit the bluebird. So from coordinator, monitor, and “mother hen” of the Corvallis Trail, thank you, volunteers and staff, for your dedication and time to further a worthwhile cause.

Elsie K. Eltzroth
Corvallis, Oregon

Dear Elsie Eltzroth:

Thanks for your enthusiastic comments about the annual meeting. Its success could be credited to the active participation of everyone present and particularly to the planning of Martha Chestem and Gaye Duncan.

Dear Editor:

I have had bluebird houses on a fence at the ends of fields of corn and hay for several years. My problem was that raccoons raided the nests of Tree Swallows and bluebirds.

In my search for a raccoon-proof pole, I tried some used 1½ inch PVC (plastic plumbers) pipe on six boxes. That year I had no problems with raccoons raiding those houses. The next year (1981) I put all my boxes on PVC pipe.

The last three seasons I have had no problems with raccoons, mice or squirrels. I believe the PVC is a raccoon-proof post. For more information contact me at the address below.

Herbert Naef
Route #6
Merrill, Wisconsin 54452

Dear Herbert Naef:

Thanks for letting Sialia readers know of your success with this type of post. We’d like to hear from others who have tried this. Has experience with this mounting post been universally successful in discouraging climbing predators?

Dear Editor:

Here’s your laugh for the day. I am new to bluebirding and didn’t know that bluebirds will build on top of a chickadee’s nest (and I had never seen a chickadee’s nest). Can you imagine how thrilled we were? Then Sialia arrived and I find that I am not the first to witness such a pleasure.

Little by little I’m learning, but it would surely help to be closer to people who know what they’re doing. No one around here knows about the Society’s work it seems. We’re only 50 miles from Tulsa; surely there’s someone knowledgeable there in the groups of bird lovers.

Charlotte Jernigan
Wagoner, Oklahoma
Dear Charlotte Jernigan:

You may not have known anything when you started but you’re learning fast—and isn’t the process fun? You also do a great job showing the NABS’ slide show in your area. It won’t be long before that part of Oklahoma will know all about the plight of the bluebird, thanks to you.

Dear Editor:

The following was used in graduating exercises with students in our Carroll County Education Center in the spring of last year. It was my privilege to deliver that address which was built around the inspiration derived from observing the habitat of the bluebird.

Song of the Bluebird
The song of the robin is robust and strong,
The song of the mockingbird is melodious and symphonic,
The song of the cardinal is crisp and clear—
But the song of the bluebird is Soft and HAPPY.

Olin Adams, Jr.
Superintendent, Carroll Co.
Schools
Westminster, Maryland

Dear Editor:

I live in a rural area outside of Richmond, Virginia, and study the wildlife inhabiting the area. I have put up two bluebird boxes and last summer (1981) was most pleased to note that they were used by them. They are such delightful little creatures and I am glad to have found an organization, such as yours, which is interested in helping to preserve the species.

Sally Sutherland
Manakin-Sabot, Virginia

Dear Sally Sutherland:

We’re glad that you found us—and that bluebirds found you! We’ve printed below two stanzas of the poem you sent. Sorry, but space limitations prevent our publishing all the poetry we receive in its entirety.

My own heart quickens as I watch you soar in flight
To your hollowed-out log where you’re safe in the night.

Man has created monuments to beauty and power,
But none so lovely or great as you,
little bird, midst field and flower.

The following letter is taken from one written by a NABS member for “Flower and Feather,” the quarterly of the Chattanooga Audubon Society.
The editor has kindly allowed us to reprint it.

Dear Sirs:

I have long contended for some more representative bird as our national avian figure. I agree with the thought expressed by Ben Franklin about some sordid quality in its nature. I hope that I shall not be abused too much when naming him “a glorified vulture.”

For too long we have almost completely overlooked the presence of a truly representative bird as befitting our national emblem. Not only is he presently enjoying national acclaim as the symbol of happiness and domestic felicity, but he has from time immemorial decorated our continent with our national colors—red, white and blue. As to the characteristics which have made our country great, he is not wanting there. Far from the imperious and domineering eagle, he serves as an example of industriousness, fidelity, joy and love. Nor do these heroic traits detract from him in fighting to the death as the protector of his home and loved ones. Never will he intrude in the affairs of his neighbors, disturbing their tranquility, but suffer loss rather than molest another’s prior claim to a roof-tree.

Would that ourselves and our children could claim such nobility of character. Hail the all-American bluebird as the most likely to displace the Bald Eagle as our national symbol on the grounds of his dedication to the above qualifying virtues!

Yours for the Bluebirds,
Laurence D. Sawyer
Ringgold, Georgia

Volume 5, Number 3
BLUEBIRD TALES
Mary D. Janetatos

Spring came slowly; rains pelted blossoming trees, and the birds didn’t know how to react. In my backyard, only the Carolina Chickadees were anxious to nest in April. In and out of three nestboxes they came and went. The bluebirds defended their mainstay box mounted for me by Larry Zeleny just outside my office window. But Mrs. Bluebird never tried to build, only defend. Sparrow control is practiced here, and so the interference by those pests is kept minimal. After checking the three nestboxes in my yard, there were two chickadee nests and no bluebird nest. So I continued to hope and watch.

Not so with Mrs. R.J. Russell of Russell Springs, KY, who reports reading an article in the Louisville Courier. “We’ve only recently put out bluebird houses after seeing some at our new home at Cumberland Lake, KY. One hour after my husband put one up a male was checking it out and next morning the male and female were busy building in it...”

The article in the Courier was one of a large number of spring articles on bluebirds in various publications. Many persons, including Mrs. Ruth Walts, of Georgetown, IN, Bob Miner of Byron Center, MI, and Peggy Metz of Memphis, TN, read a fine article in The Mother Earth News. Early American Life featured “Bluebirds at Gunston Hall,” by NABS member Dennis Brezina to which Mrs. Van Forbes, of Stuarts Draft, VA, and Mrs. Ferdinand J. Snow of Saddle River, NJ, responded. The latter individual found that “The (nestbox) plans were very helpful to my husband; he made 22 boxes (enough) for each member of the (garden) club.” Lucie De Stephano of Ste. Justine de Newton, Quebec, read of NABS in The Birdwatchers Companion. The Rochester (NY) Democrat and Chronicle prompted an inquiry from Loretta Robinson of Almond, NY, among others. Dick McCullough, veteran bluebirder of Garnett, KS, who concentrates his energy in providing habitat for birds, sent a local newspaper article featuring his work with many kinds of birds. He has also placed bluebird nestboxes at Garnett North Lake, along with Wood Duck boxes. Sounds like Dick has really taken on the “cavity nester” approach, as distinct from helping bluebirds only.

Meade Flinn of Alberta, VA, sent a clipping about the Telephone Pioneers bluebird project along South Carolina highways where they had aimed to install a total of 556 boxes. This would be in addition to the 600 bluebird nesting boxes which had been installed by the group in Georgia. With a reported 50% use rate by bluebirds, things look promising. Meade adds, “Good idea for Virginia, also!” Mrs. Murray Splitzer of West Hartford, CT, tells us that she heard of NABS “through a Mrs. Katharine Braun...and was very fortunate to be given a copy of her Saga of the Bluebird” (available in our catalog). Other media coverage included Fran Howe’s TV show originating in Burlington, VT.

From Gregory, MI, Joan K. Bunting writes, “What is life without the bluebird? I hope we never lose them...I have just opened a Foster Care Center for youngsters that have had family problems, etc. I would like to interest them in as much nature as possible.”

NABS member Pauline Kassem ann was featured in the Wooster, OH, Daily Record. But the report on newspaper clippings that most delighted me was from Mrs. Chester A. Smith, Sr. of Hiddenite, NJ, who said, “Found your article in an old Parade section of the Bergen Evening Record. I had used it for packing when we moved from NJ to NC. I am interested in saving the bluebirds. Please send information.” Isn’t it great to know that the printed word just lies there and waits for you to find it when you need it most! Mrs. Robert Greene describes how she picked up a copy of our brochure, “Where Have All The Bluebirds Gone” at the New York State Fair. When she returned to Florida, she found she had misplaced it, but “thrill of thrills, I found it today!”

NABS has been the recipient of a very lovely book Le Retour De L’Oiseau Bleu by Andre Dion, a talented writer and bluebird lover, who lives in St. Placid, Quebec. The text is in French and the beautiful art decorating the pages is breathtaking. If any readers are interested, the book is available

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Sialia, Summer 1983
In a vortex of having a bluebird trail was getting off the ground. The residents of the neighborhood were excited about the idea and were eager to join when they could. The professionals in the area were aware of the NABS slide presentation and were planning to move to Idaho soon and would be working with "...the professionals in the area...". The work of Duncan Macintosh of Lethbridge, ALB, and Art Aylesworth, NABS Board Member, of Ronan, MT, was detailed in a lovely article by Art along with Dennis Flath in the March issue of *Montana Wildlife*. It featured the stunningly beautiful Mountain Bluebird on the cover.

Junius Birchard of Hackettstown, NJ, is determined to get the bluebird story on TV and has written to the Weather Channel as well as to the NBC Nightly News. If he succeeds, I hope he's prepared to fly down here and help with the mail, for TV coverage would make the *Parade* response seem like a warm-up. Charlotte Jernigan of Wagoner, OK, gave me a chuckle when she sent a photo of her son Mark who had attended a costume party dressed as a male bluebird. She says, "That bit of blue taffeta is meant to be your spark for the day." I always enjoy reading the mail because it contains many "sparks," so keep it coming, folks (even if I may not always answer promptly).

Sharon Gill, leader of Cochran (PA) Junior Girl Scout Troop #255, says, "We are also making a scrapbook for Cochran Public Library with information and articles we have obtained from NABS. And we sent letters to neighboring councils and organizations to inform them of our project and need for help for the bluebird. We're hoping for great success!" Beth Rawcliffe, Blue Bird leader, who lives in the residential neighborhood of Aspen Hill (a Washington, D.C. suburb), has decided to try the bleach bottle houses (modified as shown on page 69 of Larry Zeleny's book, *The Bluebird*). "Even if our group effort doesn't pay off this year I plan to keep trying—one of these months or years I plan to see a bluebird in this neighborhood!"

Many correspondents ask about "chapter" activity sponsored by NABS in their area. (See "Presidential Points" by President Anne Sturm.) One of these individuals was Kenneth Hood, of Des Moines, Iowa. He wrote recently that he was going to move to Idaho soon and would be working with "...the professionals in the Birds of Prey Natural Area (Snake River country) and help with the Mountain Bluebird trail program."

Ken Angle, of Rohersville, MD, tells of monitoring one day when he wanted to check to see if the last egg in the clutch had hatched. He "reached in and lifted the female bluebird completely off her nest and out of the box. To my surprise the egg had indeed hatched...while holding the female bluebird in hand, she really looked me over. I then returned her to the nest and replaced the top, but before I could fasten the top down, she came out of the hole and after an insect. While still fastening the screws, the female bluebird returned with her catch and entered the nest box hole...After several weeks went by, the female bluebird brought her fine young fledglings to the birdbath near our patio where I was sitting. As the young bluebirds drank, she flew in on the picnic table beside me as if to say thank you for your help and kindness."

Among the many speakers in NABS' Speakers Bureau is President, Mrs. Anne Sturm. Recently she spoke to the Damascus (MD) Family Community Garden Club.

Art Reinhardt has not only distributed information and nestboxes in his area, Great Falls, VA, but he has also greatly assisted the paperwork load in NABS' central office. Recently he donated a marvelously spacious filing cabinet—more like a metal chest of drawers. This went into the Treasurer's (Chuck Dupree's) office immediately.

From St. Joseph, MO, Jean Marriott writes, "I have given the NABS slide program to various groups here and people are reporting seeing more bluebirds. In the fall of '81 we saw about 30 in a flock and last fall we saw about 20 together, there near a wildlife area...A pleasurable "fringe benefit" of having a bluebird trail was getting out in all kinds of weather, with bluebird friends, to check the boxes and enjoying the beauty of nature."

To all who give the NABS slide program: you can help us spread the word about the benefits of membership in the Society. After your talk, ask anyone who would like a complimentary back issue of *Sialia* to print his name and address (including zip code) on a sheet of paper. Then, send me the list and I'll include their names on Sialia's next outgoing batch. I'll bet we'll stimulate more to join when they can read *Sialia* for themselves. My bet is confirmed by this quote from Nancy Pumper of Webster, MN: "I have just received a copy of your Winter 1980 *Sialia* from a friend & I love it! Being an avid birder, I maintain a bluebird trail of 100 houses, adding a few each year...Please send me a (1983) membership form—and please send me any outdated issues of *Sialia*...I feel as tho I've missed some very excellent bluebird info by not knowing about your society! Please rush!" And so we will "rush" NABS membership information to Nancy. Now if I could only get that idea across to those bluebirds in my backyard...!"
## NORTH AMERICAN BLUEBIRD SOCIETY, INC.

**STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS**

**NOVEMBER 1, 1981 THROUGH OCTOBER 31, 1982**

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<th>Cash Balance - November 1, 1981</th>
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<td>Cash Received</td>
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<td>Sale of Sialia Magazine</td>
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<td><strong>Cash Balance - October, 1982</strong></td>
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Accounted for as follows:

| Citizens Bank & Trust Co. - Checking account | $ 23.94 |
| Citizens Bank & Trust Co. - Savings account  | $ 269.90 |
| Citizens Bank & Trust Co. - Certificate of deposit | 13,685.72 | $13,999.56 |

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**ART CREDITS**

Jon E. Boone: 82, 116.
Shirley Eley Nachtrieb: 87.
Suzanne Pennell Turner: 92, 94
Chives, 98 Indian Pipes, 118.

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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: 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.

Address:
North American Bluebird Society
Box 6295
Silver Spring, MD 20906-0295