



Founded 1904

# THE BLUEBIRD

## The Audubon Society of Missouri

Vol. 38, No. 1

February, 1971

### ENVIRONMENTAL ELECTION RETURNS

The November 3, 1970 elections marked the coming of age of environmental politics.

Conservation organizations working for the defeat and election of particular candidates consider the results a triumph for the environment. In addition, more than one billion dollars in anti-pollution bond issues won approval (despite the "taxpayers' revolt" that was turning down most other money issues), as did some \$100 million for parks, wildlife preservation, and recreational facilities.

The League of Conservation Voters, political arm of Friends of the Earth, backed 20 candidates and elected 16. Environmental Action's publicity on their "Dirty Dozen" helped defeat half the list (unfortunately, not including our neighbor Bob Dole in Kansas). Missouri is fortunate to already have senators who voted against the SST.

#### PASSED

ALASKA — \$2,300,000 in park bonds and \$11,000,000 in sewage facility bonds.

CALIFORNIA — \$250,000,000 in sewage bonds and \$60,000,000 for recreation facilities and wildlife protection bonds.

FLORIDA — Authorization for increased bond issuance for sewage facilities and restrictions on disposal of state lands.

ILLINOIS — \$750,000,000 in bonds for antipollution facilities, primarily sewage treatment plants.

MAINE — \$4,000,000 for oil spill clean-up bonds and special land-use taxes.

NEVADA — \$5,000,000 in park bonds.

NEBRASKA — Special land-use taxes.

OREGON — Restrictions on shoreline development of 500 miles of rivers designated as scenic waterways.

RHODE ISLAND — An environmental bill of rights.

VIRGINIA — An environmental bill of rights.

WASHINGTON — \$41,000,000 in recreation facility bonds and \$25,000,000 in water pollution abatement bonds.

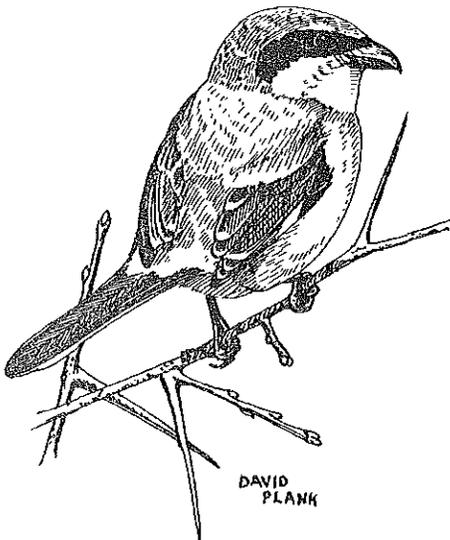
#### DEFEATED

CALIFORNIA — Proposal to divert gasoline taxes to antismog work and rapid transit.

MASSACHUSETTS — Special land-use taxes.

RHODE ISLAND — \$3,100,000 for sewage bonds.

WASHINGTON — Ban on nonreturnable beverage containers.



WELCOME TO OUR NEW SECRETARY, Mrs. E. R. Kriege, 6123 Waterman Blvd, St. Louis, 63112  
And our thanks for many years of faithful service to Alberta Bolinger.

## BIRD SURVEY --By Dick Anderson

In an effort to catch up with seasonal bird surveys, the following is a brief summary only from December 1, 1968, to August 31, 1969. It is hoped that contributors will understand why many reports were left out.

## WINTER: DEC. 1, 1968 to FEB. 28, 1969

Horned Grebe--21 at Gravois Mill, Mo., Dec. 24, 1968 (D.E.). White Pelicans left Squaw Creek early, only two remained in early Dec. (J.H., F.L.) Whistling Swan--two at Squaw Creek Dec. 8 (F.L.) and one there in Feb. (H.B.). One wintered at Mark Twain Refuge (S.V.) and two were seen on Dec. 21. At least one Ross' Goose wintered at Squaw Creek. Oldsquaw--one at Gravois Mills Dec. 1 (D.E.). Late ducks at Mark Twain on Dec. 21 included 3 Ruddy, 13 Wood Ducks and 8 Shovelers.

Black Vulture--112 at Mingo, according to Mgr. John Toll (J.H.). Hawks were generally down, but wintering eagles were high. Four Golden and 135 Bald Eagles used Squaw Creek during the winter. 198 Bald Eagles were at Mark Twain on Dec. 21 (D.A.), but 285 were counted in that area in early Jan. (S.V.). Two Golden at Shell-Osage Feb. 15 (N.F.).

Rare gulls at Alton Dam near St. Louis in Jan. included Glaucous, Iceland, Black-backed, and Black-legged Kittiwake. F. Lawhon found a saw-whet owl at his home Jan. 6.

Red-shafted Flickers numbered at least 25 in St. Joseph (F.L.), one at Springfield, (N.F.). A fish crow was identified at the Big Oak census on Dec. 24 (J.H.). A Clark's Nutcracker was at a suet feeder at Pleasant Hill, Mo., and observed by Helen Williams and Lilyan Warner (FIDE Dave Easterla). At least one short-billed marsh wren wintered at Mark Twain Refuge (S.V.). Brown thrashers showed up in many areas, even St. Joseph (J.H.) and Maryville (D.E., M.R.). Floyd Lawhon reports one, possibly two, Townsend's Solitaires at Ashland's Cemetery between Dec. 14 and Feb. 15. This is the fifth record in ten years. Western Meadowlarks pushed well eastward this winter. A few were in southeast Mo. (J.H., R.R.) where they are seldom observed. 25 were found near Washington, Mo. (D.Hayes).

After an absence of two years, Mo. birders experienced a good invasion of northern erratics. Good numbers of red-breasted nuthatches and pine siskins are usually a good sign that rarer species will join them. Evening grosbeaks made a big invasion. Mrs. Henry at Bowling Green had 30 at her feeder, Kansas City had at least two flocks of 15 each and St. Louis had many flocks, some as many as 50. They reached southern Mo. also, at Springfield (N.F.) and Cape Girardeau (R.R.). Strangely enough, only one was reported at Maryville (R.R.) and none at St. Joseph. A few common redpolls made it as far as St. Louis in mid-Dec. (D.A.) but were common at St. Joseph (F.L.) and Maryville (M.R., D.E.) with flocks up in the 40's. The only red crossbills were a pair reported from Cape Girardeau (R.R.). Three "spotted" towhees were at St. Joseph Dec. 29.

## SPRING: MARCH 1 to MAY 3, 1969

Spring of 1969 was cold and late. The big break came on May 3 when reporters from all over the state observed a large influx of land birds. Then followed for two weeks a more or less continuous heavy flight, not only in eastern Mo. along the Mississippi River, but in western Mo. as well. The Myers reported the best migration in three years.

Highlights of species reported as follows: Probably the largest group of horned grebes ever observed in Mo. was 152 counted at Table Rock Dam on April 13 by John Hamilton. Over 100 were seen there by Nathan Fay on April 19. An eared grebe in southeast Mo. by R. Rowlett was rare, but were scarce in nw Mo. A western grebe was found by Easterla May 11 at Squaw creek and later seen by others.

## BIRD SURVEY (continued)

A slight decline in cattle egrets was noted at Bertrand heronry in southeast Mo. (P. Heye) but increased notably in St. Louis (E.C., D.A.). One was at Swan Lake Mo. (May 15--Kline), one or more at Squaw Creek in May (F.L.), and two at Maryville May 9 (E.E.). Five glossy ibises were reported in southeast Mo. (R.R.) and one at Busch Wildlife near St. Louis April 29. (E.C.). Four white-faced ibises were found at Squaw Creek in mid-April with one staying till May 23 (F.L.). Geese at Squaw Creek built up to 460,000 in mid-March. Ross' geese were seen there until April 20 (F.L.). Diving Ducks were unusually heavy at Squaw Creek during March and April (F.L.). A surf scoter was found at the Maryville Water Plant April 19 (D.E.). Of note near St. Louis was a European Widgeon seen at Gilbert Lake, Ill., March 30 by Jack VanBenthuyzen. A male cinnamon teal stayed at Squaw Creek for 3 weeks during April (F.L., D.E., J.H., H.B.).

A melanistic broad-winged hawk at Squaw Creek in mid-April bore a striking resemblance to the black hawk of southern Texas (F.L.). Hawks in general were again down in numbers. A pair of greater prairie chickens were observed near Sumner, Mo. This is the first sighting in recent years (Kline). Two sandhill cranes were at Squaw Creek March 16 (F.L.).

Flooding rivers provided good habitat for shorebirds. Squaw Creek attracted both godwits and curlews (F.L., D.E.). A whimbrel also showed up on the Ill. levees (D.A.). Shorebirds near Cape Girardeau were seen in good numbers, for instance 60 white-rumped sandpipers in mid-May (R.R.).

Both cuckoos were reported up by most observers. Two saw-whet owls were at Squaw Creek Mar. 9 (D.E.). A poor-will was seen and heard at Camp Towanyak on May 7 (M.L.M.).

Passerines were late in general, but seen in large numbers during May. Migrants appeared at Cape Girardeau, St. Louis, and Kansas City simultaneously on May 3. As many as 34 fish crows were seen in Mississippi Co. on March 16. Fewer individuals were seen later, indicating a possible migration of this species (R.R.). Red-breasted nuthatches were noted in Cape Girardeau in late April (R.R.), and early May at St. Louis (E.C.) and Maryville (M. Robbins). The Myers not only found good numbers of warblers, but many eastern species not commonly seen in western Mo., or eastern Kansas. These included prairie, Gape May, mourning, sycamore, Canada, cerulean, and hooded. Their real find, however, was a Swainson's Warbler seen and heard May 23. (M.L.M.). Sherman Reid and N. Fay of Springfield reported good warblers in early May including hooded and black-throated blue warblers. A Connecticut warbler was found within Maryville city limits May 22 and 23 (M. Robbins).

Purple finches were still abundant in April at St. Louis (E.C.). The Myers had banded 143 purple finches by the end of March. Evening Grosbeaks were still at Cape Girardeau on May 2 (R.R.) and at St. Louis on May 10 (E.C.). A late redpoll was at St. Louis April 3 (E.C.) and up to 25 in early March at Maryville (D.E.). A painted bunting arrived at Shawnee-Mission, Kansas, on May 4, and a male at Eagle Rock, Mo., May 30 (D.E.). Three Smith's longspurs were found at St. Charles Co. March 16 (D. Hayes) and 60 near Maryville March 22 (D.E.).

## SUMMER: JUNE THROUGH AUGUST, 1969

The summer was generally hot. Southwest Missouri (Springfield) was very dry (N.F.) while July storms brought heavy rains and some flooding to most of the state.

Pied-billed grebes bred successfully in southeastern Mo. (R.R.). Herons were numerous during late summer where flooding had occurred. Squaw Creek listed over 600 greatblue herons, 100 little blue herons, and 20 cattle egrets, and also 50 yellow-crowned night herons (F.L., J.H.). 50 little blue herons were at Schell-Osage in August (N.F.). At St. Louis 300 little blue herons and 700 common egrets were noted. A total of 130 cattle egrets were counted in flocks in the St. Louis area (D.A.) An adult Louisiana Heron was observed as was a glossy ibis just across the Mississippi

## BIRD SURVEY (continued)

River from Cape Girardeau on June 28 (R.R.). We believe this to be only the second record for the heron in Illinois. Three Mississippi kites summered near Charleston, Mo., but no young were seen (J.H.). A peregrine falcon was surprising at Squaw Creek on July 27 (F.L.). A purple gallinule was at Duck Creek in early June by Jim Hanson.

Shorebirds, like herons, were common in flooded areas. Squaw Creek highlights included a large number of peeps still present in early June, a willet and a snowy plover in July (F.L.). Five piping plovers and 17 buff-breasted sandpipers were found there in August (M.R.). An avocet was found in Mississippi Co. August 24 (J.H.). A black-necked stilt was found in St. Charles Co., Mo., in late August. A second stilt was found on the Illinois side of the Mississippi River at the same time. Both were seen by hordes of St. Louis birders (E.C.).

Yellow-billed cuckoos were up at St. Joseph (F.L.), while 12 pair of black-billed cuckoos were nesting in Nodaway Co., in northwest Mo. (M.R.). A pair of barn owls nested successfully at Squaw Creek (F.L.). Red-headed woodpeckers were up at St. Joseph (F.L.). Thirteen western kingbirds were counted in an hour near St. Joseph (F.L.). Short-billed marsh wrens were found on two breeding bird counts in northwest Mo. in June (D.E., F.L.). Three pair of cedar waxwings bred in the Maryville area (M.R.). A pair of hooded warblers nested at Pere Marquette Park, Ill. (S.V.). Bobolinks again nested in northwest Mo. (D.E., F.L.). About 50 bred at Rancho Del Rayo (M.R.). Yellow-headed blackbirds were an abundant breeder in northwest Mo. (F.L., J.H.).

Blue grosbeaks continue to breed in Mo. as far north as north of Maryville. Painted buntings nested in southwest Mo. (N.F.). It is not unusual for crossbills to summer in unusual places following a heavy winter flight. Although this is rare in Mo., we have three such records during this summer. Bob Bright caught a red crossbill on July 12 in southwest Mo. After feeding the bird sunflower seeds, it was released in good condition. On August 3, a pair of white-winged crossbills were seen feeding on a hemlock in Kansas City by many birders (Jo Isenberger). A white-winged crossbill was found dead July 22 under a hemlock at Charlie Bell's home (M.R.). Two nesting colonies of lark bunting were found in northwest Mo. on the breeding count in early June. One was near Tarkio, Mo., with about 12 birds (D.E.). And a second southeast of St. Joseph with three pair (F.L.). Adults were seen carrying food at a later date. This is the first breeding record for Mo. Two pair of vesper sparrows nested at Rancho Del Rayo and several young were seen in July (M.R.).

D.A.	Dick Anderson
H.B.	Harold Burgess
E.C.	Earl Comfort
D.E.	Dave Easterla
N.F.	Nathan (Irving) Fay
J.H.	John Hamilton
F.L.	Floyd Lawhon
M.L.M.	Mary Louise Myers
M.R.	Mark Robbins
R.R.	Richard Rowlette
S.V.	Sally Vasse

PLEASE SEND YOUR IMPORTANT SIGHTINGS, INCLUDING EARLY AND LATE SIGHTINGS, TO DICK ANDERSON, 1147 GRENSHAW DRIVE, ST. LOUIS, MO, 63137.

this brings our records up through August, 1969. We hope the next issue can bring us closer. However, these will always be behind-time since they can't be put together until all the data is in, or else we'll lose the very sightings we are trying to keep permanent records of. IF YOU HAVE ANY 1970 RECORDS, PLEASE SEND THEM TO DICK NOW. Thnx.

RICHARD P. GROSSENHEIDER, ZOOLOGIST AND ARTIST, HAS WRITTEN AND ILLUSTRATED A FIELD GUIDE TO THE MAMMALS, MAMMALS OF MICHIGAN AND MANY ARTICLES FOR MAGAZINES, PERIODICALS AND SCHOLARLY JOURNALS. HIS APPRECIATION AND AFFECTION FOR ANIMALS AND BIRDS IS COMBINED WITH ACCURATE OBSERVATION AND A RARE ABILITY TO DEPICT THEM IN VIGOROUS, VITAL ACTIVITIES. HE GIVES HIS SUBJECTS THE SAME RESPECT HE WOULD GIVE A HUMAN PORTRAIT.

The Missouri State Council on the Arts will circulate an exhibit,

" WILDLIFE PAINTINGS BY

# RICHARD PHILIP GROSSENHEIDER "

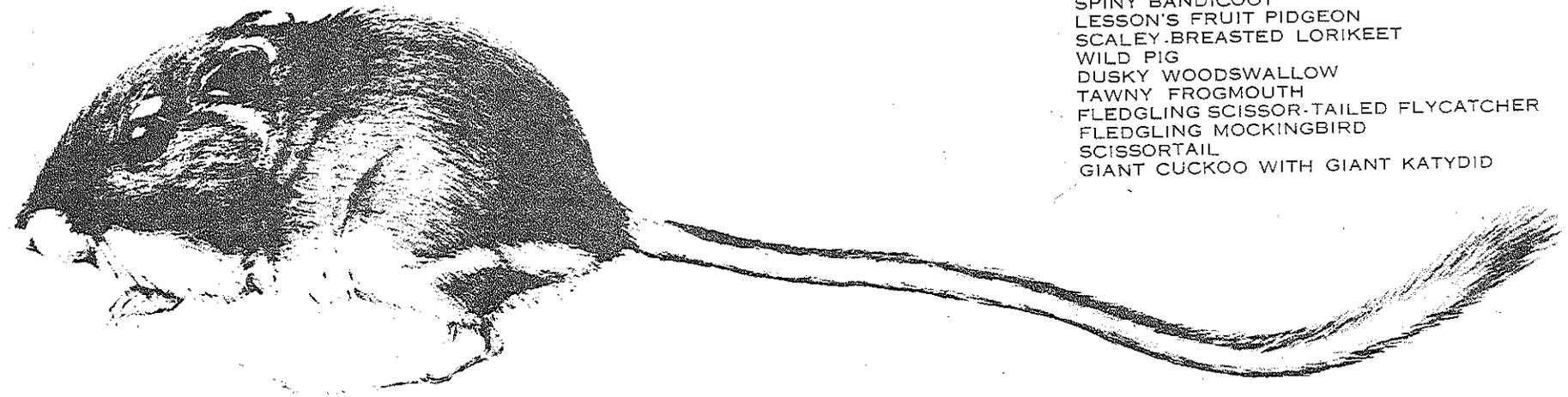
during the year 1971. Unquestionably the nation's foremost mammal artist, Dick is a former president of The Audubon Society of Missouri.

The exhibit will consist of 29 works and will include many of the original drawings that were used in the "Field Guide to the Mammals" of the Peterson series. The Council is anxious to have the exhibition receive the widest circulation possible, and is particularly interested in placing it in lesser-sized communities.

WATERCOLORS:

- LIFE HISTORY OF THE WHITE-FOOTED MOUSE
- NEWLY-BORN COUGAR KITTEN
- LEAST WEASEL
- HEAD OF A WOOD THRUSH
- STRIPED SKUNK
- COLORADO KANGAROO RAT

- SPINY BANDICOOT
- LESSON'S FRUIT PIGEON
- SCALEY-BREADED LORIKEET
- WILD PIG
- DUSKY WOODSWALLOW
- TAWNY FROGMOUTH
- FLEDGLING SCISSOR-TAILED FLYCATCHER
- FLEDGLING MOCKINGBIRD
- SCISSORTAIL
- GIANT CUCKOO WITH GIANT KATYDID



The exhibiting community will have certain responsibilities, primarily the packing and shipping of the paintings to the next stop, and the security and insurance of the exhibit while hung.

Anyone who wishes to arrange for a showing of these works should contact the council. This is a grand opportunity for us to bring the works of Grossenheider to the attention of the public and to enhance nature appreciation. If you wish to arrange for an exhibition of these paintings or want additional information, contact Mr. Joseph O. Fischer, Admin. Ass't

PRINTS:

- GREY SQUIRREL SERIES
- EXAMPLES FROM A FIELD GUIDE TO THE MAMMALS
- EXAMPLES FROM MAMMALS OF MICHIGAN

PHOTOS OF DRAWINGS:

- OBSERVATIONS OF THE BEHAVIOR OF THE GREAT BLUE HERON

THE MISSOURI STATE COUNCIL ON THE ARTS  
SUITE 213, 7933 CLAYTON ROAD  
ST. LOUIS, MISSOURI 63117      PHONE: 314/721-1672

DAVE AND PATTI EASTERLA are now settled at Purdue, and enjoying it all. Address is Dept. of Forestry and Conservation, Purdue University, Lafayette, Indiana, 47907

REPORT FROM THE FALL MEETING--Mark Robbins

The weather was great! Birding lousy. Bob Bright gave us rides in his boat looking for birds. Most of the members got unbelieving close to Wood Ducks from Bob's boat. I counted around eighty members present at the meeting. I am sure I don't have all the birds listed, but here is a majority of them.

OCTOBER 23, 24, 1970  
BRANSON, MISSOURI

Piedbilled Grebe  
Great Blue Heron  
Ducks: Am. Widgeon, Wood  
Turkey Vulture, Sharp-shin, Red-tail, Sparrow Hawks  
Bobwhite  
Coot, Killdeer, Mourning Dove  
Great Horned Owl  
Chimney Swift, Ruby-throated Hummingbird  
Belted Kingfisher  
Woodpeckers: ys flicker, pileated, redbellied,  
redheaded, hairy, downy  
Wood Pewee  
Carolina Chickadee, Tufted Titmouse, Wb nuthatch  
Mockingbird, catbird  
Robin  
Ruby-crowned kinglet  
Loggerhead shrike, starling  
Nashville and Myrtle warblers  
House sparrow  
redwing blackbird, grackle  
summer tanager  
cardinal, indigo bunting  
Goldfinch  
Sparrows: chipping, field, white-throated



GOLDFINCH

COLES REPORT ON SPECTACULAR HAWK FLIGHT

Dean and Elizabeth Cole, enjoying their retirement as usual, were on hand this fall on Skyline Drive at Duluth, Minnesota (hill right in the middle of the city), when a record 26,173 hawks were recorded by official counters. The previous high was about 15,000 counted in 1960. A strong west wind and good weather concentrated the Lake Superior birds on the west side. Most were broad-wings, with sharpshins, sparrow, and Coopers also included in sizeable numbers. "It was just a skyful of birds forever" said the Superior National Forest spokesman, Ray Naddy. We're lucky the spraying craze of the east and southeast has not been as violent in the midwest and Canadian prairies and taiga--Hawk Mountain, Pennsylvania, sees fewer and fewer hawks as DDT and other pesticides kill and sterilize them.

SEND YOUR CHRISTMAS CENSUS REPORTS TO DICK DAWSON, 5600 E. GREGORY:, KC., MO, 64132,  
FOR NEXT ISSUE OF BLUEBIRD

*I need all kinds of your natural  
articles, drawings, photos - not just birds!*

## NOTES FROM THE 1970 SPRING MEETING

Warm south breezes greeted close to forty birders when they gathered at the beautiful Baxter area on Table Rock Lake, May 9th and 10th. There was a field trip Saturday morning to a bluff overlooking the lake to the north, there were boat trips and more field work in the afternoon. Saturday evening Bob Bright, our host, showed some of his slides of birds and moths, and Sunday morning more field trips.

Altogether 91 species were found. The Coles found a Western Kingbird at the end of Lake Road H-20 where there is an open meadow on the lake. John Hamilton had a Roadrunner, Leonard Confer, Veeries. Prairie Warblers were seen by many. Painted Buntings were near the boat dock a few days before we arrived, but failed to appear for the meeting. No Scissortails were found, although known to be in the area.

## BIRDS SEEN, IDENTIFIED, AND REPORTED

Horned Grebe

Hérons: Great Blue, Green

Blue-winged Teal

Turkey Vulture, Red-tailed and Broad-winged Hawks

Bob-white

Killdeer, Spotted Sandpiper

Mourning Dove

Yellow-billed Cuckoo

Chuck-will's-widow, Whip-poor-will

Chimney Swift, Ruby-throated Hummingbird

Belted Kingfisher

Woodpeckers: y-s flicker, pileated, red-bellied, red-headed, hairy, downy

Flycatchers: e. kingbird, w. kingbird, crested, phoebe, Traill's, Least, Wood Pewee

Swallows: Rough-winged, Barn, Purple martin

Blue Jay, Crow, Carolina Chickadee, Tufted Titmouse, White-breasted Nuthatch

Wrens: House, Bewick's, Carolina

Mimics: Mockingbird, Catbird, Brown Thrasher

Thrushes: Robin, wood thrush, Swainson's, veery, Bluebird

Blue-gray gnatcatcher, cedar waxwing, loggerhead shrike, starling

Vireos: white-eyed, red-eyed, warbling

Warblers: black-and-white, prothonotary, worm-eating, Tennessee, Nashville,

parula, yellow, myrtle, prairie, Kentucky, yellowthroat, chat, Wilson's, redstart

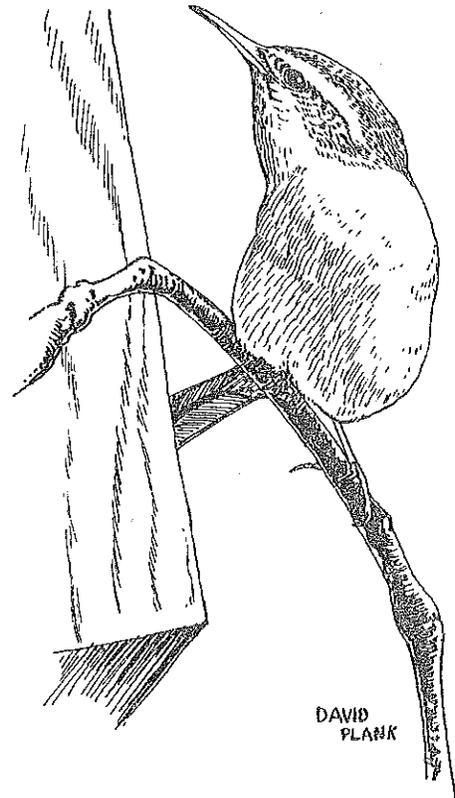
House Sparrow

Icterids: E. Meadowlark, redwing, orchard oriole, Baltimore oriole, grackle, cowbird

Scarlet Tanager, Summer Tanager

Finches: cardinal, blue grosbeak, indigo bunting, dickcissel, goldfinch, r-s towhee

Sparrows: lark, chipping, field, white-crowned, white-throated, Lincoln's.



DAVID  
PLANK

*Bewick's Wren*

THE BUDDING TREES

by James Jackson

The last brittle oak leaves rattle to earth, overpowered by winter's chill winds. They are the final remnants of autumn's red and golden millions which Nature more gently returned to the soil--the soil which all dead leaves enrich and protect.

Now the woods are completely bare and the forest floor a dull matted brown. Under the warm blanket of old leaves lie dormant the seeds and shoots of our early wildflowers, all awaiting the last spring thaw.

And the trees are waiting, too. Each one has a pattern for spring wrapped up in thousands of hard-packed buds. Even before autumn began painting last year's leaves those myriad buds had been planned and formed for the next spring. Soon many of them will be forced open by the pressure of new-growing leaves. Others will eventually expand into flowers. Some buds are now merely helping to sustain winter-hungry songbirds. But all of them have a predesigned purpose.



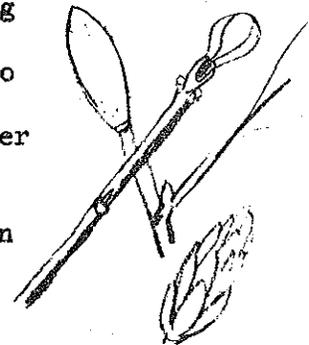
The winter buds of every woody plant, whether tree or shrub, contain miniature embryos of fully developed leaves or flowers. Most of them began their existence last spring at the height of that year's growth. Then once a plant's budding pattern was achieved, during late summer, it was ready for fall's blazing colors and for the long winter.

We seldom notice next year's latent buds during the summer. Nevertheless, they are always there, each one overshadowed by the leaf next to it. Only one of our native trees hides its buds until winter. The sycamore has its leaf stems hollowed at the base in such a way as to surround and cover the buds. After autumn's defoliation they are finally exposed to await the next growing season.



By mid-winter the various species of trees modestly display their diagnostic buds as the only promise of life. A number of them even show us which buds have what intended purpose. The flowering dogwood, for instance, bears bulb-shaped flower buds extending from the twig tips and narrow pointed leaf buds spaced in pairs along the stem.

On any large tree the number of winter buds may add up to millions. If all of these potential sprouts were to fulfill their growth next spring, the eventual tangle would put any brier patch to shame. But many living buds will not open. By some mysterious law of competition only those shoots which can add to the tree's symmetry will begin to grow. Some buds may remain inert for several years, then open up as if by some inherent logic to fill a gap in the foliage. Others shrivel away as the need for them is outgrown.



The most important buds on any plant are those at the ends of the twigs, the terminal buds. Their purpose is to house a growing point for the spreading foliage. If they are lost during winter or if a twig is snapped off there are others to take over the job. In such cases, or with the sycamore which has no terminal buds, one or more lateral buds will get all the food and become the growing point.

In spring as the stems reach out for sunlight they leave a ring of leaf scars to show where they began to grow. A young cottonwood's greenish new stems may stretch up eight to ten feet, or even more. But on a mature oak the twig growth may measure but a few inches yearly. The many short stems which invariably sprout from the branches and trunks of trees are usually stunted by a lack of sunlight. Natural pruning of branches along the shaded trunk is one of the best examples showing how competition for sunlight exerts itself to shape a tree.

By these intricacies of growth it can be seen that the symmetry of a tree or shrub is no haphazard arrangement. Instead it is a planned mosaic guided by Nature's immutable laws, the branch pattern a predesigned skeleton for spring's canopy of greenery.

## 1970 BLUEBIRD NESTING BOX STUDY

--by Burrell Pickering

For the third consecutive year, the Webster Groves Nature Study Society has conducted a weekly Bluebird Nesting Box Survey at Sunny Ranch in Warren County. Detailed information was recorded each week-end for each box as to if occupied, kind of bird, number of eggs, number of young, number fledged, and the behavior pattern of the bluebirds as well as any unusual observations. Eighteen families and five groups of students took part.

Results from the 40 boxes showed 28 were used for the first brood, 18 for the second, only 5 not used at all. 212 eggs were laid, average of 4.6 per nest. 54 eggs were infertile or deserted, 10 disappeared, 148 hatched. 10 young died in the nest, 1 disappeared, 137 fledged, which was 65% of the eggs, 92% of the hatched young, with average of 3 fledged young per nest. 50 house sparrow nests were removed during the study, 124 eggs removed.

In 1968 there were 20 boxes, 23 nests, 2.7 young fledged per box.

In 1969 there were 36 boxes, 34 nests, 2.3 young fledged per box.

In 1970 there were 40 boxes, 46 nests, 3.0 young fledged per box.

## THE AUDUBON SOCIETY OF MISSOURI

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A Dean Cole  
Artist...David Plank

(drawing of immature bluebird)



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