The BLUEBIRD

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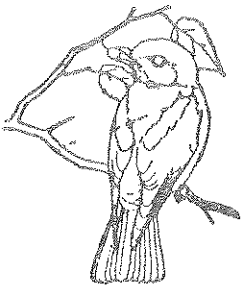

The Audubon Society of Missouri

Founded 1904

It is the purpose of the Audubon Society of Missouri to further conservation education in all its aspects with particular emphasis on wildlife. This purpose will be implemented by assisting in securing legislative controls, when necessary, the establishment of refuges and in the promotion of habitat improvement. The Audubon Society of Missouri is dedicated to the proposition that only through education can a total conservation consciousness be insured and will constantly try to further this education at all levels.

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THE BLUEBIRD

VOL. 31 No. 3

EDITORIAL

Audubon Society members were once again reminded of the vulnerability of wildlife to the ruthless bloodletting of a few determined monsters. A total of 439 mourning doves were killed by three "sportsmen" in a few days in southeast Missouri. Federal and state conservation agents found these birds when they searched the automobiles of the trio. It is sincerely hoped that such actions as this will hasten the day when the mourning dove will take its rightful place on the protected list. One of the sidelights of this story is the difficulty it makes for those with a vested interest in hunting to maintain any sense of self respect when they ballyhoo the "challenge" presented the "expert" marksman by the most difficult of targets, the illusive will-o-the-whisp, the mourning dove. Anyone with any knowledge of the out-of-doors knows this bird is probably the least suspicious of our larger songbirds and that approach to within easy shot gun range can be accomplished with little difficulty. When a party of three kill 439 birds in three days, we can not help but wonder about the stories appearing in conservation commission releases that instruct hunters to carry many, many shells when going dove killing, since even though they are an expert shot they will be up against a target that is all but supernatural in its ability to escape their blasts.

We cannot but feel sympathetic towards the sensitive soul who entered wildlife work because of his deep felt appreciation of the wildlife community, only to find that he is pushed into a commercial field where his very job depends upon the number of hunting licenses he and his fellow workers can sell. All methods are used to increase these sales even to assuring the inhibited city dweller that "they too can become a sportsman"—"buy a license and take to the fields after the most exasperating of targets, the mourning dove". This sort of thing will never end until those in charge of the conservation of our wildlife resources are paid from funds derived from the general public rather than from the "sportsmen" and that includes those who kill 439 doves.

WHY NOTHING GETS DONE ABOUT PESTICIDES

A Case History
by
Alfred G. Etter

(This is a record of experiences and conversations which actually occurred. I have attempted to preserve the conversations accurately, though in some cases wording has been altered for the sake of brevity or clarification. To protect individuals and agencies involved, identities have not been given.)

Eighteen students, a fellow professor and I stood beside a small pond in the city park watching fish die. Carp of all sizes lay on their sides, breathing their last. Carp can stand almost anything. What was the matter with them? The students wanted an answer, but where could I go for conclusive evidence of the cause of death of these fish?

I had one good lead. It was late fall and there were three elm trees in the grove around the pond. There could be a connection. Because elms are dying in vast numbers there has been an ambitious program to save them by any means, fair or foul. Favorite weapon isthe poison, DDT, sprayed in late fall or spring among the branches to protect the tree from infection by bark beetles which carry the disease spores from elm to elm. Could DDT have killed the fish?

I called the city forester and asked if the park had been sprayed. He asked suspiciously, "Were you interested in DDT or something like that? What is your name? Why do you want to know?" I didn't realize that I was asking for classified information. After all it had been announced in thepaper that they were going to spray. "Yes," he said finally, "we sprayed the park on Tuesday." I told him about the fish in the pondand hung up. There is a greatdeal of secrecy about these spray programs which I do not understand.

When I phoned thenewspaper, I asked to speak to a certain reporter who had recently written an enthusiastic article about the benefits of spraying programs. He had implied that statements about the dangers of sprays to wildlife were unfounded. I told him I was investigating a fish kill in the park and though he would be interested. To my surprise, he said he was quite aware that spray could kill wildlife. His township once sprayed from the air for mosquitoes, and he had found a greatmany fish killed afterwards. He explained that when he wrote articles for the Agriculture people, he was more or less obliged to say what they told him. He thanked me for my interest, but doubted that the story would get into print.

If I were going to learn whether the spray had actually caused the fish to die, I would have to get analyses of the water and the fish. I called the head of the Fish Division of the Conservation Department, and asked if they had any interest in such a situation. "No," he said, "we have no interest, for two reasons. One, it is on private property, or city property, which is the same thing as far as we are concerned. Second, there is nothing of any economic value involved here. No oneis concerned about carp."

"I am," I said, "--not about carp in general, but carp are living things, and through some mistake these particular carp have been killed. If they have been killed with spray, the poison will be distributed to raccoons, crayfish, muskrats, eagles, ducks, beetles, snails, flies or conceivably even people. Though the fish dies on city property, the DDT is not going to remain on city property."

"Now you are talking about something else," he said. "Our Division hasn't anything to say about this, but some of us are very conserned about it. During the war my supply depot was swamped with requisitions from thePhilippines for mosquito nets. Then, all of a sudden, we had no business at all. They sprayed the islands with DDT. It was amazing. I went there myself and you could see windrows of insects. Some of us made some unpopular observations which could not be proven, but which we felt were correct. Formerly, as a platoon marched along the road, it would be followed by all kinds of animals: monkeys, dogs, and the like. Now we saw none; and whereas we had always enjoyed the rick birdlife in New Guinea and other islands, on the Philippines there simply was no such life. What you are talking about interests me, but we cannot help you. Good luck to you in your efforts."

In the phone book I looked through the three pages of fine print under State Public Health. There were plenty of laboratories for everything except chemical poisons. As a last resort I tried the Toxicology Lab, a crime detection agency. I told my story to a rather officious M.D. "My dear man," he said, "this laboratory is for the detection of crimes, and our only concern is the analysis of human victims. If someone files a complaint, then we can go to work, but only on people. If a person files a complaint that his dog has been poisoned, then he must take it over to the State Department of Agriculature Lab. Are you willing to file a complaint?" I was forced to admit that I was not. "Why don't you go to the entomology or plant pathology departments at your university? They will certainly help you."

"I am not very optimistic about that approach," I said. "In the first place, they wouldn't work on a fish anymore than you would work on a dog. In the second place, they have no

facilities to analyze for the poisons which they recommend. in the third place, they would be placed in a difficult position, since they are the ones who draw up specifications for spray programs. In the fourth place, they would probably prefer not to participate in anything which might tend to refute the generally held views of the interests that support their research."

"Do you mean," the Dr. exclaimed, "that at a state university you have biases likethat! I thought that there would be dozens of places where you could get help!" He continued in a lower voice, "You know, I have read this Carson girl's book about pesticides and I think there is much in what she has to say. We used to have robins around our house right along, but we haven't had any for some time now. Why don't you try the State Water Resources Commission?"

I called the biologist there and explained about my fish. "Yes," he said, " can well believe they might be dying of DDT. We investigate large fish-kills around the state on public waters, but I would say that we were not concerned about a few fish on what is tantamount to private property. We have very good working relations with the city, with the Conservation people, and with Agriculature, and we would rather not become involved." Then, speaking more closely into the phone, he said, "Now we have a man in our lab who has devised a rapid system of analyzing water for DDT. If you can bring a chemist with you, some water from your pond could be analyzed while he is demonstrating how his analysis is made. It would be an educational contribution. We are not supposed to accept samples from outside the organization. Getting the fish analyzed is far more complex. We have no facilities for that. The Ag Lab could do it for you." Then he hesitated. "I myself am an ecologist. Following up on these spray programs really is a serious problem. Nobody is handling it. I wish we could help you more."

To take advantage of the biologist's offer to analyse the water, I called an ornithologist who had been a pioneer in reporting declining bird populations following Dutch elm disease programs. I told him about the fish, and asked if he would like to have one of his students learn a new technique while the chemist analysed my pond water, surrepticiously. To my surprise, he also preferred not to get involved. He had more birds in his icebox than he could possibly get analysed and didn't particularly relish starting on fish. Moreover, his studies on bird mortality in Dutch elm disease programs were getting into enough trouble without taking on any more. (I knew that there were several people who would like to see him banished. When he gave talks, it was not uncommon for observers to be on hand waiting for him to make a statement that

he could not back up.) He had found that it was a slow process to get statistical data on the effects of spray on wild bird populations. In addition to the difficulties of the research itself, hehad to get a grant, arrange for use of chemical facilities in another department, find a student interested in both birds and chemistry, and train him to be proficient in both. It took three years and cost at least $10,000. It was an inefficien way of getting samples analyzed, but he had found it the only way

Although the ornithologist finally offered to analyze my fish, I knew his analyst was rushed for time, so I appealed to the chenist in charge of the State Department of Agriculature Lab "No," he said, "I don't think this would normally come under our jurisdiction. Possibly you should try the State Water Resources Commission." I told him they had suggested I call him. "Well, we make analyses as they relate to our official responsibilities. We analyze pets and farm animals at the request of veterinarians, but mainly our work is regulatory in nature. We are concerned with contaminants in human and animal food supplies. This keeps us more than busy since we can't grow foods or feeds without chemicals. In addition, right at the moment we are busy determining the purity of chemicals that are being used in beetle control program on 80,000 acres so that we will know exactly what concentration we are using. It also serves as a good check on the supplier."

I could understand the need for precise concentrations, but it seemed ironic that we should be so busy applying sprays that we do not have time to analyze for the damage they may be doing.

"Analysis for DDT is very expensive," continued the chemist. "It takes a chemist two days to run duplicate samples of two specimens. It probably costs us close to $50 a test. Commercially, it would cost twice that. You are asking us to spend $100 on your project. We can't do it."

"Is there no quicker method?" I asked.

"There are several. One is the bioassay, where flies are fed the suspected material. If they remain alive, you can forget about further tests. One of our most treasured possessions is a 30-year-old colony of flies that have never acquired an immunity to DDT. The food and air they receive have to be kept free from DDT contamination, and no wild fly can be allowed to get in the cage to share his immunity. They are a real care. Then there is the gas chromatography method. The set-up for this costs from $10,000 to $50,000. So far the legislature has not seen fit to buy us anything like this. I'm sorry that I can't help you. You might contact the Plant Industry Division of the State Department of Agriculture and if they are willing to investigate this affair they could collect samples and bring them over to us. Actually, though, what you are doing comes under the heading of research, and research belongs to the

Universtiy."

The chief of the Plant Industry Division was well known for his refusal to recognize the dangers of spray. Aerial use of poisons over thousands of acres seemed as easy for him to recommend as a flyswatter. "No," he said, "I can't think of any way you can get such information unless you do it through a private concern. We couldn't possible accept samples from the general public like this."

"I am not the general public. I am a state university professor who has spent his life trying to learn more about the environment in which we live. It seems strange to me that there is no place where I can take these fish and find out what killed them. It might be significant, it might even be critical. I feel it is high time we stop going our separate ways and start comparing notes."

"My feelings have run along these same lines for years," he said. "There is need for a united effort by wildlife people, organic gardeners, agriculturists, businesses, public health, everybody. I think if we got a first rate lab at the Unversity, we could stop a lot of these erroneous statements about things being killed and the environment poisoned. Now about these fish, we just can't test everything the general public wants tested, but you might ask the City Forester his pleasure concerning them."

When I phoned, the forester remembered my earlier call. "Why are you so interested in this?" he asked. "These fish are of no value to anyone, they come in with the spring floods and they are only carp. Nobody ever sees them."

"Yes, I realize this," I replied, "but these fish are like white mice. They are part of this vast chemical "experiment" we are carrying on. By dying they tell us something."

"Oh yes, I follow your thinking now," the forester replied. "I suppose it is a matter of balancing carp against elms, isn't it? Which do you want? We don't spray the zoo. We treasure the animals. In the picnic areas, we want the elms and we spray. It is not easy. Some people are concerned with only one side of the picture. We have to worry about both."

"No, I'm afraid you don't follow my thinking," I said. "I am concerned about the third side," the natural population of animals and plants, and maybe a fourth, the human population as well."

"Well, years ago when we were spraying with airplane we tried to keep a close check to see if there were any damage to animals, but we didn't see much. There was some evidence that we once killed a pond of goldfish, but that was with the old hydraulic type sprayer. With these new mist blowers not much spray settles to the ground."

I was tired of hearing about the new mist blowers. Studies have shown that up to 70 percent of the spray may fall within

100 feet of the tree. Probably half of the remaining 30 percent drifts away to contaminate the atmosphere. I changed the subject for a moment. "I see by the papers that you have hopes that the battle against the elm disease in the city is leveling off, thanks to DDT spraying. I thought this was a peak year for dead elms?"

"Well, yes, it was a peak year, but I think we are making progress."

"How do you measure your 'progress"?"

"Well, the problem isthat we really don't have anything for a base. We don't have any counts on trees dying outside the city proper. We do have counts of public and privately owned trees in the city, but we aren't just sure what some of these figures mean."

"Isn't one of the problems that these beetles, or at least the disease spores, just seem to get around in spite of everything you do?"

"Unfortunately yes, it seems that way. Still, we're not as bad off here as Kansas City. I have read that they lost 100,000 trees this year.

"Don't they spray?"

"Yes, they spray, but they got started late."

"How late is late?"

"Well, we don't have many data on that."

I returned to the object of my call. "I have to get these fish and this water analyzed. Do you have any suggestions?"

"Years ago we got some samples of spray analyzed at the Ag Lab as a sort of check of our operators."

"I have talked to them. It seems to be a matter of getting someone to take the samples in for me."

"Well, I'm afraid that I couldn't help you on that."

I guess there was no one further down the echelon to whom he could refer me. Without much optimism, I began calling people at the University. The Director of the Experiment Station said to try the State Ag Lab. I explained they felt this was research and should be done at the University. "Then try Biochemistry," the Director said. "They have done a little of this. The fact is that there just isn't any place to analyze everything that comes in."

I phoned Biochemistry. "I would assume," a biochemist said, "that we might contact the Ag Lab, though I am not sure what their reaction would be." I told him what it has been. "You are up against a tough problem. I have had the same troubles for years. Nobody means to use pressure tactics, I'm sure. It's just that it is so complicated and time consuming to make these tests. In 1945 when DDT was first used, there was such

enthusiasm over its effectiveness that not much concern was shown for after-effects. About the time we began to make a little progress in analytical methods, the insects started to become immune and the chemical companies began turning out all kinds of new substances which compounded the problem. Our governmental control agencies were like a hunter without a gun. They had no methods for studying these materials. Finally the Food and Drug Administration said that they wouldn't issue permits to manufacturers until the companies perfected satisfactory analytical procedures. All this has taken a lot of time and money.

"Now the manufacturers say that it has become so difficult and expensive that the cost of putting a new chemical on the market has become prohibitive. Many products may be six years old or more before they become available to users. Perhaps that is how it should be, however. Some of these delayed effects take a long time to appear andstudy. We can't possibly learn all there is to know about a material even in six years, especially materials that have never even existed on earth before.

"But do you know, just this past year I believe I have detected a note of optimism among agricultural chemists, thanks to some of the new equipment that is coming out. But this doesn't help you. It would seem that our hands are tied for the present."

I next contacted the new head of the Department of Entomology and explained that I wanted to get some analyses made to see if DDT had caused the fish to die.

"I'd surely be suspicious," he said. "As far as getting them analyzed, the Ag Lab is the only reliable place, but you wouldn't stand much chance there. It galls me that at a place of this kind where we are constantly under obligation to recommend various poisons for widespread use, we have no toxicology lab of any kind. There is a lot of fundamental work that isn't being done. Now don't get me wrong. I think plenty of sound work goes into the recommendations we make for the use of sprays on farm crops, and we will stand by them, but we don't really have much control over this elm disease thing, and some other widespread programs off the farm. Take our spray program on campus. I've tried and tried to get them to use methoxychlor, but they simply won't do it. (He later denied at a public seminar that he had ever said this.) Methoxychlor is much less toxic to warm-blooded animals. Maybe it costs twice as much as DDT, but that's peanuts compared to the total expense. In operations like these, we should take every possible precaution.

"What we need to get rolling are some studies on the ecology of these sprays andthe effect they may be having on populations of other than target species. Maybe there will be

some other agencies coming into the picture. We'll hope so. Wish I could help you more."

An ichthyologist had been studying the fish life of a nearby river. I asked him for suggestions.

"There just isn't any place to get such analyses made," he said. "We've got to get into this field ourselves if we are going to understand the results we're getting in the river. These contaminants that get carried or blown into the water are complicating life for a lot of researchers as well as fish. In the southeastern U.S. the Public Health Service has found out that agricultural pesticides which they used to think broke down into the soil are actually going into the streams and ponds, and they can go right through a municipal water treatment undiminished in quantity. Another thing they are finding is that it may take only a fourth as much DDT to kill trout in the field as in the lab. We used to think the common rates of spray application were safe, but that doesn't appear to be the case with fish. It's going to call for unending research. Our problem right now is to design a good project that National Science Foundation or National Institutes of Health will buy. I know this doesn't help you, but that's the situation."

The headquarters for nearly every state agency, several agricultural labs, and the state university were all close at hand, yet it appeared that I would have to call for outside help. I called the nearest laboratory of the Federal Food and Drug Administration long distance and spoke to the director.

"Why Doctor," he said, "you've got one of the best chemists in the country right there not a mile away at the Ag Lab!" I explained what my efforts had been to date. "All right," he replied, "if you can furnish us with some samples we'll analyze the things. Send us two gallons of water and ten pounds of fish, and mark them for my attention."

It had been a long search! My quest was ended - but my troubles were not over. I had only a pound and half of fish. When I returned to the pond for more, I was disappointed to find only one tiny carp. I phoned the park superintendent and asked for permission to seine the pond. "We took all those fish out of the pond and the soap works came and got them," he replied. I detected a certain ring of conquest in his voice.

Undiscouraged, I took what fish I had, collected water samples, and drove to the FDA laboratory. I was given an opportunity to see their new laboratories and equipment. There did indeed seem to be a look of hope and confidence in their attitude. On their new chromatography set-up they could run a DDT sample is less than an hour. They could identify DDT and at the same time detect related pesticides, and quantify them besides. The equipment cost big money, but it would permit them to run many more samples, and record concentrations much lower than they could before. That was important. I was very

glad to learn that the two pounds of fish I had would be enough.

In only a few days I had the results. The water had .077 parts per million of DDT, enough to kill fish under natural conditions. The bodies of the fish contained not one, but four toxic compounds: DDT, DDE, DDO, and Lindane. In all, there were 28 parts per million of these poisons in the tissues of carp. DDT was used in the mist blowers when they sprayed the trees. DDE is produced in the bodies of the fish as DDT is changed by the body processes. DDD, which is an insecticide in its own right, might have been sprayed as part of a control program, but there was no record of it. More probably, it too was produced in the bodies of the fish. Until very recently, chemists said that theoretically this was impossible, but apprently it has happened anyway, and it is found quite regularly in organisms exposed to DDT. Lindane had not been used in the park. Most likely it had been picked up by the fish from the water of the river and stored in their bodies since the last spring flood, at least four months before. What the original source of contamination was in that case, no one could guess.

Though we did not know where all the poisons came from, at least we knew where they went-to the soap works! But what happens at a soap works? I phoned the company, and learned that the carp, along with slaughter house waste and meat scraps had been processed into meat scrap meal and fats. The meal was used in livestock feeds. Some fat was used in soap, but most of it was shipped overseas, marked "Non-human Use", though the company representative said that this label was not taken very seriously in foreign countries. He said that the company did not pick up many dead animals, since that required special licensing and inspection, but that they did make a few "courtesy" calls, which I took to mean that if they could get a dead aardvaark or a malingering python cheap and gain the city's favor at the same time, they would toss them in as special flavoring.

The wastes were ground up, cooked for five hours at a temperature of 250° F., andthe fats were extracted with solvents. This would certainly cause the aardvaark, the python, and the fish to lose their identities, but I could not find anyone who could tell positively what it would do to the insecticides-cause them to break down, leave them unaffected, or turn them into more toxic compounds. The chlorinated hydrocarbons in general are very heat resistant, and if a roast containing DDT is cooked several hours at 350 degrees or so, there is almost no breakdown. There seemed to be general agreement that most of the toxicity, if not destroyed, would end up largely in the fats. The final products from the mill were apparently never analyzed for

residues, either by the company or by the State Department of Agriculture.

It was apparent, in any case, that after the carp had gone through the "Soap Works", their molecules, and probably those of the insecticides they had picked up in the city park or the river, would be headed in every direction. They would not be immediately incorporated into raccoons, eagles and snails, as I had earlier theorized, but into the bodies of domestic animals and human beings both here and abroad.

* * * * * * * * * * * *

Half a billion dollars worth of chemical poisons are annually spread over the earth. We are essentially ignorant of what they do and of what happens to them. Even though DDT is nearly twenty years old, we know almost nothing of its ecology. In these same twenty years, our lethal vocabulary has increased many times, and our ignorance has increased proportionately. If we are to continue to use chemicals, we will have to recognice this extension of our ignorance. We will also have to examine carefully some of the obstacles which interfere with the sensible use, study, and discussion of these poisons. Merely from an examination of the conversations and experiences recorded here, which could happen almost anywhere, one can see why nothing gets done about pesticides.

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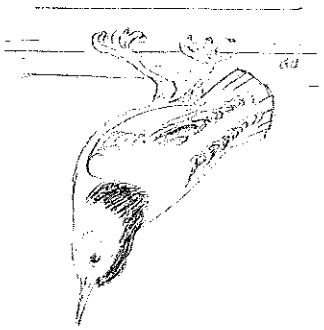
Guy Greenwell writes fromJoplin "..... Having read of the roadrunner summary in the BLUEBIRD I am reminded that Hank Hathaway, who lives at the south edge of old Fort Crowder, Newton County, told me of seeing two of them several times on the fort property. I had one report of a bird running through a yard just south of Joplin last spring. Then Bob Bright, operator of the Baxter Boat Dock at Lampe, on Table Rock Lake mentioned seeing an unusual group, six birds together if I remember correctly. He has seen roadrunners several times in the past few years, but this is the first I've had either here or from the west, of a group. Four years ago last fall, I hhad repeated reports of the presence of a roadrunner near Carl Junction, Jasper County, but did not see it myself"

MEET MR. NUTSY



This is the little white-breasted nuthatch who comes to my door for a handout of nut meats. I first met him five years ago when I put up a feeder board, which I keep full of sunflower seeds and cracked corn for the cardinals, woodpeckers, etc. Nuthatches also like the sunflower seeds but this one has become so tame that he will leave the feeder full of seeds to come for nut meats. All I have to do is hold my hand out the door and he will fly to me. Sometimes he hangs head downward from the eave trough and drops into my hand.

He comes to the porch swing while we are sitting there and walks head first down the chain to our hand.

Often he comes to meet me far from the house; comes flying at times and other times he alights on the ground some distance away and hops to me. He comes to the garden and welcomes the worms I find when hoeing.

He follows me to and from the wood pile when I carry wood in winter. Once he met me as I was passing by our big gas tank. He lit on the slick curved top of it and a surprised bird came sliding down 'kerplunk' into my hand.

His home is about 30 feet up in a big elm by the creek below the barn. He did not mind my sitting below watching as he came and went about his daily tasks of caring for his family. He took nut meats from me in to his mate inside the tree. Then when his young were large enough, in his judgement, he carried a few nut meats in to them.

He brings his youngster up to our house when they leave the nest and then he has to do lots of extra begging for them. He hulls the sunflower seeds and picks out the nut meats for them.

My pockets are always full of nut meats as I would not wish to disappoint him.

Mrs. Willard Campbell

Moving?
Please send change
of address to secretary

SENATE EMPHASIZES ACCELERATED PESTICIDES RESEARCH

The Senate 8/8/64 passed and cleared for a conference committee H.R.112-2 (Report No. 18, page 113), making appropriations for the Department of Agriculture for fiscal 1965 and granting funds for an accelerated research program on chemical pesticides. In taking this action, the Senate adoped recommendations of its Appropriations Committee as expressed in Senate Report 1331.

The Appropriations Committee stressed the importance of pesticides to American agriculture, saying: "The level of living of consumers would be drastically reduced if pesticides were not used today."

"Despite the great benefits derived from their use, pesticides have created problems of persistence and environmental contamination that have been re-emphasized by claims that the recent occurrences such as the Mississippi River fish kill and contamination of milk from cattle fed forage containing residues may result after pesticides treatments," the Report pointed out. "The Department of Agriculture has sought new ways of fighting pests without the attendant pesticide residue hazards, and within available resources, much has been accomplished. New, less persistent pesticides have been developed; new methods of application have been developed to lessen the amounts used and to direct pesticides to target organism; highly effective chemical attractants have been developed to use in conjunction with pesticides thus reducing the amounts needed; crops resistant to insects, diseases, and nematodes have been developed; and new non-chemical or biological methods and controls have been achieved. The uppermost consideration in these new developments and their use in cooperative programs to control pests has been safety for man, animals, fish, and wildlife. These hazards have been kept to a minimum, and research results to date have shown some progress in connection with these residue problems."

The Committee then made a significant statment: "An intensified program of research, education, and regulation is needed to reduce further and to eventually eliminate the need for using hazardous chemicals in agricultural production and processing and in control of forest pests."

In substance, the Committee recommended an additional $29 Million be appropriated to the Department of Agriculture as requested in Senate Document 85 (Report No. 29, pages 162-3). In all, this would allow a grand total of $69,079,000 for the USDA pesticides program. For research and education, the following amounts are provided: Agricultural Research

Service, $37,952,000; Forest Service, $6,936,000; Economic Research Service, $500,000; Cooperative State Research Service, $16,053,000; Extension Service, $4,3000,000; the National Agricultural Library, $200,000. In order to provide adequate facilities for the accelerated research program additional funds have been made available for the construction of three new Federal facilities and the planning of three others. In addition, ARS gets $3,138,000 for disease and pest control.

The Senate also continued the House-approved wetlands drainage prohibition as related to the Agricultural Conservation Program (ACP). It provides that no funds will be used to provide financial or technical assistance for drainage of wetlands designated by the Fish and Wildlife Service as being essential for waterfowl.

The Senate granted the full budget request of $20 million for two years for the cropland conversion program, or $12.8 million more than the House. This is the pilot land-use adjustment program to determine how land not needed for crop production can best be used for conserving and developing soil, water, forest and wildlife for recreational purposes. The House had been most critical of this program.

Over all, the Senate version of H.R.11202 allowed $5,338,672,525, or $56,176,525 more than the House allowed.

National Wildlife Federation

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Programs from both the Audubon Society of St. Louis and from the Burroughs Club for the 1964-65 Screen Tours have been received and both have scheduled a very fine series. The St. Louis club started off with Allen Cruickshank on September 25. One of the attractions will be Roy Coy from the St. Joseph Museum on February 12. Cruickshank also was the first speaker at the Burroughs Club on October 1. One of their more attractive future programs will feature Walter Berlet in "Northwest to Alaska" on January 7, 1965.

The BLUEBIRD is the official publication of the Audubon Society of Missouri. It is published quarterly at St. Louis, Missouri. Articles, essays, stories on all phases of natural history and conservation are welcome and will be printed within limits of space available. Manuscripts should be double-spaced on one side of legal paper. Illustrations should be on single weight glossy paper or original drawings. Reprints will be furnished at cost.

Send all articles to the Editor:

James F. Comfort
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CRESTED FLYCATCHER

Why do crested flycatchers have such an odd flight when they leave their nesting box in search of food for their young? This year, instead of nesting in their regular box, the crested flycatchers took over one of a four-compartment martin box, not used this year by the martins.

On June 7 nest making was at its height. Since we have always found snake skins in the crested flycatchers boxes, when cleaning them out, we thought it would be interesting to see if they would accept plastic strips as a substitute. We put these strips in the driveway where the birds had been gathering material for the nest. In just a short time they found the strips and began to collect as many as they could crowd in their bills. As they flew to the box the strips fluttered out behind them, some coming loose and floating back to the drive. They soon succeeded, however, in gathering all the stray strips and getting them to the house.

On June 16 we took the removable roof off the martin house and took a couple of pictures of the pretty set of five eggs. After the eggs hatched the old birds were busy catching insects for their brood. This is the time when we have always noticed the peculiar flight of the old birds. They did this only as they left the box. On returning to the box with an insect they would come in high but when they left they would fly down close to the ground with a slow, undulating, tired-out wing beat that resembled a great blue heron lazily flapping across a lake. This odd flight pattern has not changed during the eight years the flycatchers have nested in our boxes.

F. H. MacElree

HEARINGS ON GOLDEN EAGLES

The Subcommittee on Livestock and Feed Grains House Committee on Agriculture, held hearings March 2-3 on the implementation of Interior Department regulations to control depredations by golden eagles. Officials of the Interior Department and several public witnesses testified. The Interior Department officials have been told that some Subcommittee members believe that the present regulations do not adequately protect livestock interests in certain parts of the west. At issue is the practice of killing eagles from airplanes. The Subcommittee now is rushing a transcrip of the hearings into print, apparently in a move to force the Bureau of Sport Fisheries and Wildlife into considering more lenient regulations for the control of eagles.

National Wildlife Federation

Summer Survey

Compiled by
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June and the first half of July were cooler than normal. The last half of July and the first week of August were warmer than normal with most days in the 90's and a few 100° days. The heat wave was broken by record lows of high 40's and low 50's, as people switched off their air conditioners and switched on their furnaces. Rain was much above normal in orthwest Missouri. St. Joseph had six inches on June 21, which did affect some nesting birds. All ground nesters at Squaw Creek were affected by flooding. On the other hand St. Louis had only two inches of rain in June, about half normal. More than three inches in July brought St. Louis back to normal, but then a 30 day drought started, which affected all of the state. Southern Missouri had less rain all summer and by mid-August 56 counties were considered disaster areas because of the drought.

Except for the flash floods of northwest Missouri, it was a good breeding season for the state. Generally, it was a very normal season with a definite lack of rare sightings. The only rarity of particular interest was Lawhon's lark bunting.

We would like to thank Elizabeth Cole for reporting the Kansas City area while Dave Easterla summered at Bryce Canyon.

Grebes through Herons—Pied-billed grebes were common in June in the Illinois levee area and had completely deserted the area by July because of severe drying conditions. They were present at Stump Lake near Grafton, Ill. all summer with three juveniles seen August 15 (S.V.). Grebes numbered as high as 12 birds at Squaw Creek but their nests were the victims of flooding during June (F.L.,H.B.). A lone white pelican stayed at Moredock Lake until mid-June.

Herons were greatly reduced in the levee area due to little or no water. This may explain the increase up river at the Swan Lake, Illinois area. Here all herons

and especially yellow-crowned night herons and green herons were more numerous than usual (S.V.). Snowy and cattle egrets again bred in the heronry near Bertrand, Missouri (J.H.) As usual the little blue heron was the predominant species here. Herons were generally down at Squaw Creek (F.L.,H.B.). Great blues built up to only 74 by August 9 and there were only 8 common egrets for a high on August 2. Four snowy egrets seen on July 26 at Browning Lake by John Hamilton was unusual for the St. Joseph area. 78 little blue herons were counted at Squaw Creek and Browning Lake on August 9. Five yellow-crowned night herons were present at Squaw Creek from mid-July on. Bitterns were scarce and at least three least bittern nests were flooded out at Squaw Creek.

Ducks--The refuge manager at Squaw Creek estimated 25 pair of mallards attempted nesting at Squaw Creek but only two nests were successful (H.B.). A total of 13 flightless young mallards were banded at Swam Lake, Illinois (S.V.). This is the first proof of wild mallards nesting in the St. Louis area for many years. A pintail with five young was noted at Squaw Creek, (F.L.). An early buildup of pintails numbered 45 by mid-August. Three pair of blue-wing teal attempted nesting but only one was known to be successful. Four downy young were observed August 16-17 (.H.B.). Blue-wing teals were present at Swan Lake, Illinois all summer, but there was no evidence of nesting (S.V.). Wood ducks were reported down both at Squaw Creek (H.B.) and at Swan Lake, Ill. (S.V.).

A belated report from Mrs. Florence Frame indicates two white-wing scoters were found on a pond near Rolla, Mo. on March 28. They were later seen by Mr. & Mrs. Albert Ollar. A female hooded merganser with brood was seen on the St. Francis River in southern Missouri on June 5 (D.E.).

Hawks through Rails--Turkey vultures were less common this summer, especially in the levee area (E.C.). Two Mississippi kites were seen at Big Oak State Park on June 4 (D.E.) and and three the next day-June 5 (J.H.). Kites did not nest at their area on the levees and were not seen most of the summer. One kite was seen at Hardin, Illinois in June by Mildred Schaefer. A Mississippi kite was also reported by John Hamilton on June 3 near his home at St. Joseph. A pair of broadwinged hawks successfully raised two young near Pere Marquette Park (S.V.). Red-tailed hawks were up slightly at St. Joseph. A very large flock of 24 Swainson's hawks was found circling the Missouri River bluffs on June 12 (F.L.) Seven were observed there June 21 by John Hamilton.

Bobwhites again increased at the Swan Lake, Illinois Refuge, undoubtedly due to lack of flooding for the last two years. King rails successfully nested at East St. Louis, Illinois (E.C.). The first rail seen at Squaw Creek were

two Soras on August 9. Common gallinules at Moredock Lake were reduced to a single pair in June by low water.
Shorebirds--Jim Haw thought shorebirds to be early in southeast Missouri with most common species recorded by August 12. Shorebirding in St. Louis was uneventful mainly due to very limited mud flats. All common species were noted in normal numbers, but no rare species were reported as of August 15. A downy young spotted sandpiper only a day or two old was found on a sandbar in the Missouri River at St. Charles on the late date of August 10 (R.A.). As usual our best shorebird report came from Squaw Creek by way of Floyd Lawhon and Harold Burgess. Here, the first piping plover appeared on August 2 and a pair of turnstones were in by August 9. Unusual to the St. Joseph area was a flock of 35 upland plovers feeding in a burned over field in the Missouri River bottoms on July 19. One lone willet was seen at Squaw Creek on August 2. Late spring migrants included white-rumped sandpipers at Squaw Creek and three dunlins at Mud Lake both on June 6. Pectorals returned to Squaw Creek on July 25, but have not been seen in large numbers. The only least sandpiper was one on August 9. These figures seem awfully low for Squaw Creek. Most unusual was three Hudsonian godwits at Squaw Creek on July 7 (.H.B.). The only buff-breasted sandpiper for the state was two at Squaw Creek on July 26 by John Hamilton.
Cuckoos through Woodpeckers--Yellow-billed cuckoos were reported up at St. Joseph and black-billed down(F.L.). Resident owls at Squaw Creek this summer included at least five pair of horned owls, two pair of barred and one pair of screech owls (H.B.). Both chuck-will-widows and whip-poor-wills were unusually common along the river bluffs northwest of St. Joseph (F.L.). All six nesting woodpeckers were very successful in Gasconade County (R.A.).
Perching Birds--Two species of flycatchers continue to expand in western Missouri. Floyd Lawhon reminds us that western kingbirds were seldon seen near St. Joseph a few years ago. Now it is possible to see at least a dozen within a few hours. Elizabeth Cole gives us a brief history of the scissor-tailed flycatcher in the Kansas City area. This species was first recorded there in 1944, but did not nest until 1954. Now in 1964 at least 12 pair are nesting just south and east of the city. Scissor-tailed flycatchers again nested in the Springfield area and young birds were observed (I.Fay).
Floyd Lawhon tells us of a new State Conservation hunting and fishing area. This 1400 acre tract is known as the Honey Creek Wildlife Area and is 20 miles northwest of St. Joseph. Breeding flycatchers here include great-crested, phoebe, Acadian, Traills and pewee.

Interest in a purple martin study by Dick Anderson led to the discovery of a martin roost on the Missouri River in St. Charles County. This was not a gathering place, but a willow roose on a sand bar where the birds actually spend the night. Birds using the roose on August 8 and 10 were estimated at 90,000 to 100,000. Birds counted as they arrived per minute and this is the basis of the estimate. Mid-August being the time of departure for most martins and with strong cool northwestern winds, the roost was down to only 10,000 birds by August 13. A small crow seen with two much larger crows on the levee June 7 was probably a fish crow (R.A.). However, sight records of this species probably will not be nationally recognized until specimens are taken.

Carolina wrens have been scarce since the severe winter of 1960. Spotted reports from St. Louis, Gasconade County and the Kansas City area indicate hopes this year of some sort of a recovery. Lawhon reports them still very scarce at St. Joseph. Dave Easterla's study at Tucker Prairie showed that short-billed marsh wrens did not arrive until July. A study at Tucker this summer by Joe Roller has substantiated his observation. A report from David Plank shows this to be true for the Salem area too.

All reporters tell of a very successful season for robins. Large numbers of young were seen throughout the state. Our only encouraging note on bluebirds came from David Plank, who advises they are quite numberous in the Salem area. Elizabeth Cole tells of many cedar waxwings staying into June, but knows of no actual nesting. On the other land Floyd Lawhon was fortunate to have a pair nest and raise three young in the back yard.

Warblers are generally regarded as migrants, but we must not forget that 18 species are breeding birds in our state. Jim Haw and Dave Easterla have found 13 species of warblers breeding in Big Oak State Park alone. The best three are yellow-throat, hooded and Swainson's. Ovenbirds were especially common at Round Springs. The river bottoms throughout most of southern Missouri found Parula, Cerulean, yellow-throat, prothonotary, redstarts, waterthrushes common with a scattering of hooded. Wooded areas also produced Kentucky, wormeating and black and white. More open areas produced chat, blue-wing and yellow. Lawhon reports eight species from the Honey Creek area. Jim Rising found a prairie warbler nest in southeast Kansas, which is a new record for that state.

Migrating warblers were heard at night at Salem (D.Plank) and at St. Louis (R.A.) as early as August 8. Elizabeth Cole reports myrtles on August 15 and chestnut-sided on August 16.

Joe Roller reported 200 eastern meadowlarks roosting at Tucker Prairie. Yellow-headed blackbirds again nested at Lake Contrary (F.L.). Our only rare bird report for this season was a lark bunting found eight miles northwest of St. Joseph on June 14. The bird, a female, was studied at close range, sitting and flying, by Simon Rositzky, Roy Coy, Robert Brown and Floyd Lawhon.

Two sightings were made of the painted bunting at Table Rock Lake. One was at Indian Point and the other at the Monett Boat Dock (I.Fay).

Anyone desiring the Bachman's sparrow is advised to look up David Plank in Salem, Missouri. David has located nine singing males in his area, some of which were still singing on August 15.

R.A. - Richard Anderson
H.B. - Harold Burgess
E.C. - Earl Comfort
D.E. - David Easterla
J.H. - Jim Haw
F.L. - Floyd Lawhon
S.V. - Sally Vasse

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A notice from the Karkhange Club of Salem lists the 1964 program. Climaxing a fine year will be a talk on "The Court's Attitude on Open Range" by Spencer Jones on February 19, 1965. Spence has advocated that the problem of "open Range" is a legal one and that it can be solved in the courts.

TO THE EDITOR:

I read with interest the report by Larry Brown on the status of the roadrunner in Missouri, which appeared in the Winter 1963-1964 issue of "The Bluebird." Your readers may be interested in an additional record of the roadrunner which extends its range a good deal further north than was reported by Mr. Brown.

On April 20, 1963, a Mr. Lewis Davis of Warsaw, killed a roadrunner with his automobile about 1½ miles north of the little town of Polk in northeastern Polk County. The precise location is Township 35 North, Range 22 West, Section 36. Mr. Davis reported that the bird was crossing Highway D "at a high rate of speed", but unfortunately not even a roadrunner can outrun a modern automobile.

This bird was identified by our Predator Control Agent, Mr. Robert H. Smith of Bolivar, and was then sent to the Wildlife Research Unit of the University of Missouri, where it was made into a study skin which is now in the Research Unit collection.

Sincerely,
Allen Brohn, Supervisor
Programming Branch
Game Section
Missouri Conservation Commission