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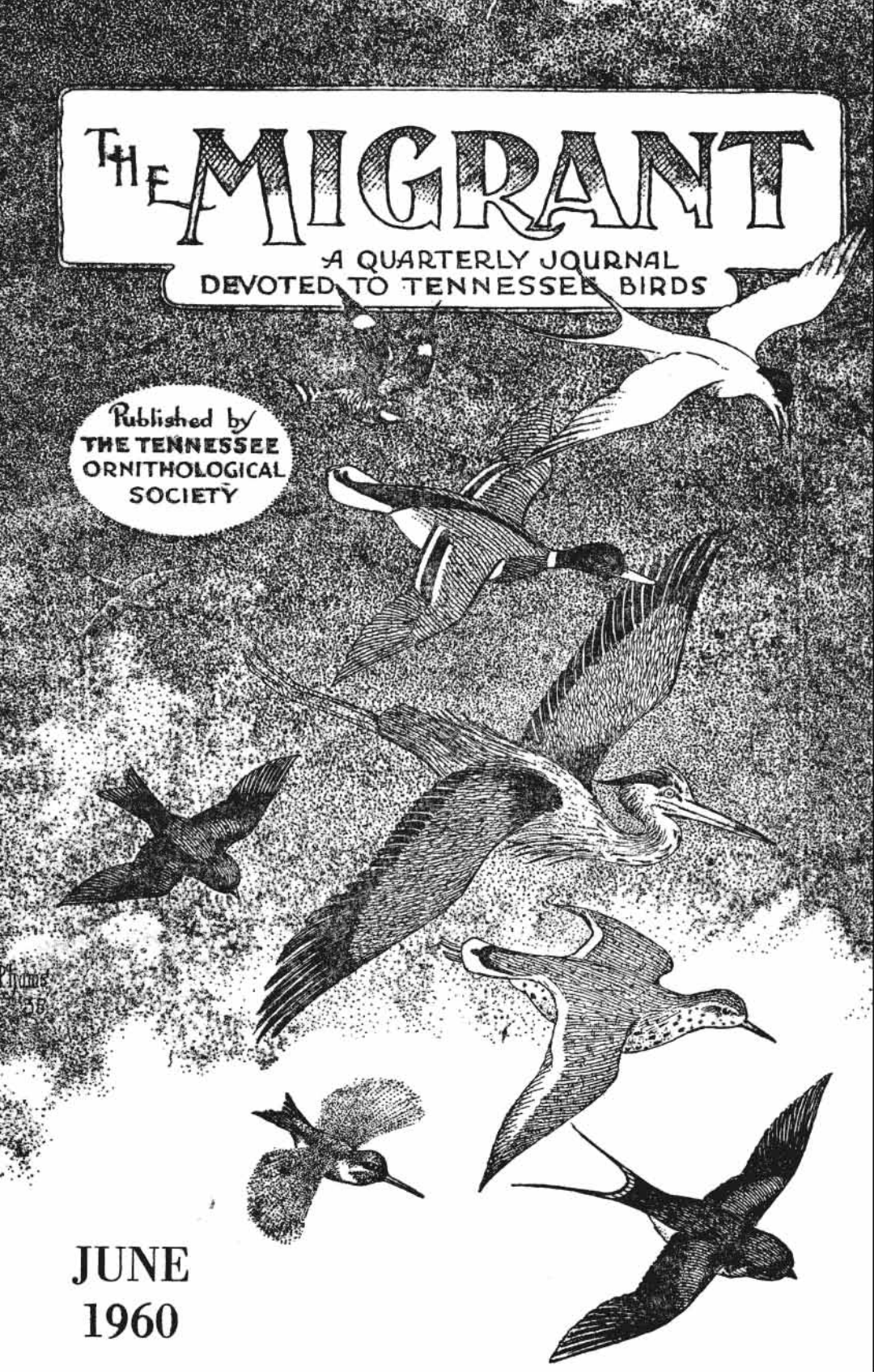

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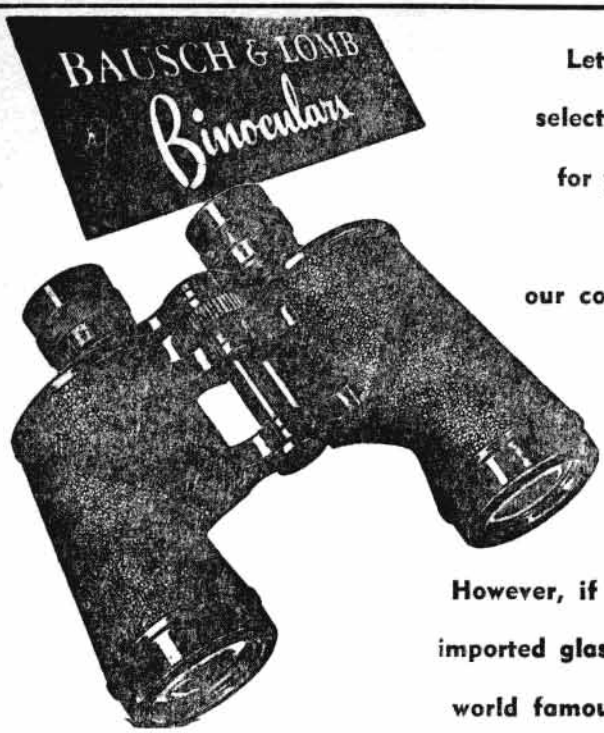

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PESTICIDES AND WILDLIFE IN TENNESSEE

By SUMNER A. DOW

INTRODUCTION

For the past two years much interest has been voiced regarding chemical pesticide programs and the effects of dissemination on native wild plants and animals. Much of the published information concerning Tennessee pest control projects and the hazards of that work has been reported by laymen. The following discussion is an attempt to shed some light on the problem and offer some possible approaches to handling future wildlife-pesticide cases in Tennessee.

Since the Second World War, many new chemicals have been developed and found useful in the control of certain animal and plant species. For the protection of our public health, preservation of forest and agricultural economies or simply to gain relief from noxous insects, the control of certain species will probably always be necessary. In 1958 the chemical industry produced approximately one billion pounds of compounds used in the broad field of plant and animal control. It seems reasonable to expect a manifold expansion both in the production and the use of pesticides in the next decade. Along with this expected growth, we may expect to see more efficient chemicals developed. Some companies already have made impressive claims concerning the potent efficiency of their pesticide products. Recent studies have shown that some of these chemicals are even more potent than the companies claimed. At least one synthetic compound, Heptochlor, has been known to undergo a chemical change after application and in its new form (an epoxide) become 2 to 4 times as toxic as when first applied.

The recent publicity concerning contaminated cranberries is an example of the enforcement of the regulations provided for by the Food, Drug, and Cosmetic Act. If a trace of certain economic poisons can be considered dangerous and unfit for human consumption then it is easy to understand why conservationists have become alarmed at the possible effects on wildlife of applications of synthetic toxicants each year exceeding five hundred million pounds. It is an established fact that applications of pesticides sometimes have adverse effects on wildlife. On study areas within the five hundred thousand acres treated for the control of fire ants in the South, heavy losses of birds were noted and on one area, aquatic life, mammals and birds were found dead or dying. Subsequent analysis of tissues and stomach contents showed the presence of sufficient toxic material to have caused death.

Even though insecticides and rodenticides have been in common use for more than sixty years, public concern over the use of these pesticides was not widespread until after World War II. Most State Game and Fish laws indicate that law makers recognized the hazards accompanying animal con-

trol methods by the use of poisons. Strychnine, arsenic, and other poisons are specifically prohibited as means of controlling, undesirable species. The reasons for such legislation are many and varied. In some instances unwarranted public fear of killing galliform birds such as pheasants and quail with pest bait containing strychnine was one of the reasons for early prohibitive regulations. Recent research shows that gallinaceous birds are practically immune to this alkaloid. Pigeons and doves on the other hand are quite sensitive to strychnine. In view of this, it seems that some of our laws were prompted more by opinions than factual information. However, the effect has been beneficial in that the methods and chemicals in use today have resulted from a mass of research data promoted by public opinion.

DDT was one of the first compounds to be used widely. Under certain conditions it is extremely toxic to fish and aquatic invertebrates. This fact was quickly recognized and extensive research was carried out by the U. S. Fish and Wildlife Service, Public Health Service and the Department of Agriculture. Tests have shown that, although it is unlikely that most wild birds are acutely affected by direct contact with DDT, they are at times drastically affected by having their food supply reduced, contaminated, or eliminated locally. The ecological impact of a contaminated or broken food chain sometimes has far reaching effects.

Hunt and Bischoff obtained the following conclusive results in a study of a lake in California which was treated for the control of gnats. The chemical used was TDE or DDD a compound closely related to DDT but considerably less toxic to fish.

(a) All fish, bird, and frog samples analyzed contained DDD.

(b) The amount of DDD found in all flesh samples exceeded the specific rate of dilution of active insecticide in the lake water on a p.p.m. basis. (one part per fifty million was the treatment rate).

(c) Flesh samples of Largemouth bass, *(Micropterus salmoides)* and Sacramento blackfish, *(Orthodon microlepidotus)* hatched between seven and nine months after the last DDD application contained 22 to 25 p.p.m. and 7 to 9 p p.m. of DDD respectively.

(d) All areas of the lake contained DDD contaminated fish. It is of interest to note that all fish appeared to be healthy.

The same workers also had circumstantial evidence that all Grebe, *(Aechmophorus occidentalis)* losses occuring after the DDD applications were caused by chronic DDD poisoning. One hundred grebes were found dead in 1954 and another 75 were picked up in 1957.

As early as 1947 some insects appeared to have become immune to DDT. Pest resistance to control measures has stimulated research for new compounds. This progressive immunity has also encouraged proper use of materials and methods because of the cost and inefficiency of subsequent treatments.

Today the general public accepts the use of synthetic chemicals as one of the most economical methods for pest control. This is evidenced by the large volume of such materials currently being sold. It is believed, however, that the public has become complacent in its regard for economic poisons. This is evidenced by a recent report from the Wildlife Management Institute.

> "Pilots and crews working for the agricultural aircraft industry in California have more disabling injuries from pesticides than any other single cause. Economic poisons account for almost one-half of the reported injuries."

USE OF AGRICULTURAL CHEMICALS IN TENNESSEE

Most of the people in Tennessee who use pesticides do not have the training or facilities for testing the chemicals for efficiency or toxicity. In 1910 the federal pesticide act was passed and in 1951 Tennessee adopted the Uniform State Pesticide Act. Although most users are not aware of the specific act they do realize that they receive protection from its provisions. Essentially the laws regulate the marketing of economic poisons. Most important of the provisions are those specifying registration, standardizing, labeling, directions for use and the regulation of the sale and possession of specific toxic materials.

Realizing that reliance can be placed on the information printed on the container, few people today deem it necessary to employ professional exterminators for the control of farm and home pests. This situation makes difficult an accurate accounting of the total amount of pesticides used in Tennessee. An indication, however, is available when it is known that in the United States approximately one billion pounds of commercial pesticides are being produced annually, and there are more than four hundred and fifty companies registered with the Tennessee Division of Foods, Drugs, and Dairies that manufacture, pack, sell, distribute or ship economic poisons in Tennessee.

In Tennessee during the past ten years a total of approximately 15,000 acres has been treated for the control of the White fringed beetle and the Japanese beetle. This work has been supervised by the Tennessee Division of Plant Industry. Only 2 aerial applications have been made, and in rural areas where wildlife populations might be affected, the areas have been relatively small, usually including less than five hundred acres. The following list shows the location and year or years during which the applications were made:

County — Location	No. Acres Treated	Inclusive Dates
Cocke — Newport	50	1956-58
Gibson — Milan	155	1959-
Hamilton — East of Chattanooga	165	1949-51
Hardeman — Bolivar	441	1955-59
Haywood — Brownsville	138	1956-
Henderson — Lexington	160	1958-
Henry — Paris	308	1957-
Jefferson — Chestnut Hill	300	1955-56
Johnson — Mountain City	1,000	1955-57
Butler	1,000	1958-
Knox — Knoxville	1,100	1958-
Madison — Jackson	170	1956-58
McNairy — Milledgeville	4	1958-
Monroe — Tellico Plains	60	1958-
Sevier — Sevierville	25	1957-58
Shelby — Cordova	620	1950-51
Memphis	5,538	1950-59
Millington	3,222	1956-57
Sullivan — Bristol	500	1958-
Tipton — Mason	29	1952-55
Ried Farm	40	1957-
TOTAL TREATED ACRES	14,935	

At the Knoxville, Butler and Mountain City locations in 1958, Game and Fish Biologists made field checks in an attempt to evaluate the effects of granular dieldrin on wildlife. Bird and small mammal censuses were taken prior to the first application and each area was carefully checked for dead or dying animals during and immediately after the insecticide was applied. A later census was taken on each area and a sample of the small mammals living in each area was taken by trapping. The primary purpose of this work was to acquaint personnel of both State agencies with the pesticide-wildlife problem in order that future efforts of both agencies might be handled cooperatively. Field examinations would also enable the Game and Fish Commission to record first hand any wildlife losses that might occur. No wildlife losses have been found on the three study areas; however, this work is being continued and periodic samples of small mammals from the areas have been trapped by Commission biologists and are being analyzed for accumulations of Dieldrin by the Patuxent Wildlife Laboratory.

Since the first meeting, the Division of Plant Industry has provided the Commission with a complete ten year record of all control work accomplished under its direction. This record includes maps of areas treated complete with dates, materials used, and methods of application. Currently the Division provides similar information to the Commission before each control project is begun. Preliminary field work on the three East Tennessee areas indicates that the two agencies can easily work together to insure that if wildlife losses occur as a result of the insect control program handled by the Division of Plant Industry, the Game and Fish Commission will be on hand to properly record and report the results and to take whatever steps possible in the future to eliminate the conditions causing mortality.

WILDLIFE LOSSES IN TENNESSEE

Wildlife technicians have made cursory inspections of several insecticidal treatment sites in Tennessee during the past decade. An accurate measurement of losses of beneficial species and the conditions under which losses occured has not been determined. First hand reports are seldom received in time for technicians to collect useable specimens in numbers sufficient for providing data for population analysis. Typical cases supply just enough data to illustrate what, where and probably how the loss occured.

One handicap facing the biologist is the rapid disappearance of small birds and mammals after death. Healthy animals killed accidently are commonly seen along highways and around human habitation, but those dying less suddenly such as from old age or poisoning are seldom seen. Carnivores, scavengers and lower forms of life are quick to destroy the identity of a dead or dying individual. For this reason many pesticide victims are never recorded or cannot be recovered.

The Bureau of Plant Industry has cooperated in full measure by supplying the Game and Fish Commission with all facts concerning control projects under their jurisdiction. Wildlife losses to date on these areas have not occured or have been so slight as to escape detection. Of course, these projects are well organized and methods and materials are applied by professionals who are aware of the importance of proper handling and applications of potentially hazardous chemicals.

Critical ecological studies of areas to be treated and those undergoing treatment would provide much needed data but research of this type usually lacks public support until after a biological catastrophe occurs and is dramatically brought to public attention.

The significance of wildlife mortality caused by economic poisons takes on many different meanings. To those conservationists who love all wild things and evaluate species aesthetically, all types of mortality are significant. Emotionally the hunting and fishing public view the loss of any game species with alarm. On the other hand and entirely within reason, the agriculture and forest industries tend to consider the loss of non-commercial species in about the same light as a gardener considers weeds — Everyone shares that feeling in some way by recognizing that wild plants and animals take on different values depending on where they are. To the rice and lettuce farmers of California certain species of ducks are pests and in some cases become a serious economic hazard to their livelihood. Almost any plant or animal may become involved in man's activities at certain times and places and create problems necessitating some type of control. Few people question the economic importance of damage done by pests or the need for some control measures. Any evaluation of the accidental losses to wildlife incurred during pest control operations must be made realistically. The loss of a few individuals from a population probably is not significant in an abundant species that has a high population turnover. Similarly there is good evidence that losses to certain game populations from hunting are not significant to the welfare of that population. In fact, it can be demonstrated that in many cases hunting actually benefits a species. Conversely, each loss from poison, or any other cause, of an individual of a rare species such as beaver or otter, becomes highly significant to that population in Tennessee.

SOME ORGANIZATIONS CONCERNED WITH PESTICIDE APPLICATIONS IN TENNESSEE

The interest of the agencies and organizations concerned with economic poisons are by no means the same. Each group provides authoritative information on the subject and the policies and attitudes of each organization has a direct bearing on pesticide problems in that the use and regulation of economic poisons is in their hands.

FEDERAL

Tennessee Valley Authority
U. S. Corps of Engineers
U. S. Department of Agriculture
Department of Interior
U. S. Fish and Wildlife Service
Dept. of Health, Education, and Welfare

STATE

Dept. of Agriculture—Division of
Foods, Drugs, & Dairies
Division of Plant Industry
State Game and Fish Commission
Department of Public Health
Stream Pollution Control Board
Department of Conservation
Division of Water Resources
Division of Forestry
University of Tennesse

PRIVATE

Tennessee Conservation League
Tennessee Ornithological Society
American Medical Association
National Audubon Society
Sport Fishing Institute
Fuel and utility industries
Wildlife Management Institute
Wildlife Society
National Wildlife Federation
The lumber industry
The agricultural industry

In most cases the particular interest of the organization is evident from the title. Some have multiple interests. The Game and Fish Commission, for example, uses many types of economic poisons in the normal course of fish

and game management, however, we would be particularly concerned if accidental wildlife losses resulting from pesticide application should become evident.

Listed below are some of the chemicals used in more than 6100 brands of commercial pesticides. The groups are arranged according to use or chemical characteristics.

Fumigants

Methyl bromide	Ethylene dibromide	DDD (1, 3-dichloropropene - 1 & 1, 2 dichloropropene)
Carbon disulfide	Ethylene dichloride	
Hydrocyanic acid	Carbon tetrachloride	

Rodenticides

Alpha naphthylthiourea	Castrix	Thallium (Thallous sulfate)
Barium carbonate	Phosphorus	Tomorin or Coumachlor
Pival (2 Pivalyl - 1, 3 indandione)	Red Squill	Warfarin (anticoagulant)
Sodium fluoroacetate (compound 1080)	Strychnine	Zink Phosphide

Herbicides

2, 4-D (2, 4-dichlorophenoxy acetic acid)
2, 4, 5-T (2, 4, 5-trichlorophenoxy acetic acid)
C. M. V. 3-(P-Chlorophenyl)-1, 1-Dimethylurea
Chloro IPC; Isopropyl N (3 Chlorophenyl) Carbamate
MCPA; 2 Methyl - 4-Chlorophenoxy acetic acid
IPC Isopropyl N-Phenylcarbamate

Ammonium Sulfamate (Ammate)	Pentachlorophenol
Dalapon	Sodium Chlorate
Maleic Hydrazide	TCA Trichloroacetic acid

Thiocyanates

Lethan 60 Lethane 384 Thanite Toxaphene (Chlorinated camphene)

Chloronated Acaricides

Aromite Dimite Niotran Ovatran Sulphenone

Organic Phosphates

Demeton (ingredient in Systox)	EPN	Potasan (E - 838)
Diethyl 2-chlorovinyl phosphate	Malathion	Parathion
TEPP-Tetraethyl Pyrophosphate	Chlorthion	Schradan (OMPA)
Dimethyl 1 carbonethoxy - 1-propen - 2YL	Diazinon	Dipterex

Guinones

Phygon Spergon

Dithiocarbamates

Ferbam	Naham	Ziram	Captan	Ortho Phenylphenol
Manzate	Zineb	Glyodin	Thiram	

Miscellaneous Fungacides

Bordeaux mixture—copper sulfate & calcium hydroxide	Sulfur
Copper 8—Hydroxyquinolinate	Lime and Sulfur
Copper oxychloride	Mercuric chloride
Copper 3—phenylsalicylate	Mercurous chloride
Copper zink chromate	

Inorganic			**Botanical**			
Arsenicals	Copper	Cryolite	Nicotine	Allethrin	Pyrethrum	Rotenone

Chlorinated Hychocarbons

Aldrin	Benzene Hexachloride (BHC, 666, HcH or Lindane)
Chlordane	DDT dichlorodiphenyltrichloroethane
DDD	Isodrin (Stereoisomer of aldrin)
Endrin	Methoxychlor
Heptochlor	

Dinitro Compounds

DNOC (Dinitro-ortho-cresol)	DNOSBP (Dinitro-o-secondary butyl phenol)
DNOCHP (Dinitro orthocyclohexyl phenol)	

Other

Solvents Additives Detergents Emulsifiers Dusts Synergists

CONCLUSION

Long term research projects cooperatively planned and carried out by all agencies concerned would be of mutual benefit. The ecological effects of chemical control on plant and animal reproduction, vigor and longevity are little known and must be understood before solutions to present day problems can be ascertained. Much of the research needed could be accomplished cooperatively by state and federal agricultural and wildlife agencies if technical and financial assistance were made available by the private industries that are most concerned with Pesticide - Wildlife problems.

Conservationists should insist that the agencies managing fish and wildlife resources be prepared to investigate fully all cases suspected of being hazardous to their interests.

The educational institutions of the state should make additional efforts to impress on pesticide users the importance of proper use of economic poisons. Agricultural scientists should be encouraged to continue to develop highly specific or selective pesticides and, in addition to carrying out standard toxicity tests with laboratory animals, they should be asked to include tests with wild and domestic animals under field conditions.

There have been no chemical control programs involving large areas or "blanket" methods of application in Tennessee. Before any pesticide programs are planned for this state by the Division of Plant Industry, the Game and Fish Commission and other agencies concerned will be informed of the plans and asked to participate actively in specific planning in order that public health and the welfare of livestock and wildlife will not be jeopardized.

Conservationists need to be cognizant of the fact that the economics of most industries based on our natural resources require that some wild species be controlled. Industry should also recognize the real and esthetic values that conservationists are trying to safeguard. Government agencies should continue to provide, through educational and informational channels, common denominators by which the various agencies concerned with Pesticide-Wildlife problems can measure values in common terms. When this is accomplished, Land, Water, and Industrial management practices can be employed or developed with the aim of preventing population increases of species that are at present or may become pests under certain conditions. Biological and cultural controls are usually less expensive and in many instances are more effective than other means.

The indirect effects of pesticides on the biotic community may be much more important than the outward more obvious changes. Soil sterilization

or contamination, systemic plant poisoning, or the accumulation of toxic compounds in the bodies of living animals are less easily recognized but probably much more significant than outright mortality.

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THE 1960 SPRING FIELD DAYS

By T. O. S. Members

Counts from the nine chapters account for a grand total of 195 species which exceeds all previous counts by four species. These counts do not include Reelfoot Lake area nor the count from the annual meeting which on some previous occasions has extended over a two day period. Four species occurred on the spring count for the first time. Three of these species lingering south longer than usual were, the Blue Goose, Redhead and Tree Sparrow. The very late cold weather and excessive amount of snow in late winter and early spring may have delayed their departure. The Blue Geese and Tree Sparrows were reported from at least two widely separated areas. The Redheads appeared to be the last of large flocks which were noted on our upper TVA Lakes during the winter and early spring.

(continued on page 34)

TABULAR RECORDS OF SPRING FIELD DAYS

SPECIES	Memphis 5-15	Nashville 4-23	Lebanon 5-1	Chattanooga 5-1	Knoxville 5-1	Greeneville 5-1	Kingsport 5-14	Bristol 5-1	Elizabethton 5-1
Common Loon	.....	.....	.....	.....	.....	.....	2	.....	4
Horned Grebe	.....	.....	2	.....	.....	.....	.....	.....	.....
Pied-billed Grebe	.....	1	.....	1	.....	.....	.....	.....	.....
Great Blue Heron	1	.....	.....	.....	.....	1	2	.....	.....
Green Heron	.....	11	1	6	19	4	6	.....	8
Bl.-cr. Night Heron	.....	6	.....	.....	1	.....	.....	.....	.....
Yel.-cr. Night Heron	.....	.....	.....	1	.....	.....	.....	.....	.....
Canada Goose	.....	.....	.....	7	.....	9	.....	.....	.....
Blue Goose	(1)	.....	6	.....	.....	.....	.....	.....	.....
Mallard	.....	.....	3	2	.....	.....	1	.....	.....
Black Duck	.....	3	.....	.....	.....	.....	.....	.....	.....
Gadwall	.....	.....	.....	.....	4	.....	.....	.....	.....
Blue-wng. Teal	.....	4	.....	7	3	2	1	.....	.....
Am. Widgeon	.....	.....	.....	.....	.....	.....	.....	.....	3
Wood Duck	.....	5	10	.....	3	.....	2	.....	22
Redhead	.....	.....	.....	.....	.....	.....	.....	.....	2
Ring-nk. Duck	.....	.....	.....	.....	.....	.....	.....	.....	1
Lesser Scaup	.....	9	.....	.....	.....	.....	.....	.....	2
Hooded Merganser	.....	.....	.....	.....	.....	.....	.....	.....	1
Red-br. Merganser	.....	.....	.....	.....	.....	.....	.....	.....	9
Turkey Vulture	1	27	5	1	36	8	13	.....	7
Black Vulture	1	12	.....	.....	7	8	2	.....	5
Miss. Kite	3	.....	.....	.....	.....	.....	.....	.....	.....
Sharp-sh. Hawk	.....	.....	.....	.....	1	.....	.....	.....	.....
Cooper's Hawk	.....	3	1	3	4	3	2	.....	1
Red-tld. Hawk	3	8	.....	3	2	.....	2	.....	.....
Red-sh. Hawk	.....	2	.....	.....	.....	.....	.....	.....	.....
Broad-winged Hawk	.....	1	.....	5	1	.....	1	.....	1
Marsh Hawk	.....	2	.....	1	1	.....	1	.....	.....
Osprey	.....	1	.....	.....	1	.....	1	.....	4
Sparrow Hawk	.....	10	3	5	4	1	5	.....	4
Ruffed Grouse	.....	.....	.....	.....	.....	.....	.....	.....	11
Bobwhite	7	49	25	55	47	13	6	.....	14
Ring-nk. Pheasant	.....	.....	30	.....	.....	.....	.....	.....	1
King Rail	.....	.....	.....	.....	1	.....	.....	.....	.....
Sora	.....	.....	.....	1	1	.....	1	.....	.....
Am. Coot	.....	7	.....	.....	.....	.....	.....	.....	.....
Semipal. Plover	.....	6	.....	2	.....	.....	.....	.....	.....
Killdeer	(1)	48	4	31	28	12	6	6	10
Am. Woodcock	.....	1	.....	.....	.....	.....	.....	.....	.....
Com. Snipe	.....	20	.....	14	16	2	.....	.....	4

Upland Plover	.....	1	.....	.....	.....	.....	.....	.....	.....
Sptd. Sandpiper	1	33	.....	10	15	.....	9	1	18
Sol. Sandpiper	(1)	25	1	24	24	7	7	.....	22
Gr. Yellowlegs	.....	5	.....	21	4	1	7	.....	8
Lsr. Yellowlegs	.....	17	.....	24	.....	.....	4	.....	10
Pect. Sandpiper	.....	12	.....	32	.....	.....	1	.....	.....
White-rmp. Sandpiper	.....	.....	.....	.....	.....	.....	1	.....	.....
Least Sandpiper	.....	13	.....	13	1	.....	12	.....	.....
Stilt Sandpiper	.....	.....	.....	.....	.....	.....	1	.....	.....
Semipal. Sandpiper	.....	.....	.....	1	.....	.....	.....	.....	.....
Herring Gull	.....	1	.....	.....	1	1	1	.....	.....
Ring-bld. Gull	.....	3	.....	6	8	.....	.....	.....	41
Laughing Gull	.....	.....	.....	.....	.....	.....	.....	.....	1
Bonaparte's Gull	.....	.....	.....	.....	.....	.....	.....	.....	1
Common Tern	.....	4	.....	.....	.....	.....	.....	.....	.....
Rock Dove	.....	.....	9	102	55	27	.....	24	12
Mourning Dove	7	86	25	182	305	88	18	36	48
Yel.-bld. Cuckoo	3	1	2	5	21	5	.....	.....	3
Black-bld. Cuckoo	.....	.....	.....	.....	3	2	2	1	.....
Barn Owl	(1)	.....	.....	.....	.....	1	.....	.....	.....
Screech Owl	.....	.....	.....	.....	1	3	.....	.....	.....
Barred Owl	.....	3	.....	.....	.....	.....	.....	.....	1
Chuck-will's-Widow	(1)	1	1	4	7	2	2	1	3
Whip-poor-will	.....	4	.....	.....	.....	2	.....	1	5
Nighthawk	5	6	3	6	6	2	4	.....	6
Chimney Swift	5	99	48	515	280	305	89	39	128
R.-t. Hummingbird	7	7	7	8	4	3	1	.....	2
Belt. Kingfisher	.....	6	1	7	12	3	4	.....	7
Yel.-sh. Flicker	(1)	18	4	63	65	26	10	28	46
Pil. Woodpecker	3	12	2	17	17	6	3	.....	8
Red-bel. Woodpecker	10	40	5	20	25	8	5	1	4
Red-hd. Woodpecker	2	5	1	32	10	15	1	2	.....
Yel.-bel. Sapsucker	.....	.....	.....	.....	.....	1	.....	2	.....
Hry. Woodpecker	1	5	.....	5	1	4	1	1	.....
Downy Woodpecker	4	37	3	22	33	13	4	14	10
E. Kingbird	1	7	7	37	46	14	6	1	16
Gr. Cr. Flycatcher	16	13	8	41	25	33	15	.....	2
E. Phoebe	2	18	.....	10	23	11	6	4	15
Acadian Flycatcher	34	.....	.....	1	7	.....	5	.....	1
Least Flycatcher	.....	.....	.....	.....	.....	.....	.....	.....	2
Olive-sd. Flycatcher	.....	.....	.....	.....	.....	.....	2	.....	.....
Eastern Wood Pewee	36	3	.....	16	12	6	8	.....	4
Horned Lark	(4)	3	.....	2	15	6	3	.....	9
Tree Swallow	.....	2	.....	6	92	.....	30	.....	3
Bank Swallow	.....	.....	.....	.....	27	.....	.....	.....	17
R.-winged Swallow	2	61	.....	65	53	18	50	17	36
Barn Swallow	.....	67	24	19	161	64	70	24	81
Cliff Swallow	.....	25	.....	510	9	1	33	.....	12
Purple Martin	(1)	10	36	171	380	30	24	1	7
Blue Jay	12	175	33	277	280	113	37	58	100
Raven	.....	.....	.....	.....	.....	.....	.....	.....	2
Com. Crow	15	87	17	110	205	31	29	20	89

Fish Crow	2	.....	.....	.....	.....	.....	.....	.....	.....
Car. Chickadee	14	56	7	52	114	23	8	35	19
Tuft. Titmouse	30	79	13	139	96	61	16	35	36
Wh.-br. Nuthatch	.....	5	.....	19	3	4	.....	13	5
Red-br. Nuthatch	.....	.....	.....	.....	1	.....	.....	.....	1
Brown Creeper	.....	.....	.....	3	1	.....	.....	.....	.....
House Wren	.....	.....	.....	.....	5	8	10	5	4
Winter Wren	.....	.....	.....	.....	.....	4	.....	.....	5
Bewick's Wren	.....	4	13	6	3	3	.....	.....	1
Car. Wren	36	19	7	64	85	30	13	8	29
Lo.-bl. Marsh Wren	.....	.....	.....	.....	2	1	.....	.....	.....
Mockingbird	2	128	37	200	263	57	27	24	65
Catbird	3	7	5	31	52	26	10	9	33
Brown Thrasher	10	29	15	59	84	56	19	27	51
Robin	1	54	13	199	178	58	8	37	98
Wood Thrush	28	20	2	158	79	42	22	30	50
Hermit Thrush	.....	.....	.....	.....	1	.....	.....	.....	.....
Swainson's Thrush	28	3	.....	14	10	.....	6	1	.....
Gray-chk. Thrush	3	.....	.....	1	1	.....	1	.....	.....
Veery	3	.....	.....	3	3	.....	.....	.....	1
E. Bluebird	(3)	21	2	52	49	5	2	.....	6
B.-g. Gnatcatcher	25	113	2	31	70	45	8	2	14
Go.-cr. Kinglet	.....	.....	.....	.....	.....	.....	.....	.....	3
Ruby-cr. Kinglet	.....	14	.....	2	5	2	.....	.....	.....
Cedar Waxwing	20	5	21	88	123	1	6	.....	17
Log. Shrike	(2)	5	.....	7	10	4	.....	.....	.....
Starling	7	477	53	600	890	300	Com.	94	275
Wh.-eyed Vireo	19	41	.....	39	59	11	7	8	14
Yel.-th. Vireo	4	10	.....	13	19	3	4	.....	6
Solitary Vireo	.....	.....	.....	.....	2	.....	.....	.....	3
Red-eyed Vireo	18	82	.....	145	132	12	13	.....	55
Phila. Vireo	.....	.....	.....	.....	.....	.....	.....	.....	1
Warbling Vireo	.....	.....	.....	2	7	1	1	.....	5
Bl. & Wh. Warbler	5	4	.....	13	27	8	9	6	27
Prothonotary Warbler	10	44	.....	1	4	2	1	.....	.....
Swainson's Warbler	(1)	.....	.....	.....	.....	.....	.....	.....	1
Worm-eat. Warbler	.....	3	.....	1	5	8	15	.....	9
Go.-wng. Warbler	.....	.....	.....	1	3	.....	.....	.....	.....
Bl.-wng. Warbler	.....	8	.....	4	2	.....	.....	.....	.....
Tenn. Warbler	92	10	.....	15	11	.....	5	.....	.....
Nash. Warbler	.....	2	.....	.....	1	.....	.....	.....	.....
Parula Warbler	8	5	.....	.....	22	.....	4	.....	15
Yellow Warbler	.....	22	.....	45	70	14	11	3	55
Magnolia Warbler	1	2	2	5	14	.....	4	.....	.....
Cape May Warbler	.....	.....	.....	41	12	4	1	.....	1
Bl.-th. Bl. Warbler	.....	.....	.....	.....	2	1	1	.....	14
Myrtle Warbler	2	48	6	83	65	28	2	3	23
Bl.-th. Gr. Warbler	1	.....	.....	7	19	.....	11	.....	13
Cerulean Warbler	13	42	.....	2	9	.....	9	.....	.....
Blackb. Warbler	2	.....	.....	5	23	.....	12	1	.....
Yel.-th. Warbler	2	17	.....	11	21	.....	8	.....	.....
Chest.-sd. Warbler	4	.....	.....	1	10	.....	.....	.....	3

Bay-br. Warbler	7	.....	.....	1	9	.....	4	.....	.....
Blackpoll Warbler	4	2	.....	41	7	.....	9	.....	.....
Pine Warbler	.....	.....	.....	3	8	.....	.....	3	2
Prairie Warbler	.....	10	1	36	42	.....	5	.....	4
Palm Warbler	.....	38	1	41	42	2	.....	.....	2
Ovenbird	1	12	.....	7	19	5	15	2	45
No. Waterthrush	.....	.....	.....	.....	3	.....	.....	.....	1
La. Waterthrush	4	28	.....	5	4	3	10	.....	5
Ky. Warbler	17	51	.....	23	13	.....	12	.....	2
Yellowthroat	3	30	2	57	68	22	15	.....	51
Yel.-br. Chat	12	12	4	79	82	20	23	1	31
Hooded Warbler	7	17	.....	14	35	.....	11	.....	15
Wilson's Warbler	.....	.....	.....	.....	.....	.....	3	.....	.....
Canada Warbler	1	1	.....	.....	3	.....	2	.....	10
Am. Redstart	28	27	.....	16	17	2	7	.....	18
House Sparrow	.....	154	66	229	137	35	10	73	250
Bobolink	(15)	7	.....	280	145	15	150	.....	13
E. Meadowlark	6	267	41	267	269	131	39	38	119
R.-w. Blackbird	7	277	6	254	376	78	13	24	101
Orch. Oriole	4	23	31	38	56	22	16	1	17
Balt. Oriole	1	2	.....	7	11	.....	4	4	11
Rusty Blackbird	.....	.....	.....	25	.....	2	.....	.....	.....
Com. Grackle	6	829	51	233	292	170	12	52	350
Br.-hd. Cowbird	55	92	5	77	85	44	24	6	38
Scar. Tanager	2	5	.....	17	15	3	13	1	25
Summer Tanager	18	18	4	69	52	36	12	2	1
Cardinal	40	208	49	258	342	101	24	55	115
Rose-br. Grosbeak	2	10	.....	16	32	15	2	9	20
Blue Grosbeak	.....	.....	.....	7	2	4	.....	.....	.....
Indigo Bunting	60	25	4	88	76	23	25	3	24
Painted Bunting	(2)	.....	.....	.....	.....	.....	.....	.....	.....
Dickcissel	(15)	.....	.....	6	2	.....	.....	.....	.....
Evening Grosbeak	.....	.....	.....	42	.....	.....	.....	.....	3
Purple Finch	.....	60	.....	8	14	19	.....	.....	30
Pine Siskin	.....	.....	.....	30	.....	.....	.....	1	2
Ru.-sd. Towhee	2	75	16	193	188	48	21	38	70
Savan. Sparrow	.....	12	.....	6	2	.....	.....	.....	2
Grass. Sparrow	.....	.....	.....	2	10	5	3	.....	10
Leconte's Sparrow	.....	2	.....	.....	.....	.....	.....	.....	.....
Vesper Sparrow	.....	.....	.....	.....	.....	.....	.....	1	1
Bachman's Sparrow	.....	.....	.....	.....	2	.....	2	.....	.....
Sl.-cl. Junco	.....	3	.....	.....	1	.....	.....	.....	28
Tree Sparrow	.....	.....	2	.....	.....	2	.....	.....	.....
Chip. Sparrow	.....	63	7	47	100	38	6	2	41
Field Sparrow	1	76	7	57	144	35	30	2	64
Wh.-cr. Sparrow	2	12	2	1	13	39	1	.....	9
Wh.-th. Sparrow	.....	68	.....	69	176	31	16	10	20
Lincoln's Sparrow	.....	.....	.....	.....	.....	1	.....	.....	.....
Swamp Sparrow	.....	6	.....	.....	.....	.....	.....	.....	1
Song Sparrow	.....	.....	1	59	213	42	40	12	76
TOTAL SPECIES	78 + (14)	127	66	131	143	106	121	63	132
GRAND TOTAL SPECIES									195

(continued from page 29)

The Ring-necked Pheasants have been released in several areas of the state, recently by the State Game and Fish Commission. If the species thrives as expected it should occur on our censuses with increasing frequency.

The various chapters are to be congratulated on their excellent counts. The high counts indicate what can be done by proper planning and assigning of territories, searching for specific hard to find species and making positive identification, even by relatively small numbers of observers.

Since only a few of the chapter reporters provided little more information than to fill in parts of the blank spaces on the check-list, and the areas covered were approximately the same as in former years, this information is being omitted.

In the table, as usual, the chapter are listed progressively from west to east and the date upon which the count was made accompanies the name of the chapter. In the column headed "Memphis" the figures enclosed in parentheses ( ) denote birds seen only outside the Shelby Forest area.

T. O. S. ANNUAL MEETING, 1960

The Tennessee Ornithological Society held its 45th annual meeting jointly with the Wilson Ornithological Society, May 5-8, 1960 at Gatlinburg, Tennessee.

On the opening evening, Thursday, May 5, Mr. Arthur Stupka, Chief Park Naturalist for the Great Smoky Mountain National Park presented a very interesting and delightful selection of colored slides of flowers and birds found in the park. Following the showing of the slides in the Huff House an informal reception was given by the Knoxville Chapter of T. O. S.

At 6:30 on Friday and Saturday mornings members and guests of the societies met at Park Headquarters for conducted field trips around the area. Leaders for these trips were: Messrs. John Elson, J. T. Mengel, J. B. Owens, and Miss Jesse Dempster.

The Wilson Ornithological Society presented papers, both morning and evening of Friday and Saturday, in which T. O. S. members Ben B. Coffey, Jr., Thomas W. Finucane and Dr. J. T. Tanner participated. Friday evening Mr. and Mrs. Eugene West gave an informal showing of a film they had recently taken, with Mrs. West as narrator. The program was enthusiastically received.

The Board of Directors' Meeting was held in the Pine Room of the Mountain View Hotel as a luncheon meeting at 11:45 A. M. on Saturday.

Mr. Finucane gave the Treasurers report and Mr. Garlinghouse, as Chairman of the Auditing Committee, reported the treasury books in order.

Mr. John Ogden reporting for the committee on protected birds reported that through the efforts of the committee they had succeeded in omitting the Turkey and Black Vulture from the Unprotected list of Hunting Regulations for one year. If no complaints were registered other birds would likewise be dropped from the unprotected list.

Mr. Ganier reported the revision of the Distributional List of Birds of Tennessee was about ready for the printers. Mr. Will Hon of the State Game and Fish Commission, announced that $1,000 had been set aside in the budget for the publication of 10,000 of the T. O. S. lists. On behalf of the members, Pres. Pardue extended thanks for this generous consideration.

The Executive Board voted to continue the Newsletter for another year with a cost not to exceed $150.00. Temporary arrangements were made for providing the Secretary with a typewriter until arrangements can be made for the purchase of one.

Mr. Garlinghouse gave a report on the proposed organization of Ornithological and Natural History Societies for the following purposes: 1. To facilitate mutual exchange of experience; 2. To facilitate the work of member societies in promoting the proper use and management of natural resources in accord with the principles of good conservation; 3. To support educational and scientific work in the fields of conservation and natural history. The Board voted to investigate the matter further and bring its findings to the Board next year. The President offered to attend the next scheduled meeting as a representative of the T. O. S. at his own expense.

Dr. Farrell and Dr. Farrer, of Vanderbilt University, have received a grant from the National Science Foundation for the investigating of soaring birds in free flight by using a sail plane and releasing captive birds. An appeal was made for the acquisition of nestling Black and Turkey Vultures and Red-tailed Hawks. Adult birds used in these experiments will be allowed to go free after one trial flight. Immature birds are to be trained to return and thus used for perhaps many flights.

Mrs. Richard Nevius, as Chairman of the Resolutions Committee, reported as follows:

1. That the T. O. S. express its gratitude to the Knoxville Chapter and particularly to Mr. David Highbaugh, president of the Knoxville Chapter, and to Mrs. Robert Monroe, Chairman of the Local Committee on Arrangements.

2. That the T. O. S. express its deep appreciation and extend its sincere thanks to the Wilson Ornithological Society; to the president, Dr. Lawrence H. Walkinshaw, and to all its members who have contributed to the success of the meeting.

3. That the T. O. S. express its appreciation to the National Park Service and particularly to Mr. Arthur Stupka, Chief Park Naturalist.

4. That the T. O. S. express its deep gratitude and extend its sincere thanks to Gene and Adele West for their splendid movies shown on Friday evening and to Maurice Broun for his showing of the film "Four Seasons at Hawk Mountain" on Saturday evening.

5. That appreciation be expressed to Tom Finucane for his work in connection with the Tennessee Hawk count and for his presentation of a paper on this subject to the Wilson Ornithological Society and to Dr. James T. Tanner and to Ben B. Coffey, Jr., for papers read at the meeting of the Wilson Society.

6. That the T. O. S. reaffirm its position for 1959 opposing the indiscriminate broadcast treatment with highly toxic chemicals such as heptachlor in pest control programs, and, if the chemicals are to be used, their use coordinated with the U. S. Fish and Wildlife Service so that undue harm to Wildlife may be prevented.

7. That T. O. S. express appreciation to Mr. Will Hon who has graciously agreed to publish through the Game and Fish Commission facilities Mr. Ganier's **Checklist of the Birds of Tennessee,** at no cost to the T. O. S.

The Memphis Chapter invited the members of T. O. S. to hold their 1961 meeting at Reelfoote Lake.

The Saturday evening banquet was served in the main dining room of the Mountain View Hotel. Dr. Walkinshaw, president of the Wilson Society introduced members and guests. Other societies represented were Alabama, Georgia, Kentucky and Mississippi Ornithological Societies and the National Audubon Society.

Mr. Dixon Merritt, one of the founders of the T.O.S., gave the invocation.

Dr. Walkinshaw gave a very timely address. He pointed out the immediate need of obtaining natural habitats for the preservation of bird and animal life. He stated the rapidly increasing population was causing extensive destruction of areas of natural habitat. He also commented on the very practical and helpful use of mist nets for banding birds. After Dr. Walkinshaw's address, the members retired to the Huff House to see "The Four Seasons at Hawk Mountain", by Mr. and Mrs. Maurice Broun. The audience found the film delightfully entertaining and informative.

Sunday morning field trips were to Andrews Bald and Clingman's Dome and were led by Dr. Tanner, Dr. Howell, and Mr. Stupka.

It was impossible to take a composite list of birds found during the meeting because of the merging of the T. O. S. meeting with that of the Wilson Ornithological Society.

MRS. H. C. GARLINGHOUSE, Secretary, 2012 Cedar Drive, Knoxville 18

ROUND TABLE NOTES

LAPLAND LONGSPUR AT OAK RIDGE. — On March 10, 1960, the day after our biggest snowstorm of this unusual winter season, the ground was covered with snow, and more birds than usual came to our feeding area outside our office windows at the Special Training Building of the Oak Ridge Institute of Nuclear Studies. I had scattered seed over the snow when I filled the feeder and a number of small birds were feasting on it. The usual flock of Juncos was there, and some House Sparrows, three or four Song Sparrows, one Towhee, one Cardinal, one White-throat, a Field Sparrow, and one female Purple Finch who had made her first appearance the week before. Suddenly my attention was attracted to a sparrow-sized bird **running** across the snow, who had what appeared to be a light narrow band or strap extending from below his cheeks up to the crown of his head and an area of deep chestnut on the back of his head. He was about the size of the White-throat, was a much neater bird than the House Sparrow, and ran rather than hopped, which was unlike either of them. I knew I had a bird which I had never seen before and I jotted down all the markings I could discern and then called Julia Moore here in Oak Ridge, whose school was closed on account of the snow. I suggested the possibility of a Lapland Longspur, although my remembrance of the description was quite vague. The only reason I considered the possibility of its being this far south was that the Tom Caters of the Georgia Ornithological Society had written in their Christmas letter that they had discovered a Lapland Longspur in a field of Horned Larks, near Macon, Georgia. My description of the bird still feeding outside my window tallied beautifully with the description Julia read from her bird books of the Lapland Longspur. I must say that because the feet sank slightly into the snow at every step, I could not definitely make out the long spur. Several times during the morning the birds feeding on our lawn became startled and flew off. The first time I was dismayed, thinking I would not see the Longspur again, but I was delighted to have him reappear in practically the same spot in just a few seconds.

The next time he flew I watched, and found that instead of taking cover in the shrubbery as the other birds did, he flew up into the sky in a big elipse and back to the ground near the spot where he took off, much the way the Horned Larks do.

Soon after lunch-time, Clara Dunbar (Mrs. Robert Dunbar) came over with a friend who had managed to navigate her car in the snow, bringing with her binoculars and bird books, but, true to form, the bird refused to appear. From the pictures and description in the books, I ascertained that the bird was a male, in plumage about half way between summer and winter. His throat was much darker than the picture of winter plumage, and the top of his head was lighter brown with a small beige streak on the crown. The chestnut patch on the back of his head appeared solid and about as dark as the pictures of summer plumage. Altho we spread seed on the ground all of that week and watched for him constantly, the bird did not come back after that morning.

Perhaps I should add that we put up the bird-feeder last fall on our stretch of lawn about 100 ft. square, surrounded on 3 sides by our building and bounded on the 4th by the AEC cyclone fence and driveway. I became quite discouraged because only a small flock of House Sparrows found it for a long time. One of the flock very cleverly began swishing seeds off onto the ground with his bill, so that the rest of the birds could feed on the ground. When the weather got bad, the Juncos and Song Sparrows came, and fed on the seeds on the ground, and it wasn't until we had snow that any of the other birds appeared. The Lapland Longspur apparently came with the Juncos and the Song Sparrows, so we **may** owe our only East Tennessee record to the detested House Sparrow. During the snowy days following March 10, we also had two male Purple Finches, and two Robins for whom we put out crumbs. All of the birds continued coming during the snowy weather, except for the little Lapland Longspur, who must have been well on his way back to the frozen north. This apparently is the only East Tennessee record, although the Lapland Longspur has been reported in the Memphis area, and at some time in the Nashville area.

MRS. E. E. OVERTON, 1307 Woodcrest Drive, Knoxville 18.

TREE SPARROW IN CHATTANOOGA.—Sunday afternoon, February 28th, was one of our few clear days after almost two weeks of snow and bad weather. We noticed that a wave of sparrows had moved into our yard that day—our White-throat and Field Sparrow population had increased and, in addition, two Fox Sparrows and a pair of Song Sparrows had appeared.

I was pruning some roses when I heard an unfamiliar song—one with a sparrow-like quality, but one I had never heard before. I got the binoculars and began a search for the bird. I found it in a tulip poplar 25 or 30 feet from where I was standing. It was facing me and singing. The light was fairly good and my view unobstructed. The bird was on a lower limb and I could clearly see the rusty cap and clear breast with the black stickpin. I identified it as a Tree Sparrow *(Spizella arborea)*. However, since it was the first I had ever seen, I called my husband to come outside and double-check my identification. Before he arrived, the bird flew away. We remained outside about thirty minutes and heard it singing, but were unable to get another good look at it.

We then went into the house and played the Peterson-Allen "Field Guide to Bird Songs" record of the tree sparrow song, and this further substantiated our identification as the song was identical. We have not seen the bird since that time.

CARROLL D. BARR, 221 Peace St., Chattanooga, Tenn.

THE RING—INTERNATIONAL ORNITHOLOGICAL BULLETIN.—You might see THE RING or hear of it. Here are some facts and information on it. THE RING is an international, quarterly bulletin devoted entirely to bird banding and bird migration studies. Its main aim is to bring news and information on all the aspects of bird banding everywhere, either theoretical or practical. Since its first issue in October 1954 THE RING has published articles and notes by 134 authors from 47 countries, listed 1093 papers and studies in its bibliographical section, and reviewed 77 books of special selection. Besides the articles the permanent sections: 'Various Problems,' 'How They Work,' 'Notes and News,' 'Recoveries,' etc., supply a mass of interesting information referring to important banding problems, banding and trapping techniques, achievements and results obtained by all the banding schemes, events and news from all the parts of the world and most interesting and important recoveries of banded birds.

Bird banding is international in its aims and scope. It does not matter where you are living or banding, you need information on methods applied by others, results obtained elsewhere, and problems facing different stations or schemes. THE RING will keep you up to date in this respect, will link you with other banders throughout the world and will give you opportunities to share your experiences and troubles with them.

As a source of reference THE RING is invaluable and its 'Recent Literature' section is the most comprehensive and as complete as possible. Among others this is the reason for which THE RING should be kept by every general zoological or ornithological library.

Last year THE RING was adopted by the International Committee for Bird Ringing as the medium of publication for all official recommendations and announcements of the Committee. This makes it indispensable for everyone interested in the international aspect of bird banding. THE RING covers the entire banding world and its co-editors situated in various countries keep it well informed.

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DR. W. RYDZEWSKI, 1 Altyre Road, Croydon, Surrey, ENGLAND.

CAMPUS BIRD COUNT—UNIVERSITY OF TENNESSEE, KNOXVILLE.—A new bird for Knox County, the Alder or Traill's Flycatcher, was reported in the first University of Tennessee Campus Bird Count, held Sunday, May 10, 1959.

Spending about eight hours in the field, three members of the Knoxville Chapter of T.O.S., Kenneth Dubke, Robert Hamilton and the writer, conducted the count. The project was carried out as part of the nation-wide Campus Bird Count organized by Sarah Lawrence College, Bronxville, N.Y. Most of the territory owned by U-T in Knoxville and Knox County, some 650 acres, was covered. A total of 71 species and 614 birds was enumerated.

Messrs. Dubke and Hamilton found the Traill's Flycatcher in a forestry tract lying south of Cherokee Trail on the bluffs south of Fort Loudoun Lake. Identification was made principally by the "we-be-o" call. The following Saturday, May 16, David Highbaugh, Paul Pardue and the writer also observed the bird in the same area.

The total tally for the U-T count follows: Green Heron, 1; Bobwhite, 6; Killdeer, 1; Rock Dove, 12; Mourning Dove, 36; Yellow-billed Cuckoo, 3; Nighthawk, 1; Chimney Swift, 25; Ruby-throated Hummingbird, 3; Flicker, 3; Pileated Woodpecker, 3; Downy Woodpecker, 1.

Eastern Kingbird, 2; Great Crested Flycatcher, 5; Acadian Flycatcher, 8; Traill's Flycatcher, 1; Wood Pewee, 2; Olive-sided Flycatcher, 1; Purple Martin, 2; Blue Jay, 14; Common Crow, 10; Carolina Chickadee, 9; Tufted Titmouse, 4; Carolina Wren, 11; Mockingbird, 23; Catbird, 2; Brown Thrasher, 1.

Robin, 30; Wood Thrush, 5; Swainson's Thrush, 20; Veery, 1; Eastern Bluebird, 1; Blue-gray Gnatcatcher, 30; Starling, 70; White-eyed Vireo, 2; Yellow-throated Vireo, 1; Red-eyed Vireo, 21; Warbling Vireo, 2.

Warblers: Black-and-white, 6; Worm-eating, 1; Yellow, 4; Cape May, 4; Cerulean, 3; Blackburnian, 4; Bay-breasted, 1; Blackpoll, 6; Pine, 8; Ovenbird, 2; Kentucky, 4; Yellowthroat, 2; Yellow-breasted Chat, 6; Hooded, 6; Canada, 4; American Redstart, 4.

House Sparrow, 13; Eastern Meadowlark, 4; Redwinged Blackbird, 8; Orchard Oriole, 8; Common Grackle, 32; Brown-headed Cowbird, 15; Scarlet Tanager, 2; Summer Tanager, 9; Cardinal, 22; Rose-breasted Grosbeak, 1; Indigo Bunting, 14; Goldfinch, 8; Rufous-sided Towhee, 18; Chipping Sparrow, 2; Field Sparrow, 7; White-throated Sparrow, 2; Song Sparrow, 11.

JOHN ELSON, 2001 Ogden Avenue, Knoxville 16, Tenn.

ERRATA

Vol. 30, No. 3. September, 1959. OBSERVATIONS AT BUSH LAKE. Page 33

Line 9, Common Loon: . . . Nov. 21 and 24 and Mar. 18 . . .

Line 15, Mallard: . . . until Jan. 16 (1); . . .

Line 17, Green-winged Teal: Oct. 23 (3) and . . .

Line 5 from bottom of page should read "Hawk: (2) Jan. 14; Sparrow Hawk: one or two pairs all year" . . .

Page 34 line 3, . . . April 20 (1) then 1 to 7 . . .

Line 7, Ring-billed Gull: . . . Dec. 6 (180) and then continued to increase until a peak was reached Dec. 20 (285), Jan. . . .

THE MIGRANT

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The simple truth about birds is interesting enough; it is not necessary to go beyond it.

NOTE OF APPRECIATION

Considering the tremendous responsibility and the long hours of planning and execution of the plans, various members of the Knoxville Chapter of T. O. S. are due a very deep debt of gratitude and a special vote of thanks and commendation for the very excellent manner in which the joint meetings of the Wilson and Tennessee Ornithological Societies were conducted in Gatlinburg on May 5-8, 1960.

Mrs. Robert A. Monroe served as chairman of the local committee, assisted by her very capable and efficient husband, as well as co-chairmen Paul Pardue and David Highbaugh. The Monroes manned the registration desk throughout the meeting. Paul Pardue attended to all equipment and provided projectors and a projectionist when needed. David Highbaugh planned and provided leaders for the field trips, while his wife mimeographed all the abstracts at half price. The Knoxville Chapter of T. O. S. arranged for and carried out the reception on Thursday night and provided the refreshments. Mrs. E. E. Overton and Mr. and Mrs. H. C. Garlinghouse assisted in many ways, while Dr. James Tanner, Dr. Joseph Howell and Mr. Arthur Stupka led field trips and provided information.

All those mentioned and many others contributed to a most successful and enjoyable meeting.

T. O. S. OFFICERS 1960-1961

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