ARBOR DAY MANUAL

FOR

IOWA PUBLIC SCHOOLS

I think that I shall never see
A poem lovely as a tree.
—Joyce Kilmer

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FOREWORD

SPECIFIC PURPOSE

The specific purpose of this bulletin is to provide concrete and usable material for teachers and pupils in the observance of Arbor and Bird Days in the public schools. Arbor Day is designated each year by a proclamation by the governor, while Bird Day is fixed by section 4249, Code of Iowa, 1927, as the twenty-first day of March. The one deals with the program of rehabilitation of the forests, and the protection and pepetuation of our trees, the other directs attention to the study of the usefulness, habits, and the protection of birds.

LARGER OBJECTIVE

Since interest in the outdoor world should extend beyond one special day's activities, it is hoped that this material will enrich the content of many lessons carried on throughout the year. With the increasing amount of leisure time for discovering the byways of nature now becoming possible, inspirational leadership in teaching children the enjoyment of life through an appreciation of beauty is highly desirable.

An "outdoor museum" is available to every child in this great state, if his eyes are but opened to behold its beauty. With that challenge, we present this bulletin.

ACKNOWLEDGMENTS

We are deeply indebted to Professor I. T. Bode, Extension Forester, Iowa State College, for the preparation of the Arbor Day Manual, and to Professor George O. Hendrickson, Instructor in Zoology, Iowa State College, for the preparation of the Bird Manual. Acknowledgment is given by them to Miss E. Grace Rait, for contributing reference materials, to Mrs. Francis E. Whitley and Mrs. Henry Frankel for conservation suggestions, and to Mr. J. R. Fitzsimmons for preparation of the material on school ground planting and state parks. Permission to use certain excerpts from Trafton's Teaching of Science in Elementary Grades was given by Houghton Mifflin Co. We hereby express our appreciation also for all the other helps given in the preparation of this bulletin.

AGNES SAMUELSON
Superintendent of Public Instruction

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WHY WE HAVE ARBOR DAY

No one knows just when or where people first began to hold festivals for tree planting, but Arbor Day started in America in the state of Nebraska in 1872. Nebraska originally was mostly without trees, and Arbor Day was started to show the importance of trees to the state and to get trees planted. J. Sterling Morton was the man who originated it. He was a member of the state board of agriculture at the time and later was United States Secretary of Agriculture. The legislature of Nebraska adopted the resolution, which was introduced by Mr. Morton, to set aside a day for tree planting, on January 4, 1872, and the first Arbor Day was held on April 10, 1872. Since that time the observance of Arbor Day has spread to all of our states.

There is no national date for Arbor Day. In Iowa it is set by proclamation by the governor.

During the last few years, Arbor Day has come to be observed in many of the states during American Forestry Week. This week was formerly called Forest Protection Week and was proclaimed by the President of the United States for the purpose of getting everybody to realize the need for taking care of our forests. Now, American Forestry Week includes not only the protection of our forests but also the planting of new trees and forests and the taking care of our whole out-of-doors. This week usually fell during the latter part of April, and Arbor Day in Iowa and many other states usually fell on one of the days of this week. So, we had in the United States a day and a week when all the boys and girls and grown-ups of the whole country were thinking about planting trees, caring for trees, and preserving the out-of-doors. In 1929 it was decided to discontinue American Forestry Week as such, because the idea and purpose had become universal enough to turn the responsibility back to the individual states.

WHEN THE STATES OBSERVE ARBOR DAY

State or Territory	First observance	Time of Observance
Alabama	1887	In the spring; often on "Audubon day"
Arizona	1890	In five northern counties, the Friday following 1st day of April; elsewhere, Friday following 1st day of February

WHEN THE STATES OBSERVE ARBOR DAY—Continued

State or Territory	First observance	Time of Observance
Arkansas	1906	First Saturday in March
California	1886	March 7, birthday of Luther Burbank
Colorado	1885	Third Friday in April. The governor issues a proclamation each year
Connecticut	1886	In the spring, by proclamation of the governor
Delaware	1901(?)	In April, by proclamation of the governor
District of Columbia	1920	Third Friday in April, by proclamation.
Florida	1886	First Friday in February
Georgia	1887	First Friday in December
Hawaii	1905	In November, before the winter rains.
Idaho	1886	Various dates between April 1 and May 1, selected by county superintendents
Illinois	1887	Arbor and bird days in April and October, by proclamation of the governor.
Indiana	1884	Third Friday in April each year
Iowa	1887	Proclamation of the governor, usually during American Forestry Week, late in April.
Kansas	1875	Option of the governor
Kentucky	1886	In the fall, by proclamation of the governor
Louisiana	1888	Second Friday in January, by resolution of state board of education
Maine	1887	In the spring; option of the governor
Maryland	1884	First or second Friday in April, by proclamation of the governor
Massachusetts	1886	Last Saturday in April, by proclamation.
Michigan	1885	Usually last Friday in April or first in May, by proclamation of the governor
Minnesota	1876	Latter part of April, by proclamation of the governor; usually upon the suggestion and recommendation of the State forest service
Mississippi	1890	December or February. Law authorizes State board of education to fix date
Missouri	1886	First Friday after first Thursday in April
Montana	1888	Second Tuesday in May
Nebraska	1872	Apr. 22, birthday of J. Sterling Morton.
Nevada	1887	By proclamation of governor
New Hampshire	1886	Early in May, by proclamation of governor
New Jersey	1884	Second Friday in April
New Mexico	1890	Second Friday in March, by proclamation.
New York	1889	Friday following the 1st of May
North Carolina	1893	Friday after Nov. 1, by proclamation of the governor
North Dakota	1882	Option of the governor
Ohio	1882	About the middle of April, by proclamation of the governor
Oklahoma	1898	Friday following the second Monday in March
Oregon	1889	Second Friday in February in western Oregon; second Friday in April in eastern Oregon
Pennsylvania	1887	In the spring, by proclamation of the governor, and in the fall by authorization of superintendent of public instruction
Philippine Islands	1906	Usually late in September or early in October, by proclamation of the governor
Porto Rico	.....	Last Friday in November
Rhode Island	1887	Second Friday in May—public holiday
South Carolina	1898	Third Friday in November
South Dakota	.....	No law, but generally observed in April throughout the State
Tennessee	1875	First Friday in April, by proclamation of the governor.
Texas	1890	Feb. 22
Utah	.....	Apr. 15
Vermont	1885	Usually first Friday in May.
Virginia	1892	In the spring, by proclamation of the governor
Washington	1894	Usually the first Friday in May, by proclamation of the governor
West Virginia	1883	Usually observed on the second Friday in April
Wisconsin	1892	Usually observed on the first Friday in May
Wyoming	.....	Usually observed on the first Friday in May.

OUTDOOR LESSONS FOR JUNIORS

Month	Small Children	Intermediate Groups	Older Groups
September	1. *Make a tree book, put in leaves you like and pictures of what you like to play in the trees. 2. *Learn a poem about trees and the outdoor fairies. 3. *Cut and color an elm tree with "Chippy Squirrel's" home in it, and a spruce tree for Chickadees in winter. 4. *See if you can find a Chickadee.	5. On a field trip learn to know ten trees in your locality, ten shrubs and vines. 6. Learn to know the wood from ten trees you learn. 7. Make drawings and leaf prints of these leaves and the wood. 8. Study the main parts of the tree and learn what their functions are.	9. Make a collection of leaves from 20 trees and shrubs, press and mount them and label them properly. 10. Collect the seeds from as many of the above as possible and put with mounted specimens. 11. Make a tree map of your city, or part of it, showing what trees are found along the streets. 12. Take a picture of each tree from which above leaves came.
October	*Go to a leaf party in the woods. 1. Run, jump, roll and play "Squirrel in a Tree." 2. Sit down very still and listen to the wind and tell the sounds you hear and what they make you think of. 3. Find out how many kinds of leaves come to the party and what color dresses they wear.	4. Gather as many kinds of nuts as you can from the woods; specimens from several different trees of each kind. Crack carefully and make a note of differences in thickness of shell, flavor, and the like. 5. Hold a nut contest to see who can find the best. 6. Gather ten tree seeds and study provisions for dissemination and how to store over winter. 7. How many birds can you see gathering seeds from trees and shrubs? What relation do birds have to dissemination of seeds?	8. Learn what "good quality" in nuts is. 9. Have a nut contest to find the best nuts, and make a visit to the winning parent trees. 10. Study the food value of nuts. 11. Observe the list of trees in the order in which they drop their leaves and note the color of each kind when it falls.
November	1. *Make a trip around town and watch the trees get ready for winter. 2. *Find out the secrets of the trees; how the sap runs down in the roots, why the leaves drop, if the bark is thicker on the storm side, how to tell ash from elm by its shape, how the seeds fly and roll. 3. *Add seeds that ripen in the fall to your tree book. 4. *Have a little play for your "school night," on "Winter Secrets in the Woods."	5. Make a trip to the lumber yard and learn all you can of lumber, how it is made and its uses, where it comes from. 6. List the uses for the lumber from the 10 trees you learned to know. 7. In the field, make all the notes you can about the difference between trees growing by themselves and in the woods with other trees. 8. List the kinds of lumber in your furniture at home.	9. Learn how to calculate the volume of a log and the volume of wood on an acre of woodland. 10. Learn how to count the age of a tree. 11. Learn how wood is built up by studying sections through a microscope. 12. Make a list of all the uses of wood and wood products that you can; get your lumber dealer and local chemist to help you. Where are our largest lumber supplies?

OUTDOOR LESSONS FOR JUNIORS—Continued

Month	Small Children	Intermediate Groups	Older Groups
December	1. *Study some spruce and cedar trees in town, and when Christmas trees are coming to town, have a Christmas tree story around a living Christmas tree; a fairy Christmas tree that keeps the Chickadee warm. 2. *When a snow turns out-doors into a fairyland, have a snow party among the trees.	3. Make a list of gifts seen in store windows made of wood or depending on wood products. 4. Make a list of the different kinds of trees shipped in for Christmas trees and color a map to show parts of country from which they come. 5. See if you can find out the origin of the use of Christmas trees. 6. Arrange for a community Christmas tree and appropriate exercises.	7. Learn how young woodlands can be thinned to give Christmas trees without harming the future crop. 8. Make a simple plan showing how you can plant a few trees each year in the garden and always have a live Christmas tree. 9. Make a map showing where Christmas trees come from.
January	1. *Tell the story about making lumber and how we must care for the trees because we need them for lumber (use pictures, a timber film, and a trip to a lumber yard). 2. *Get some samples of wood from the lumberman and watch the manual training boys make furniture. 3. *Tell about the furniture in your home.	4. Study some facts about the country's forest area and timber, and what the future will be. 5. Use some movies or lantern slides on forest work. 6. Study the danger of forest fires and their damage, and each child learn five or six rules for use of fire out-doors. 7. Write a story telling what things you think make up "Good Manners in the Out-of-Doors."	8. Study some facts about the country's forest area and timber and what the future will be. 9. Use some lantern slides or movies on forest work. 10. Study the danger of forest fires and their damage, and each child learn five or six rules for use of fires out-doors. 11. Write a story telling what things you think make up "Good Manners in the Out-of-doors."
February	1. *Find a tree that furniture is made from. 2. *Bring the wood of your library table. 3. *Put the oak wood with the oak tree picture. 4. *Find a hard wood. Find a soft wood. 5. *Tell a way our country can take care of lumber trees.	6. Learn about our National Forests—how many there are, where they are, what their purpose is, how they are administered. 7. Make a list of good shade trees, of good street trees, of good lumber trees, of good wind break trees. 8. Draw a plan for planting trees on the school grounds.	9. Draw a plan of your home yard and decide where to plant trees and shrubs. 10. Learn the effects of forests and trees upon soil, erosion, and water movement. 11. Trace on a map where the forests of Iowa are found.

OUTDOOR LESSONS FOR JUNIORS—Continued

Month	Small Children	Intermediate Groups	Older Groups
March	1. *Have someone give a talk on how to beautify your town and home grounds. 2. *Plan a little play project on "Home Yards and Gardens." 3. *Plant some of the trees best liked, in the play garden on the floor. 4. *Tell about birds and how the birds will soon be back.	5. Learn how to plant various seeds and help them to grow. 6. Put some seeds in sand and draw them at various times while they are germinating and growing. 7. Learn why trees are transplanted in the nursery. 8. Draw a tap-rooted tree and one with spreading roots.	9. Study how trees grow in length and diameter. Put some twigs in water and watch the buds open and the young twig start. 10. Learn how leaves manufacture the food of the tree. 11. Make a visit to a tree nursery and write a story of the operations. 12. Make a list of windbreak trees and draw a plan for a windbreak.
April	1. *Tell Daddy, mother and friends how pretty the town would look with the right kind of trees on all the parkings. 2. *Have the children help make a tree exhibit in a window down town, like the garden they made on the floor. 3. *Tell them about Arbor Day and American Forest Week and about all the children all over the country who will be talking about planting and caring for trees. 4. Have them plant a tree.	5. Write a story about Arbor Day and American Forestry Week. 6. Learn how to plant a tree or shrub. 7. Take part in a tree planting exercise. 8. Plant a windbreak around the school grounds. 9. Hold an Arbor Day Program.	10. Help your school observe Arbor Day and American Forestry Week. 11. Make up a program that can be used for a tree planting exercise. 12. Plant a tree for Arbor Day, or, if possible, plant some of the things you put on the plan for your home yard.
May	1. *Watch the trees open into leaf, and gather twigs and arrange in order of opening of buds. Note which have blossoms first and which leaves. 2. Bring in some twigs of crabapple, put in water and watch the blossoms open.	3. Learn how to care for newly planted trees. 4. Learn about Iowa's state parks and locate them on a map. 5. Write a story on why you think Iowa needs trees and shrubs and wooded areas.	6. Learn more about Iowa's woods and parks. If possible, make a trip to a State Park and write a story of what you saw there. 7. Hold an essay contest on what you have learned about trees, shrubs and forestry. Perhaps the local newspaper or some magazine would like to publish the winning stories.
June, July and August	In all boys' and girls' groups, wherever summer hikes or camps are held, the lessons should consist of studies in additional tree, shrub, and wild flower identification, of the camp fire building and use of fires in the out-of-doors, camp sites and shelters, proper camp equipment in the woods, how to know woods, what to do if lost, how to thin and harvest trees, visits to lumber mills, and the like.		

*Taken from a program of work developed by Miss Grace Jones, Ida Grove, Iowa.

Wherever possible the studies should be made in the field. The suggestions are intended chiefly for use of teachers and leaders and are worded partially as suggestions to the leader.

The reference list following is grouped to fit in with the foregoing lesson schedule.

CORRELATION OF TOPICS IN OUTDOOR LESSONS TO REGULAR STUDIES

Subject	Month	Topics (Numbers refer to paragraphs in Outdoor Lesson Schedule preceding)
Language	October	8 and 12
	November	7, 8, and 12
	December	3 and 4
	January	7 and 11
	February	6, 7, and 10
	March	7 and 11
	April	5 and 11
	May	5 and 7
Science	September	5, 6, 8, 9, and 10
	October	5, 7, and 12
	November	7 and 11
	March	5, 6, 7, 8, 9, and 10
	May	3
Geography	September	11
	November	5 and 12
	December	4 and 9
	January	4, 5, 8, and 9
	February	6, 10, and 11
	May	4 and 6
Art and Drawing	September	7 and 12
	October	12
	February	8 and 9
	March	6 and 12
Arithmetic	November	9 and 10
	December	7 and 8
History	December	5
	January	4 and 8
	February	6
	April	5 and 10
	May	4 and 6
Physiology	October	11
Economics	October	8 and 11
	November	5, 6, and 12
	January	4, 6, 8, and 10
	February	6 and 10
Manual Training	November	5, 6, 8, 11, and 12
Civics or Sociology	December	6 and 7
	April	6, 7, 8, 9, 10, and 12
Contest Activity	October	6, 9, and 10
	January	7 and 11
	April	5 and 11

REFERENCES FOR FOREGOING CALENDAR OF STUDIES

A. *Outlines for Graded Lessons and Instructions*

NOTE—How can I carry on these studies? These references will aid in formulating plans and preparing studies. The school readers should be freely used

1. The Forest—A Handbook for Teachers, by D. Priscilla Edgerton, U. S. Department of Agriculture, Miscellaneous Circular 98
2. Idle Land and Costly Timber, U. S. Department of Agriculture, Farmers' Bulletin 1417
3. Handbook of Nature Study for Teachers and Parents, by A. B. Comstock, Comstock Publishing Co., Ithaca, New York
4. Nature and Science for Intermediate Grades, by Gilbert H. Trafton, The MacMillan Co., Chicago, Illinois
5. First Lessons in Nature Study, by Edith M. Patch, The MacMillan Co., Chicago, Illinois
6. Our Forests—A National Problem, by Ben T. Rohan, C. C. Nelson Publishing Co., Appleton, Wisconsin

B. *Programs, Plays, and Exercises for Arbor Day and American Forest Week*

NOTE—What can I do to observe these occasions?

1. Arbor Day—Its Purpose and Observance, by Lewis C. Everard, U. S. Department of Agriculture, Farmers' Bulletin 1492
2. Miscellaneous publications issued by the U. S. Department of Agriculture for American Forestry Week and available about the latter part of March, containing forestry facts, items on forest protection, suggested programs for exercises, information for publicity, and the like
3. Trees as Good Citizens, by Charles Lathrop Pack, American Tree Association, 1214 Sixteenth St., N. W., Washington, D. C.
4. Where Are My Wildflowers? A Pageant by Geo. Bennett, Iowa City, Iowa
5. Save the Trees. A Playlet, by Mrs. L. B. Schmidt, Ames, Iowa
6. The Forest Fire Helpers. A Masque, by Shirley W. Allen, American Forestry Association, Lennox Bldg., 1532 L St., Washington, D. C.
7. Forestry Lessons on Home Woodlands, U. S. Department of Agriculture, Department Bulletin 863
8. The Story of My Boyhood and Youth, by John Muir

C. *Information for Talks*

NOTE—What can I say in a Conservation talk?

1. The Forest—A Handbook for Teachers, by D. Priscilla Edgerton, U. S. Department of Agriculture, Miscellaneous Circular 98
2. The Forestry Primer, by Charles Lathrop Pack, the American Tree Association, 1214 Sixteenth St., N. W., Washington, D. C. (Copies of this publication are available thru the Forestry Department, Iowa State College, Ames, Iowa.)
3. Miscellaneous publications issued by the U. S. Department of Agriculture for American Forestry Week and available about the latter part of March, containing forestry facts, items on

forest protection, suggested programs for exercises, information for publicity, and the like

4. The Forestry Almanac. The American Tree Association, 1214 Sixteenth St., N. W., Washington, D. C.
5. Our National Forests, by Richard H. Douai Boerker, The MacMillan Co., 60 Fifth Avenue, New York
6. Forestry Lessons on Home Woodlands, U. S. Department of Agriculture, Department Bulletin 863
7. Idle Land and Costly Timber, U. S. Department of Agriculture, Farmers' Bulletin 1417
8. Deforested America, by Major George P. Ahern, Deforested America, 1617 Rhode Island Ave., Washington, D. C.

D. The National Forests

NOTE—What is the Government doing for Forestry and Conservation?

1. Miscellaneous publications issued by the U. S. Department of Agriculture for American Forestry Week and available about the latter part of March, containing forestry facts, items on forest protection, suggested programs for exercises, information for publicity and the like
2. The Forestry Almanac, American Tree Association, 1214 Sixteenth St., N. W., Washington, D. C.
3. Our National Forests, by Richard H. Douai Boerker, The MacMillan Company, 60 Fifth Avenue, New York

E. Forest Influences—Water, Erosion, and the like

NOTE—How do forest areas influence the country?

1. The Forest—A Handbook for Teachers, by D. Priscilla Edgerton, U. S. Department of Agriculture, Miscellaneous Circular 98
2. Trees as Good Citizens, by Charles Lathrop Pack, American Tree Association, 1214 Sixteenth St., N. W., Washington, D. C.
3. Forestry Lessons on Home Woodlands, U. S. Department of Agriculture, Department Bulletin 863
4. Forests and Water in the Light of Scientific Investigation, by Raphael Zon, Forest Service, U. S. Department of Agriculture, reprint.

F. Planting and Care of Trees

NOTE.—What is the best method of setting trees?

1. The Forest—A Handbook for Teachers, by D. Priscilla Edgerton, U. S. Department of Agriculture, Miscellaneous Circular 98
2. Tree Planting Book, The American Tree Association, 1214 Sixteenth St., N. W., Washington, D. C.
3. Arbor Day—Its Purpose and Observance, by Lewis C. Everard, U. S. Department of Agriculture, Farmers' Bulletin 1492
4. Planting and Care of Street Trees, U. S. Department of Agriculture, Farmers' Bulletin 1209
5. Trees for Roadside Planting, U. S. Department of Agriculture, Farmers' Bulletin 1482
6. Growing and Planting Coniferous Trees on the Farm, U. S. Department of Agriculture, Farmers' Bulletin 1453.

7. Growing and Planting Hardwood Seedlings on the Farm, U. S. Department of Agriculture, Farmers' Bulletin 1123.
8. The Shelterbelt as an Asset on the Iowa Farm, Iowa State College Extension Bulletin 108, Ames, Iowa.
9. Care of New Tree Plantings, Iowa State College, Extension Bulletin 127, Ames, Iowa.
10. A handbook of the Native Trees of Iowa, Iowa State College, Extension Bulletin, Ames, Iowa
11. Handbook of Nature Study for Teachers and Parents, by A. B. Comstock, Comstock Publishing Co., Ithaca, New York

G. Species for Planting

NOTE—What are the best trees to plant?

1. The Forest—A Handbook for Teachers, by D. Priscilla Edgerton, U. S. Department of Agriculture, Miscellaneous Circular 98
2. Babes of the Woods, Cornell Rural School Leaflet, Nov. 1926, Vol. 20, No. 2, New York State College of Agriculture, Ithaca, New York
3. Tree Planting Book, The American Tree Association, 1214 Sixteenth St., N. W., Washington, D. C.
4. Guide to Forestry, Book One, by Joseph S. Illick, Pennsylvania Department of Forests and Waters, Bulletin 26, Harrisburg, Pennsylvania
5. Trees For Town and City Streets, U. S. Department of Agriculture, Farmers' Bulletin 1208.
6. Trees for Roadside Planting, U. S. Department of Agriculture, Farmers' Bulletin 1482
7. Forestry Lessons on Home Woodlands, U. S. Department of Agriculture, Department Bulletin 863
8. The Shelterbelt as an Asset on the Iowa Farm, Iowa State College, Extension Bulletin 108, Ames, Iowa
9. See lists in this pamphlet

H. Plans for Planting

NOTE—Where shall we locate the trees and shrubs?

1. Planting and Care of Street Trees, U. S. Department of Agriculture, Farmers' Bulletin 1209
2. Planting the Roadside, U. S. Department of Agriculture, Farmers' Bulletin 1481
3. Forestry Lessons on Home Woodlands, U. S. Department of Agriculture, Department Bulletin 863
4. See sketches in this pamphlet

I. Tree Identification

NOTE—How can I know the different trees?

1. Babes of the Woods, Cornell Rural School Leaflet, Nov. 1926, Vol. 20, No. 2, New York State College of Agriculture, Ithaca, New York
2. Guide to Forestry, Book One, by Joseph S. Illick, Pennsylvania Department of Forests and Waters, Bulletin No. 26, Harrisburg, Pa.

3. Our Trees and How to Know Them, by Charles Sprague Sargent, Houghton-Mifflin Co., Boston and New York
4. Manual of Trees of Northern United States and Canada, by R. B. Hough, Lowville, New York
5. Tree Habits—How to Know the Hardwoods, by Joseph S. Illick, American Nature Association, Washington, D. C.
6. Handbook of Nature Study for Teachers and Parents, by A. B. Comstock, Comstock Publishing Co., Ithaca, New York
7. How to Know the Common Trees and Shrubs of Pennsylvania, by Geo. S. Perry, Pennsylvania Department of Forests and Waters, Harrisburg, Pa.
8. Handbook of the Native Trees of Iowa, Iowa State College Extension Bulletin, Ames, Iowa

J. Tree Seeds—Storing and Planting—Nursery Practice

1. The Forest—A Handbook for Teachers, by D. Priscilla Edgerton, U. S. Department of Agriculture, Miscellaneous Circular 98
2. Babes of the Woods, Cornell Rural Leaflet, Nov. 1926, Vol. 20, No. 2, New York State College of Agriculture, Ithaca, New York
3. Tree Planting Book, The American Tree Association, 1214 Sixteenth St., N. W., Washington, D. C.
4. Guide to Forestry—Book One, by Joseph S. Illick, Pennsylvania Department of Forests and Waters, Bulletin 26, Harrisburg, Pa.
5. Growing and Planting Coniferous Trees on the Farm, U. S. Department of Agriculture, Farmers' Bulletin 1453
6. Growing and Planting Hardwood Seedlings on the Farm, U. S. Department of Agriculture, Farmers' Bulletin 1123
7. Forestry Lessons on Home Woodlands, U. S. Department of Agriculture, Department Bulletin 863
8. Manual of Trees of North America, by Charles Sprague Sargent, Houghton-Mifflin Co., Boston and New York
9. Manual of Trees of Northern United States and Canada, by R. B. Hough, Lowville, New York
10. Handbook of Nature Study for Teachers and Parents, by A. B. Comstock, Comstock Publishing Co., Ithaca, New York
11. How to Know the Common Trees and Shrubs of Pennsylvania, by Geo. S. Perry, Pennsylvania Department of Forests and Waters, Harrisburg, Pa.

K. Lumber and Wood

NOTE—What are the uses of wood?

1. The Forest—A Handbook for Teachers, by D. Priscilla Edgerton, U. S. Department of Agriculture, Miscellaneous Circular 98
2. Forestry Lessons on Home Woodlands, U. S. Department of Agriculture, Department Bulletin 863
3. The Fuel Value of Wood, Iowa State College, Extension Bulletin 111, Ames, Iowa.
4. A Handbook of the Native Trees of Iowa, Iowa State College, Extension Bulletin, Ames, Iowa
5. Handbook of Nature Study for Teachers and Parents, by A. B. Comstock, Comstock Publishing Co., Ithaca, New York.

6. Wood and Lumber, by A. C. Newell, The Manual Arts Press, Peoria, Ill.

L. Woodlot Practices—Volumes of Logs—Ages of Trees

NOTE—How shall I thin out and care for a woodlot?

1. The Forest—A Handbook for Teachers, by D. Priscilla Edgerton, U. S. Department of Agriculture, Miscellaneous Circular 98
2. Care and Improvement of Farm Woods, U. S. Department of Agriculture, Farmers' Bulletin 1177
3. Forestry Lessons on Home Woodlands, U. S. Department of Agriculture, Department Bulletin 863
4. Improving the Woodlot and Farmstead, Iowa State College, Extension Bulletin 110, Ames, Iowa
5. Trees and How They Grow, by Nuttall
6. Handbook of Nature Study for Teachers and Parents, by A. B. Comstock, Comstock Publishing Co., Ithaca, New York

M. Tree Botany—Life Processes—Growth

NOTE—How does the tree grow?

1. The Forest—A Handbook for Teachers by D. Priscilla Edgerton, U. S. Department of Agriculture, Miscellaneous Circular 98
2. Trees and How They Grow, by Nuttall
3. Handbook of Nature Study for Teachers and Parents, by A. B. Comstock, Comstock Publishing Co., Ithaca, New York
4. Nature Study and Science for Intermediate Grades, by Gilbert H. Trafton, The MacMillan Company, Chicago, Illinois

N. Nut Trees and Nut Fruits

NOTE—What are the best nut trees for planting?
How are better varieties grown?

1. Nut Tree Propagation, U. S. Department of Agriculture, Farmers' Bulletin 1501
2. Black Walnut for Timber and Nuts, U. S. Department of Agriculture, Farmers' Bulletin 1392

O. Trees and Christmas

1. Travels of an English Christmas Tree, by Clara L. West, Published by Charles Lathrop Pack, American Tree Association, 1214 Sixteenth St., N. W., Washington, D. C.
2. Handbook of Nature Study for Teachers and Parents, by A. B. Comstock, Comstock Publishing Co., Ithaca, New York
3. American Forests and Forest Life (Magazine), American Forestry Association, Lennox Building, 1523 L. St., Washington, D. C.
4. American Nature Magazine, American Tree Association, 1214 Sixteenth St., N. W., Washington, D. C.

Magazines

NOTE—Every school should have in its library several nature magazines. The following are suggestive.

1. American Forests and Forest Life, American Forestry Association, Lennox Building, 1523 L. St., Washington, D. C.
2. American Nature Magazine, American Tree Association, 1214 Sixteenth St., N. W., Washington, D. C.

WHAT SHALL WE DO FOR ARBOR DAY?

These are only suggestions of things that boys and girls and older folks can help do for Arbor Day and in turn for their communities. Anyone of you can easily think of many other activities. The Landscape and Forestry Extension Services and the Botany Department of the Iowa State College, the Botany Department of Iowa University, Professor G. B. MacDonald, Forestry Department, Iowa State College, Ames, Iowa, Secretary of the Iowa Conservation Association, and other state departments can be called upon to advise and assist in the following program.

Tree Planting

1. Conduct a tree planting program in your school, or with your Scout troup, Campfire group or 4-H club.
2. Plant memorial trees for persons whom the whole community loves.
3. Plan and start planting proper trees on the street parking of your town.
4. Plant living Christmas trees, or start a permanent planting from which Christmas trees can be cut and sold from year to year; each year a new part can be planted and thus it may become a beautiful tradition at two seasons of the year and a community asset.
5. Start planting a town forest. Perhaps the city water works, the city park system, or some other such body has a piece of ground which might well be growing trees and which they will turn over for this purpose.

Programs, Pageants, Plays

1. Conduct a tree pageant or playlet. Several are given in the list of references.
2. Conduct a tree, forestry and out-door program in the school, or in any meetings of boys' and girls' groups. Get the children to ask their parents to see that such programs are held in group meetings for older folk. Material for these is to be found in this booklet.

Contests

1. Conduct an essay contest. What tree do you like best and why? What do trees and forests mean to me in Iowa? How can I help preserve the trees and forests? What is meant by "Good Manners in the Out-of-Doors?"
2. Conduct a poster contest.
3. Conduct a store-window exhibit contest between the various school grades, and the like.

Continued Programs and Studies

1. Start a program of tree and forestry studies for your school, or grade, or club group for the coming year.
2. Develop a plan for planting proper trees along streets and highways.
3. Start a program for establishment of bird and wild-life sanctuaries.

Other Activities

1. Start a collection of tree leaves, fruits, and woods.
2. Get all the advertisers in your local papers to mention Arbor Day and the forests in their "ads" for the week.
3. Get your merchants to mention Arbor Day in their window displays.

4. Start a tree census for your town to see what kind of trees you have, how many are long-lived, how many short-lived.
5. Start a "Hall of Fame" for interesting trees in your locality.

Some Further Suggestions for Work During the Year

(Taken from an outline prepared by Mrs. Henry Frankel of Des Moines, Iowa)

Trees

1. Trees in Autumn
   Hold a meeting at some home where beautiful trees can be seen and have a list of trees in town worth seeing. List trees best to plant for color and shade.
2. Trees in Winter
   Find material on such topics as
   Planting of school grounds with vines and native shrubbery
   Why every club woman should plant a tree
   List of beautiful native trees that flower and how to grow them (Crab, Juneberry or shad, locust, red bud, plum, haw and others)
   The value of trees in the wealth of the state and nation, with special emphasis on national conservation needs
   Planting of living Christmas trees

Parks and Playgrounds

1. State Parks
   Arrange an illustrated lecture on our state parks. (Get in touch with the State Board of Conservation or the Extension Landscape Service, Iowa State College). Include a talk on McGregor region and the American School of Wild Life Protection held there
   Conduct an Iowa travelogue, each one describing scenery, flowers, or trees especially beautiful
2. National Parks
   Arrange an illustrated lecture if possible
   Have individual reports

Native Shrubs and Flowers

1. Study their conservation and propagation
   Visit some native prairie in May
   Stress the native prairie flowers and the use of native material in landscaping

BOYS' OR GIRLS' TREE PLANTING PROGRAM

1. Call to order
   a. The bugle call and a very brief flag ceremony such as used by Scouts, Campfire Girls and other groups
2. Some prominent city official or other prominent citizen in charge
   a. About fifteen minutes of explanation of American Forest Week, Arbor Day, and conservation and the particular significance of this planting
3. A brief explanation by a tree man as to technique of the planting
4. Planting of first tree by the official
5. Carrying out the establishing of the rest of the plantation

a. The trees tagged with the names of the boys and girls planting them

6. Conclusion of Planting
   a. A charge by leader to boys and girls emphasizing the important thing just done.
   b. All take a pledge similar to the following

"I promise to care for this tree (or these trees) planted today, because I want my school (or home or other grounds) to be a better place and more profitable to me and to those who follow me. As I care for this tree (or these trees) I will remember that it is repaying a part of the debt I owe to trees, forests and the out-of-doors, for the making of the beautiful land in which I live."

A SUGGESTED FOREST PROGRAM FOR OLDER GROUPS

1. Opening
   a. Invocation or short tree verse
2. Talks
   a. The Forest as a Friend of Man
3. The Forests in Verse
   a. Select 3 to 5 good verses
4. Our Public Forests—National, State, Community
5. Song
6. Talks
   a. What this Community Can Do During the Coming Year
7. Closing

VERSES AND SONGS FOR PROGRAMS

TRAGEDY OF THE TREES

God planted trees where soils are thin.
And, be it said to man's chagrin,
The greed of man upsets God's plan
And stops the process he began
Of making soil on rock and sand.
The tragedy is waste stump land.

From timber land to real estate
Is but a stride. Fine ads create
A pictured paradise to those
Who dream of home and rambling rose,
Of poultry, garden, fruits and shade.
And dreaming thus the deed was made
That put them on a soil unfit
For anything but trees on it.

Abandoned farms, abandoned hope
Because such farmers could not cope
With drouths in such impoverished soil

Despite expenditure and toil.
The tragedy to such as these
Began with tragedy to trees.
Replanting is a better plan
Than selling stump land out to man.

—*Alson Secor*

AUTUMN LEAVES

"Come, little leaves," said the wind one day,
"Come over the meadows with me, and play;
Put on your dresses of red and gold;
Summer is gone, and the days grow cold."

Soon as the leaves heard the wind's loud call,
Down they came fluttering, one and all;
Over the brown fields they danced and flew,
Singing the soft little songs they knew.

"Cricket, good-bye, we've been friends so long;
Little brook, sing us your farewell song—
Say you're sorry to see us go;
Ah! you are sorry, right well we know."

Dancing and whirling the little leaves went;
Winter had called them and they were content—
Soon fast asleep in their earthly beds,
The snow laid a soft mantle over their heads.

—*George Cooper*

GRANDFATHER'S TREES

Grandfather says I do not know
How queer his farm looked long ago,
Before he planted the maples and oaks
And other trees that shade our folks.
For long ago, my grandfather tells,
The only song was the cattle bells
And the prairie was bare and the wind was dry,
And trees were scarce and the cost was high.
But I'm glad he planted them years ago—
The twenty trees that stand in a row—
And especially one where I go to swing,
The one where the robins and thrushes sing.
Grandfather says as he smiles at me,
That my father planted "my" favorite tree.
That's why I'm glad I can sometime say
I helped to plant one this Arbor Day.

—*Selected*

WHAT THE TREES TEACH

(Can be used as a dialogue for thirteen children)

I am taught by the Oak to be rugged and strong
In defense of the right, in defiance of wrong.
I have learned from the Maple, that beauty to win
The love of all hearts must have sweetness within.
The Beech, with its branches wide spreading and low,
Awakes in my heart hospitality's glow,
The Pine tells of constancy. In its sweet voice,
It whispers of hope 'til sad mortals rejoice.
The Birch, in its wrappings of silvery gray,
Shows that beauty needs not to make gorgeous display.
The Ash, having fibers tenacious and strong,
Teaches me firm resistance, to battle with wrong.
The Aspen tells me with its quivering leaves,
To be gentle to every sad creature that grieves.
The Elm teaches me to be pliant, yet true;
Though bow'd by rude winds, it still rises anew.
The Lombardy Poplars point upward in praise,
My voice to kind Heaven they teach me to raise.
I am taught generosity, boundless and free,
By showers of fruit from the dear Apple tree.
The Cherry tree, blushing with fruit crimson red,
Tells of God's free abundance that all may be fed.
In the beautiful Linden, so fair to the sight,
This truth I discern: It is inwardly white.
The firm-rooted Cedars, like sentries of old,
Show that virtues deep-rooted may also be gold.

—Helen O. Hoyt

WHAT DO WE PLANT?

What do we plant when we plant the tree?
We plant the ship, which will cross the sea.
We plant the mast to carry the sails;
We plant the planks to withstand the gales—
The keel, the keelson, the beam, the knee;
We plant the ship when we plant the tree.

What do we plant when we plant the tree?
We plant the houses for you and me.
We plant the rafters, the shingles, the floors,
We plant the studding, the laths, the doors,
The beams and siding; all parts that be;
We plant the house when we plant the tree.

What do we plant when we plant the tree?
A thousand things that we daily see;
We plant the spire that out-towers the crag,
We plant the staff for our country's flag,
We plant the shade, from the hot sun free;
We plant all these when we plant the tree.

—Henry Abbey

PROSPECTIN'

Up the mountain and through the burn
We climbed. An' 'mongst the brush an' fern,
An ole man drove his mattock home,
An' slapped a tree in the gapin' loam.
"Mornin', Father. What's the game?"
"Plantin' trees," the answer came.
"You don't 'spect to live to see
The standin' timber, do ye, say?"
He looked reflectin', down the hill:
"Wal, no. But, thunder, some 'un will."

—*J. R. Simmons*

THE BROTHERHOOD OF THE FOREST

I love the man who loves the wood,
Whate'er his creed, whate'er his blood.
I may not know his native land;
His creed I may not understand;
But, when we meet within the wood,
There each is silent—understood.

We worship then at selfsame shrine;
We see the same celestial shine
On lustrous leaf, on petaled flower;
We feel the selfsame grace and power;
Yea, walking on the selfsame sod,
We worship both the selfsame God.

I give who loves the wood my hands,
For there is one who understands;
Who loves the wood I give my heart,
For there responsive echoes start;
We meet in this sweet brotherhood—
We meet as Brothers of the Wood.

—*Douglas Malloch*

(From "THEIR HERITAGE—YESTERDAY—TODAY—TOMORROW,"
Published by The Boys' Technical High School, Milwaukee, Wisconsin)

"Dad! Your gun is in its case;
Your rod is on the wall;
Daddy! When you shooted ducks,
Did you shoot them all?
When you killed the deer an' fox,
An' cut the balsam tree,
Couldn't you a-left a few
Fer Billy an' fer me?

"Dad! Your factory on the creek
Makes a lot o' noise,
Churnin' up the water

Where you played with other boys.
Daddy! When you built it there,
Couldn't you, maybe,
Just a saved a swimmin' hole
Fer Billy an' fer me?

"Daddy! Wouldn't you suppose
That if you really tried,
You could save a little woods
An' fields, an' countryside?
Kind o' keep a savin' up—
You an' Uncle Lee—
Just a little out-of-doors
Fer Billy an' fer me?"

—*Anonymous*

THE SERVICE OF THE TREES

"Homes!" said the forest, shagging the range,
"Lintel and floor, roof-beam and door,
Homes we build and deserts we change
To cities that smoke and roar.
Steel and stone may come to their own
But first we shaped and prepared for these,
We raise the world, who are overthrown,
We rise and toil," said the trees.

"Ships!" said the forest, tossing its plumes,
"The weltering tide we master and ride;
Oceans and smoke with hurricane dooms,
All ports of the world beside.
Iron and steel may set their seal
On hull and keel, with clanging boasts,
We have won a world to unveil and reveal
All continents and coasts!"

"Beauty!" the forest in silver light,
Breathed dim and strong through the sunset change;
Star-crowned, striding along the height,
Lord of the lofty range.
"No stone takes lines of such vast designs—
No steel such immortal mysteries.
From the birch of the lake to the mountain pines,
We dwell with God!" said the trees.

—*W. R. Bennett*

WHO PLANTS A TREE

Give fools their gold, and knaves their power;
Let fortune's bubbles rise and fall;
Who sows a field, or trains a flower,
Or plants a tree, is more than all.

—*John Greenleaf Whittier*

OUT-OF-DOORS

In the urgent solitudes
Lies the spur to larger moods;
In the friendship of the trees
Dwell all sweet serenities.

—*Ethelyn Wetherald*

SHADE

The kindliest thing God ever made,
His hand of very healing laid
Upon a fevered world, is shade.

His glorious company of trees
Throw out their mantles, and on these
The dust-stained wanderer finds ease.

Green temples, closed against the beat
Of noontime's blinding glare and heat,
Open to any pilgrim's feet.

The white road blisters in the sun;
Now, half the weary journey done,
Enter and rest, O weary One!

And feel the dew of dawn still wet
Beneath thy feet, and so forget
The burning highway's ache and fret.

This is God's hospitality,
And whoso rests beneath a tree
Hath cause to thank Him gratefully.

—*Theodosia Garrison*

A FOREST HYMN

The groves were God's first temples. E'er man learned
To hew the shaft, and lay the architrave
And spread the rood above them—e'er he framed
The lofty vault, to gather and roll back
The sound of anthems, in the darkling wood,
Amid the cool and silence, he knelt down
And offered to the Mightiest solemn thanks
and Supplication.

—*William Cullen Bryant*

YANKEE TREES IN FRANCE

No futile wreaths that fade and die,
Whose life is but a day,
Can truly honor those who lie
So many leagues away;
Nor fainting blossoms represent

The hope, the strength, the urge
Of Youth incarnate—why, it sent
Them, laughing, to the verge.

For those who perished overseas,
Our glorious host that lies
In France, let hosts of living trees
Gloriously arise;
Rise where charred limbs of older trees,
Flung mute against the sky,
To countless wanton cruelties
In silence testify.

And at some distant future day
When we, who mourn them now,
Because they died—the selfsame way
Have followed them, oh how
Shall we deserve so fine a thing
For our memorial,
As trees lit with the green of spring,
Or scarlet fires at fall?

—*San Francisco Chronicle*

TREES

I think that I shall never see
A poem lovely as a tree;

A tree whose hungry mouth is prest
Against the earth's sweet flowing breast;

A tree that looks at God all day
And lifts her leafy arms to pray;

A tree that may in summer wear
A nest of robins in her hair;

Upon whose bosom snow has lain;
Who intimately lives with rain.

Poems are made by fools like me,
But only God can make a tree.

—*Joyce Kilmer*

SALUTE TO THE TREES

Many a tree is found in the wood
And every tree for its use is good;
Some for the strength of the gnarled root,
Some for the sweetness of flower or fruit;
Some for shelter against the storm,
And some to keep the hearth-stone warm.

Some for the roof, and some for the beam
And some for a boat to breast the stream;
In the wealth of the wood since the world began,
The trees have offered their gift to man.

But the glory of trees is more than their gifts:
'Tis a beautiful wonder of life that lifts
From a wrinkled seed in an earth-bound clod,
A column, an arch in the temple of God,
A pillar of power, a dome of delight,
A shrine of song, and a joy of sight!
Their roots are the nurses of rivers in birth
Their leaves are alive with the breath of the earth;
They shelter the dwellings of man; and they bend
O'er his grave with the look of a loving friend.

I have camped in the whispering forest of pines,
I have slept in the shadow of olives and vines;
In the knees of an oak, at the foot of a palm
I have found good rest and slumber's balm.
And now, when the morning gilds the boughs,
Of the vaulted elm at the door of my house,
I open the window and make salute:
"God bless thy branches and feed thy root!
Thou hast lived before, live after me,
Thou ancient, friendly, faithful tree."

—*Henry Van Dyke*

PLANTING A TREE

What does he plant who plants a tree?
A scion full of potency;
He plants his faith, a prophecy
Of bloom and fruitfulness to be;
He plants a shade where robins sing,
Where orioles their nestlings swing:
A Burning Bush—a miracle!
Who plants a tree, he doeth well!
What does he plant who plants a tree?
He makes a strong mast for the sea;
He makes the earth productive, fair;
He helps the vines climb high in the air,
And from their censers shed perfume
To sweeten Night and bless high Noon.
Against the vandals who despoil
He sets his protest in the soil.
What does he plant who plants a tree?
An emblem of the Men to be;
Who lightly touch terrestrial clay,
But far above the earth, away

From sordid things and base,
Incarnate ideals for their race,—
Who plants a tree he doeth well,
Performs with God, a miracle.

American Forestry Association

THE TREE PLANTER

He who plants a tree
He plants love;
Tents of coolness spreading out above.
Heaven and earth help him who plants a tree,
And his work its own reward shall be.

—Lucy Larcom

ARBOR DAY SONG

(To be sung to tune of "My Maryland")

Great forests grew in days gone by
On forest land, on forest land,
Where now bare sands and black stumps lie
On forest land, on forest land;
For saw and ax in careless hand
Have swept the trees from forest land,
And fire has flung his glowing brand,
On forest land, on forest land.

The acres burned, the acres bare,
On forest land, on forest land,
The acres wrecked by lack of care,
On forest land, on forest land,
Now spread their millions, barren dead,
Where no man works, no game is fed;
And muddy streams their banks o'er spread,
On forest land, on forest land.

Drive out the fire that seeks to spoil
Our forest land, our forest land,
And save the trees and save the soil,
On forest land, on forest land.
We'll cut our logs with careful hand,
Leave seed to grow a later stand,
And plant with trees the idle land—
Make forest land a harvest land.

—L. C. Everard

A HYMN FOR ARBOR DAY

(To be sung to tune of "America")

God save these trees we plant;
And to all nature grant
Sunshine and rain.
Let not their branches fade,
Save them from axe and spade,

Save them for joy and shade,
Guarding the plain.

Lord of the earth and seas,
Prosper our planted trees,
Save with thy might,
Save us from indolence,
Waste and improvidence,
And in Thy excellence,
Lead us aright.

When they are ripe to fall,
Neighbored by trees as tall,
Shape them for good.
Shape them to bench and stool,
Shape them for home and school,
Shape them to square and rule,
God bless the wood.

—*Henry Hanby Hay*

SOME FOREST FACTS

The forests are an important factor in furnishing raw material upon which the wealth of the nation is built; in controlling run-off water, erosion, and land utilization; in preserving many forms of bird and animal life; and in serving as a tremendous playground for millions of work-weary people.

The United States has left an area of some 470 million acres of forest land. Of this 157 million acres are in National Forests, 11 million in State and Community Forests and 370 million are in private forests. One hundred forty million acres contain merchantable timber, 250 million acres carry a poor stand of trees and 80 million acres will never come back naturally to trees. Our rate of depletion of forest stands, so far, outstrips replacement by about four times. It is a hopeful sign, however, that private and public interests are rapidly joining hands, and there is progress annually toward bringing the reduction and replacement of forest growing stock into balance.

IOWA AND FORESTRY

So firmly founded on wood products is our whole life that every person should be deeply concerned with what happens to our forests and out-of-doors and should do his part in observance of Arbor Day and American Forestry Week. Iowa is a big wood consumer. The farmer of the United States consumes over 45 per cent of the entire wood output of the country every year. Iowa's annual wood bill is at least 40 to 50 million dollars. Iowa has 2 to 2½ million acres of land best suited to growing wood crops. Wood is disappearing and increasing in cost steadily.

If we decrease our per capita consumption of timber beyond certain limits, what must happen to our present comforts and conveniences?

Forests support 1/10 of the American people. Fifteen million or more people use the National Forests alone for recreation each year. Iowa has

39 state parks with a total area of over 7,000 acres. The total number of visitors to six of the larger of these and to the lake areas of Iowa was easily 3,750,000 in one year. They spent about 3 hours each on the areas. At 25c per hour, the price of an average "movie," this recreation is worth over $2,800,000 every year in Iowa.

When the forests go, the streams, fish, birds and game animals go. Observers estimate that the birds of Massachusetts consume every day 21,000 bushels of chiefly destructive insects. A single Bob-White in Iowa consumes in one day 122,205 weed seeds along with 33 different kinds of destructive insects. The aquatic life in Iowa, such as fish, etc., yields Iowa over $300,000 a year. The fish value of our waters has been calculated to be $7.00 per acre per year. Four thousand muskrat skins were taken from Blue Lake in one year and 5,000 from Skunk Grove Lake, which represnts a value, from 1,100 acres of water and marsh area, of around $10,000.

GOOD OUT-DOOR MANNERS IMPERATIVE

With all these facts facing us, what is our responsibility in every use of the out-of-doors? It is ours while we use it; it is another's when we leave it or when he shares it with us.

Here are some rules every user of the out-of-doors must follow if he respects the other fellow's rights. Can you suggest others?

1. *Matches*—Be sure your match is out. Break it in two before you throw it away.
2. *Making Camp*—Before building a fire scrape away all inflammable material over a five foot space. Dig a hole in the center and build a fire in it. Keep your fire small. Never build it against trees, logs or near brush.
3. *Breaking Camp*—Never leave until all fire is out; DEAD OUT.
4. *Brush Burning*—Never burn in windy weather or if there is the slightest danger that the fire will get away.
6. *How to Put Out Camp Fire*—Stir coals while soaking with water. Turn small sticks over and drench both sides. Wet ground around fire. If you can't get water, stir in dirt and tread down until packed tight over and around fire. Be sure the last spark is dead.

The Out-Door Code (From the Wild Flower Preservation Society, Inc., Washington, D. C.)

"Help save the trees and wild flowers. Protect the birds and game. Keep the highways beautiful. Pick up the picnic rubbish. Put out your fire; then bury it."

OUR WILD FLOWERS

(From the Wild Flower Committee of the Iowa Conservation Association)

"Enjoy, do not destroy the wild flowers"

"Educate the children how to pick and our flowers will return"

1. Pick the wild flowers as carefully as you would those you have grown in your garden.
2. Never destroy the leaves and roots.
3. Leave some flowers to form seeds.
4. Never patronize wild flower vendors.

5. Learn which flowers are rare, and do not pick any of them.

6. Pick only a few flowers and preserve them carefully.

7. Never pick flowers by the roadside, or the beaten path where others follow your footsteps to find the same joy of Nature that just thrilled you.

8. Begin now to teach every child in the public schools of your community to love and preserve the flowers, and the floral life shall return to our doors in ever-increasing splendor and beauty.

9. Each state has a state flower which in most cases is protected. The following is a partial list.

California—Wild Poppy
Colorado—Blue Columbine
Connecticut—Mountain Laurel
District of Columbia—American Beauty Rose
New York—Rose
South Carolina—Yellow Jasmine
West Virginia—Rhododendron
Georgia—Cherokee Rose
Kansas—Sunflower
Minnesota—Indian Moccasin
North Dakota—Wild Rose
Oklahoma—Mistletoe
Florida—Orange Blossom
Indiana—Tulip Tree
Iowa—Wild Rose
Nebraska—Goldenrod
Texas—Blue Bonnet
Alabama—Goldenrod
Idaho—Syringa
Maryland—Black-eyed Susan
Mississippi—Magnolia
North Carolina—Mountain Laurel and Daisy
Rhode Island—Violet
Maine—Pine Rose
Missouri—Hawthorn
Montana—Bitter-root
New Hampshire—Lilac
Ohio—Scarlet Carnation
Arkansas—Apple Blossom
Tennesee—Goldenrod

G. F. W. C. Forestry Chairman.

FLOWERS THAT SHOULD NOT BE PICKED AT ALL

Bell-wort, birdfoot violet, blue bells, columbine, dogwood, larkspur, wild phlox, Solomon's seal, trillium, gentian, ginseng, Jack-in-the-pulpit, maiden hair fern, lady slipper, lily, shooting star, star grass, wild pink.

FLOWERS THAT SHOULD BE PICKED SPARINGLY AND ROOTS NOT DISTURBED

Anemone, blood root, marsh marigold, pasque flower, water lily, wild rose, black haw, bluets, dog tooth violets (adder's tongue), May apple, entire leaf violets, most ferns, wild geranium (crane's bill) and hepatica.

FLOWERS THAT MAY BE PICKED FREELY

Asters, Black-eyed Susans (except where protected), boneset, bouncing Bet, butter and eggs, goldenrod, clover, dandelion, milk weed, morning glory, mullein, rosin weed, sunflower, vervain, vetch, carrot (wild), yarrow.

NOTE—The Wild Flower Preservation Society, Inc., with national headquarters at 3740 Oliver St., Washington, D. C., can furnish much splendid material, including lists of native flowers, colored illustrations, and the like.

THE PLANTING AND CARE OF TREES AND SHRUBS

PLANTING SPECIMEN TREES

John Burroughs, a king of nature lovers, said, "When you bait your hook with your heart the fish always bite, and I will now say that when you plant a tree with love it always lives; you do it with such care and thoroughness."

DIRECTIONS

1. Dig a hole large enough and deep enough to take roots in their natural position.

2. Be sure to have good drainage in hole, especially if in heavy subsoil.
3. A mound of earth in the bottom of hole sometimes helps in holding roots spread.
4. Set tree not over two inches deeper than it stood in nursery, and preserve all the fine fibrous roots. Cut broken roots off smooth.
5. Use good loamy top-soil to fill in around all the new roots.
6. Pack it in around roots with fingers and then tramp in firmly.
7. Fill hole to within 6 inches of surface, then pour in two or three buckets of water. When water is *entirely soaked away* fill in hole with loose dirt *but do not tramp after water is in hole.*
8. Leave area of 6 square feet around tree for cultivating or give it a mulch of *old* straw.
9. Put a heavy stake, 10 feet high, with 2 feet in the ground, side of the tree and brace tree to it with rubber covered wire or loose soft rope.
10. Prune out about 1/3 of top to compensate for reduced roots.
    a. Prune off all broken or bruised branches.
    b. Plan on leaving strong branches for base of permanent crown about 10 feet from ground for parking trees; can be lowered for yard trees.
    c. Prune to eliminate bad crotches.
    d. Keep well-developed, natural-form head with strong leader and branches set at wide angles.
    e. Prune out the head by thinning, not by stubbing back the ends of all branches.
11. Never expose the roots to air and wind; keep them covered and moist; carry them in moist burlap or in containers of water or wet packing. This is especially important with evergreens. Take out one tree at a time.

STARTING FOREST PLANTINGS

Size and grade of trees to use in planting—Smaller grades of planting stock are used for forest planting than for shelterbelts or ornamental planting.

Plowing the entire area—(For small areas where there is not much danger from erosion). Advantages: Ease of planting and cultivation afterward, trees having best chance to become established. Plowing should be as deep as possible.

Plowing out furrows where trees are to stand—(For larger areas, especially if subject to some erosion). Gives the trees a better advantage in becoming established than if planted in sod or unbroken soil. A furrow is thrown out and the trees are planted in the bottom of this, or sometimes, if tap rooted, trees are set against land side of furrow and back furrow is made, throwing dirt in against the trees with the plow. The trees are then tramped in firmly. If on a hillside, furrows should follow the contour of the ground to avoid gullying.

Planting without any previous preparation of the soil—There are conditions where it is advisable to plant on the area just as it lies. For example, on a site surrounding a water supply system there is danger

of silting up the reservoir, or there are places where even furrows would start extreme erosion. The trees are set in holes prepared for them at the time of planting. One crew is kept in advance to prepare the holes and a second crew follows and does the actual planting. *When trees are planted in this way it is very important to watch them closely during the first few growing seasons to keep enough room about them so they can "get their breath."*

CARE OF TREES AFTER PLANTING

For forest plantings—Keep live stock out always. It is better economy to have a small area for intensive woodlot than a large area for both woodlot and pasture. Prevent sod, weeds and underbrush from choking out the young trees until they get large enough to shade the ground and keep above the undergrowth. Cultivation, even if only a chopping up of the ground around the trees, pays well in added growth of the trees. Watch the young and the old woodlot and cut out any diseased or insect-infested trees and burn or destroy them at once to keep the damage from spreading to the whole woodlot.

For individual trees—Delegate some specific person or group to this task. PLANTING THE TREE IS ONLY THE START, NOT THE FINISH OF THE JOB. Making a group such as a boy scout troop, a campfire girls group, a 4-H club, etc. responsible for a definite planting, is an effective plan. If the planting is done with exercises, have the boys and girls sign a pledge card to the effect that in gratitude to the debt they owe trees they will take care of the specific group assigned. The soil about the tree after planting should be kept loose and cultivated for three to five feet for several years. Sod should never be allowed to crowd in until the tree is well established. Where cultivation seems improbable a good mulch of old straw, leaves, or sand will partially take its pace, and this mulch left on the first few winters will help against winter injury.

Well rotted manure or commercial fertilizer may be incorporated in the surface soil now and then, but do not overdo this. Tree guards should be placed around any young tree in a parking, along a roadside or anywhere where the trunk is apt to be damaged. With young trees having smooth bark, partial shading of the stem by rather closely built guards will help prevent sun-scalding.

The proper watering of young trees is very important. When the ground becomes dry enough to need watering, give it a thorough soaking, to reach way down to the roots, then let the tree alone for awhile to get its breath. This is much better than to give a bucket of water every day. Evergreens will require more watering the first season than hardwoods.

Some pruning and training of the tree will be necessary as it grows. A little should be done each year rather than much at long intervals. No set rules con be given except possibly that all cuts should be smooth and close to the main stem, all cuts should be painted over with a good lead paint, and the natural shape of the tree always should be preserved. Pruning after planting is done only to correct irregular shapes, to re-

move dead or injured branches, to carry the crown to proper height in street tree plantings.

TREES FOR WINDBREAK AND FOREST PLANTING

Species for Various Types of Planting	Rate of Growth	Drought Resistance	Soil Adaptation (See Key below)
Evergreens for Windbreaks			
White Pine	Medium to fast	Medium	I, II
Red Pine	Medium to fast	Medium	I, II
Scotch Pine	Fast	Good	I, III
Norway Spruce	Medium to fast	Medium	I, II
Black Hills (white) Spruce	Slow	Medium	I, II, III
Austrian Pine	Medium	Good	I, II, III
Western Yellow (bull) Pine	Medium to slow	Good	I, II, III
Jack Pine	Fast	Good	I, III
European Larch	Medium to fast	Medium	I, II
White Cedar	Slow	Medium to poor	I, II
Red Cedar	Medium to slow	Good	I, II, III
Trees for Fence Posts			
Red Cedar	(See above)		
European Larch	(See above)		
White Cedar	(See above)		
Osage Orange	Medium	Good	I, II, III
Hardy Catalpa	Medium to fast	Medium to poor	I,
Black Locust	Fast	Good	I, II, III
Mulberry (Red)	Medium to fast	Good	I, II, III
Oak	Medium to slow	Medium	I, II
Cottonwood (Poplar) (only with treatment)	Medium to fast	Medium to good	I, II, III
Trees for Timber			
Cottonwood (Poplar)	Fast		
Black Walnut	Medium	Medium to good	I, II
Maple	Medium to slow	Medium	I, II
Oak	Slow	Medium	I, II
Ash	Medium	Medium	I, II
Hickory	Slow	Medium	I, II
White Pine	(See above)	Medium to good	I, II
Red Pine	(See above)		
Spruce	(See above)		
Larch	(See above)		

Trees for Ties—Red Oak, White Oak, European Larch, Hard Maple
Trees for Poles—Red Oak, White Oak, European Larch, White Cedar
Trees for Pulpwood—Norway Spruce, Basswood, Cottonwood (Poplar)

KEY

I. Moist loam to clay loam
II. Fresh sand to sandy or gravelly loam
III. Dry sandy loam

PLANTS FOR GENERAL LANDSCAPE WORK

Compiled by John R. Fitzsimmons, Landscape Architect
Iowa State College, Ames, Iowa

Evergreens

1. WHITE PINE (Pinus strobus) 100′ symmetrical when young—picturesque when old
2. BLACK HILL SPRUCE (Picea canadensis) compact—dark green
3. RED CEDAR (Juniperus virginiana) 100′ columnar to conical
4. ARBORVITAE (Thuja occidentalis) 60′ narrow conical
5. PFITZER JUNIPER (Juniperus pfitzeriana) 3′ low, spreading
6. SCOTCH PINE (Pinus sylvestris) 70′ spreading, picturesque—red bark

Deciduous Trees

7. RED OAK (Quercus rubra) 100′—125′ clean, rapid growing—brilliant colors in autumn
8. PIN OAK (Quercus Palustris) 60′ pyramidal—autumn color
9. HARD MAPLE (Acer saccharum) 100′ Upright, dense—scarlet and orange in autumn
10. AMERICAN ELM (Ulmus americana) 100′ Vase form, arching, pendulus, branching
11. BLACK WALNUT (Juglans nigra) 100′ Nuts, Shade
12. ASIATIC ELM (Ulmus pumila) 80′ Fast growing, smaller leaves, arching branches
13. AMERICAN LINDEN (Tilia americana) 100′ Compact, oval
14. HACKBERRY (Celtis occidentalis) 60′ Luxuriant foliage, massive, bark
15. HAWTHORN (Cratægus mollis) 40′ Decorative—bright green foliage—scarlet fruit

Deciduous Shrubs

16. NANNYBERRY (Viburnum lentage) 15′ Bluish—black fruit
17. RED OSIER DOGWOOD (Cornus stolonifera) 8′ Dark reddish twigs —white fruit
18. HAZELNUT (Corylus americana) 3′—6′ Under Cover
19. PRAIRIE CRAB (Malus ioensis) 20′ Pink, roselike flowers
20. SHADBLOW (Amelancher canadensis) 20′. Early spring flowers—woods edging
21. WAHOO (Euonymus atropurpureus) 15′ Greenish twigs, orange red fruits
22. ARROWWOOD (Viburnum dentatum) 15′ Bushy—bluish-black fruit
23 BUSH HONEYSUCKLE (Lonicera tatarica) 12′ White and pink flowers—bushy
24. CRANBERRYBUSH (Viburnum opulus) 12′ bright scarlet fruit
25. HAWTHORN (Cratægus punctata) 25′ Horizontal spreading, dull red fruits
26. LILAC (Syringa vulgaris) 10′ Broad purple panicles of blossoms
27. RUSSIAN PEA-TREE (Caragana frutex) 8′ Yellow pea-like flowers
28. AMERICAN ELDER (Sambucus canadensis) 12′ white flowers
29. CUTLEAF SUMAC (Rhus glabra laciniata) 10′ Cut leaves—fall color
30. AMUR PRIVET (Ligustrum amurense) Dark green—black berries, hedge
31. VANHOUTTEI SPIREA (Spirea van houttei) 6′ White flowers—mass
32. GRAY DOGWOOD (Cornus paniculata) 8′ White flowers—white fruit on red stem—bird cover
33. JAPANESE BARBERRY (Berberis thunbergi) 4′ Compact, spines, red berries
34. MOUNTAIN CURRANT (Ribes alpinum) 4′ Upright, spreading, greenish yellow flowers
35. PRAIRIE ROSE (Rosa setigera) 6′ Deep pink, single flowers
36. RUGOSA ROSE (Rosa rugosa) 6′ Upright—white or red blossoms

37. BUTTONBUSH (Cephalanthus occidentalis) 6′ Vigorous, coarse, white, ball blossoms—moist
38. NEW JERSEY TEA (Ceanothus americanus) 3′ Upright, bright green foliage, white flowers
39. SNOWBERRY (Symphoricarpos racemosus) 3′ Snow white fruits—autumn effect
40. FRAGRANT SUMAC (Rhus canadensis) 3′ Compact—dense, autumn colors

VINES

41. BITTERSWEET (Celastrus scandens) Rapid growing—shrubby, yellow-crimson fruits
42. ENGELMANN IVY (Ampelopsis engelmanni) Clings to stone, brick etc. fall colors
43. VIRGINS BOWER CLEMATIS (Clematis virginiana)
44. FOX GRAPE (Vitis labrusca) Strong Grower—sweet scented flowers
45. TRUMPET CREEPER (Bignonia radicans) Orange red trumpet shaped flowers—birds, flowers

FLOWERS

46. COREOPSIS (Coreopsis lanceolata) Easy to grow—Golden yellow flowers, over long period
47. GERMAN IRIS (Iris germanica) Mixed colors
48. PEONY (Pæonia albiflora) Mixed colors
49. MOSS PINK (Phlox subulata) Low—pink blossoms
50. LILY-OF-THE-VALLEY (Convallaria majalis) Spreading—white blossoms

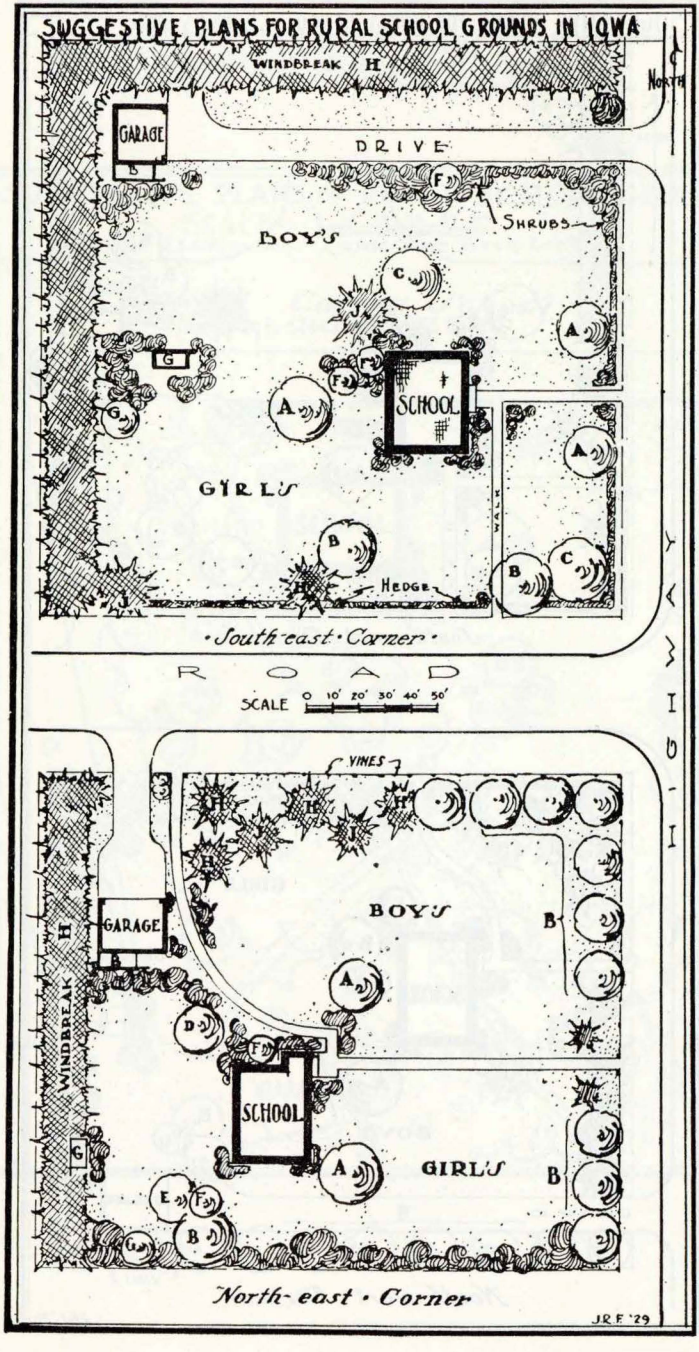
RURAL SCHOOL GROUND PLANTING

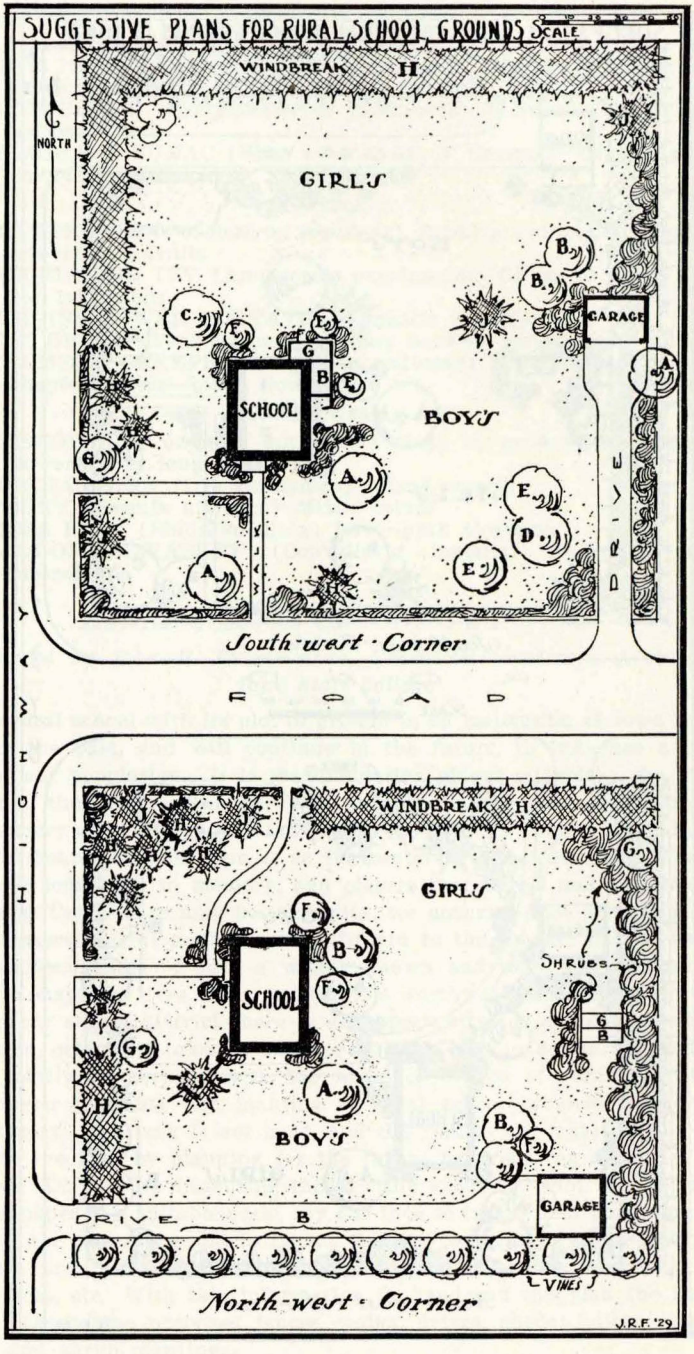
Prepared by John R. Fitzsimmons, Extension Landscape Architect
Iowa State College

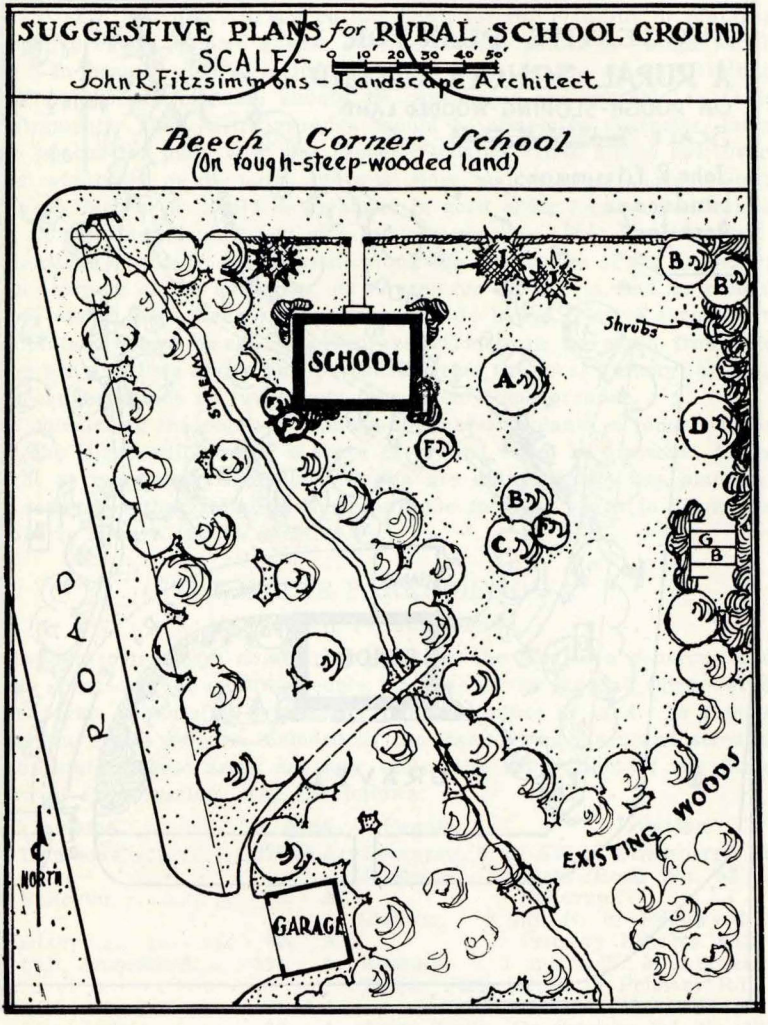
The rural school with its plot of ground is an institution of Iowa which has, in the past, and will continue in the future, to influence a large part of our population. It is the foundation of our citizenry; the foster parent of thousands of our children, and the spot of ground endeared in our memory and hallowed by the joyous days of our youth. Often in our younger years we look upon it as the center of our daily life. In after years we look back in memory, and picture that school and its grounds. Whatever the picture may be in reality, we enshrine that area and hold it as a sacred bit of mother earth. To add to the beauty, attractiveness, and wholesomeness of such a widely known and important factor that tends to shape the lives of our people; is a worthy task for any generation.

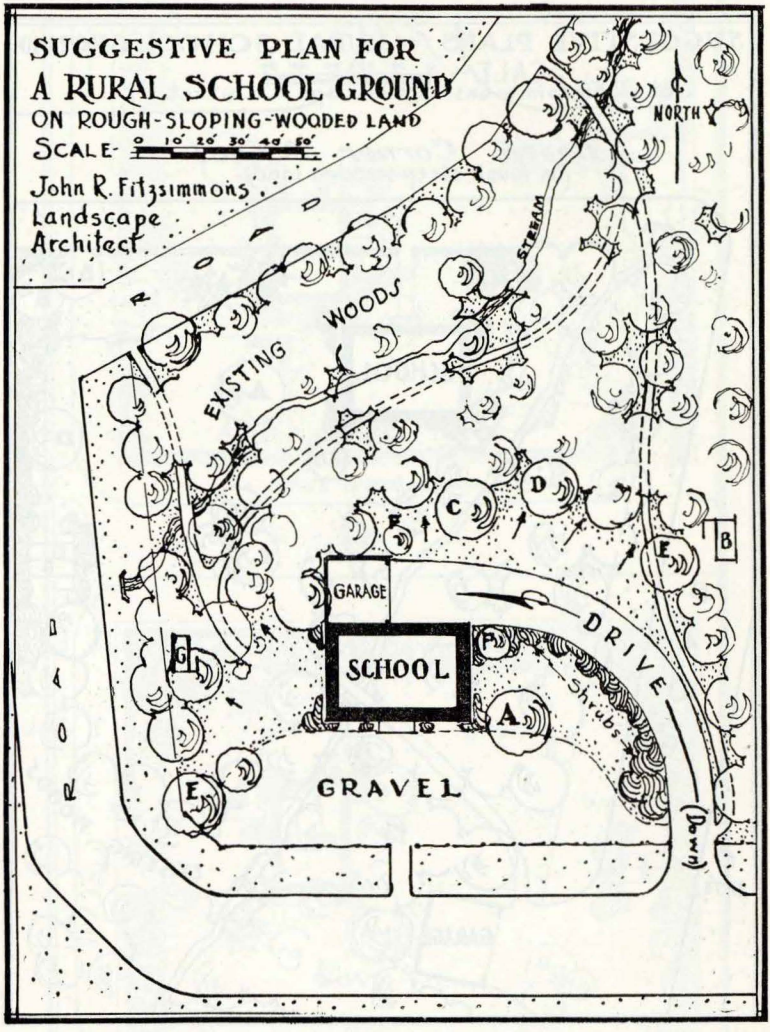
In every school district there is an opportunity for a great service of this kind, which, if taken advantage of, will help to create an environment totally in keeping with the noble objectives of rural education. The proper planning and planting of rural school grounds is such an opportunity. The task is not hard, and the results are manifold.

Begin the task by planning for the future by preparing a plan of the grounds. Do this by measuring the existing grounds. Plot this information on paper to a suitable scale, say one inch to twenty feet (meaning one inch on the paper is equal to twenty feet on the ground.) On this plan measure and locate all permanent existing objects: school, walks, large trees, etc. With this information in hand you can plan the future work. Locate the proposed fences, walks, drives, sheds, toilets, hedges, trees, and shrub plantings.


SUGGESTIVE PLANS FOR RURAL SCHOOL GROUNDS IN IOWA
WINDBREAK H
NORTH
GARAGE
B
DRIVE
F
SHRUBS
BOY'S
C
A
G
F
SCHOOL
GIRL'S
B
HEDGE
South-east Corner
ROAD
SCALE 0 10' 20' 30' 40' 50'
VINES
H
I
BOY'S
GARAGE
WINDBREAK H
D
SCHOOL
GIRL'S
E
North-east Corner
JRF '29


SUGGESTIVE PLANS FOR RURAL SCHOOL GROUNDS
SCALE
WINDBREAK H
NORTH
GIRL'S
SCHOOL
BOYS
GARAGE
DRIVE
South-west Corner
HIGHWAY
ROAD
WINDBREAK H
GIRL'S
SCHOOL
SHRUBS
BOYS
GARAGE
DRIVE
VINES
North-west Corner
J.R.F. '29


SUGGESTIVE PLANS for RURAL SCHOOL GROUND
SCALE- 0 10' 20' 30' 40' 50'
John R. Fitzsimmons - Landscape Architect
Beech Corner School
(On rough-steep-wooded land)
SCHOOL
A
B
C
D
F
G
Shrubs
STEAMS
ROAD
NORTH
GARAGE
EXISTING WOODS


SUGGESTIVE PLAN FOR
A RURAL SCHOOL GROUND
ON ROUGH-SLOPING-WOODED LAND
SCALE- 0 10' 20' 30' 40' 50'
John R. Fitzsimmons
Landscape
Architect
NORTH
STREAM
EXISTING WOODS
ROAD
GARAGE
SCHOOL
DRIVE
Shrubs
GRAVEL
(Down)
ROAD
A
B
C
D
E
F
G

The accompanying "Suggestive Diagram for Rural School Ground Planting" should be a source of help with this work. Remember that the planting of each particular area should be in accordance with the existing conditions. Do not take the diagrams literally, but study them for suggestive ideas. The "scale of feet" as indicated on these diagrams will offer a means of measuring the relative size of each plan and its contents.

Hard and fast rules can not be laid down for the planning or planting of such grounds, but we should observe certain points of design which result in beauty. The practical elements, such as the school building, sheds, walks, drives, etc., should be *convenient* and suitable to their requirements. The entire grounds should be *simple* in character, large open spaces for play; few, but properly located, trees, single row evergreen windbreak on the north and west sides, and vines on fences and outhouses. Each area should be arranged in good *order* for its specific use, and all planting should be in mass, not hit or miss about the grounds.

Plantings of shrubs can be made along the boundaries of the property; at the corners of the buildings; as screens for the toilets, and as ground covers under large trees or on steep roadside banks. Native shrubs can be obtained from nearby woods or selections can be made from the accompanying lists above and purchased from the local nursery, or children can bring one or two plants from their home grounds.

In calculating the required number of necessary plants, a rough rule is that the shrub will occupy a space of ground equal in diameter, to its height at maturity. Immediate results are obtained by close planting, but remember that thinning must be done in later years to allow the shrubs to mature and be effective.

THE STATE PARKS OF IOWA

John R. Fitzsimmons

Through many years of untiring effort on the part of a generous and public spirited group of Iowa people, we have at the present, thirty-seven state parks, comprising over seven thousand acres of land. To this is added the entire acreage included by the meandering lakes and streams of the state. These areas are now under the supervision of the State Board of Conservation. The list follows:

No.	Name	Area	County	Location
1.	Backbone	1,279.58 A.	Delaware, Jackson,	3 mi SW of Strawberry Pt. Primary Road No. 62 at
2.	Bellevue	66. A.		Bellevue
3.	Bixby	69. A.	Clayton,	2 mi. N. of Edgewood, Primary Rd. No. 112
4.	Call, Ambrose A.	134. A.	Kossuth,	1 mi, S.W. of Algona
5	Clark, Theo. F.	24.38 A.	Tama,	2½ mi. E. of Primary Rd. No. 59, N.E. of Traer
6.	Clear Lake	20. A.	Cerro Gordo,	On Primary Rd. No. 106 S. of Clear Lake
7.	Devil's Backbone	224.87 A.	Madison,	3 mi. S. of Primary Rd. No. 24, S.W. of Winterset
8.	Dolliver Memorial	544.38 A.	Webster,	At N. end of Primary Road No. 121
9.	Eagle Lake	27. A.	Hancock,	1½ mi. N. of U. S. Highway No. 18

No.	Name	Area	County	Location
10.	Elbert Tract.....	261.37 A.	Polk,	S.W. of Des Moines
11.	Eldora Pine Creek.	236.42 A.	Hardin,	At N. end of Primary Rd. No. 118
12.	Farmington	102.4 A.	Van Buren,	On Primary Ro. No. 114, W. of Farmington
13.	Flint Hills	101. A.	Des Moines,	1 mi. N. of Burlington
14.	Ft. Atkinson	5. A.	Winneshiek,	4 mi. S.W. of Calmar
15.	Ft. Defiance	53. A.	Emmet,	W. edge of Estherville
16.	Gitchie Manito.....	47.5 A.	Lyon,	N.W. cor. County, 6 mi. W. of Primary Rd. No. 9
17.	Hamburg Tract ...	200. A.	Fremont,	S.W. of Sidney 2½ mi. W. of Primary Rd. No. 4
18.	King	130.85 A.	Guthrie,	7 mi. N.E. of Guthrie Center
19.	Lacey Keosauqua...	1,222.1 A.	Van Buren,	1 mi. S.W. of Keosauqua
20.	Ledges	584.28 A.	Boone,	3 mi. W. of Primary Rd. No. 60 and 4 mi. S. of Boone
21.	Lepley	9. A.	Hardin,	7 mi. S. of Eldora
22.	Lewis & Clark	675. A.	Monona,	3 mi. W. of Onawa
23.	Lost Island	27.63 A.	Palo Alto,	3 mi. N. of Ruthven
24.	Maquoketa Caves..	16.91 A.	Jackson,	7 mi. N.W. of Maquoketa
25.	Oak Grove	101.79 A.	Sioux,	4 mi. N. of Hawarden
26.	Oakland Mills	110.79 A.	Henry,	4 mi. S.W. of Mt. Pleasant
27.	Okamanpadu	10. A.	Emmet,	2 mi. N.E. of Dolliver
28.	Palisades-Keplar ..	139.5 A.	Linn,	11 mi. S.W. of Cedar Rapids
29.	Pilot Knob	288. A.	Hancock,	4 mi. E. Forest City, 1 mi. S. Primary Rd. No. 9
30.	Rice Lake	50.57 A.	Winnebago,	3 mi. S.E. of Lake Mills
31.	Silver Lake	15. A.	Delaware,	On Primary Rd. No. 113 at Delhi
32.	Storm Lake.....	18. A.	Buena Vista	2 mi. S.E. Storm Lake
33.	Twin Lakes	15. A.	Calhoun,	5 mi. N. of Rockwell City
34.	Wall Lake	12.08 A.	Wright,	1½ mi. from Primary Rd. 5
35.	Wapsipinicon	220. A.	Jones,	S. of Anamosa on U. S. No. 161
36.	Wild Cat Den.....	78.37 A.	Muscatine,	10 mi. N.E. Muscatine

The Board of Conservation consists of the following membership:

W. E. G. Saunders, Emmetsburg, Chairman

Mrs. Henry Frankel, Des Moines

J. G. Wyth, Cedar Falls

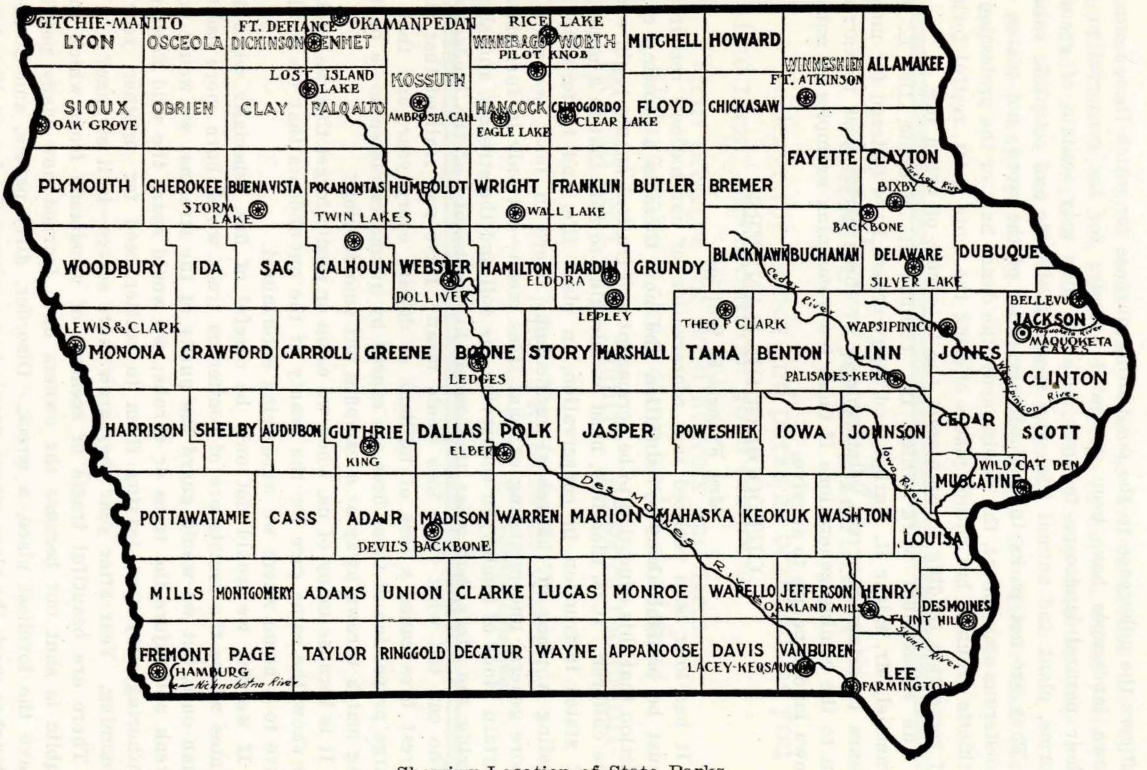
Byron W. Newberry, Strawberry Point

Mrs. R. H. Volland, Iowa City

According to the law enacted by the Thirty-seventh general assembly, the state board of conservation by and with the written consent of the executive council, is authorized to establish public parks in any county in the state, on land which is of historic, scenic or scientific importance or which is adapted to scenic or recreative use. It is further authorized to improve these acres by making them accessible for public enjoyment and is entrusted with the preservation of these areas in their natural state.

A sympathetic understanding and appreciation of these natural Iowa landscapes must be awakened in the minds of the general public if this spirit of respectful watchfulness is to be given force. Rules and regulations may accomplish a certain degree of preservation of these areas, but only through a substantial backing of public opinion may we hope to long maintain those principles of conservation on which these park lands were created.

The general public must keep in mind and demand of their public



Showing Location of State Parks.

officers the adherence to the dominating purpose for which these natural Iowa landscapes have been dedicated namely; for the conservation of their natural landscape features with all they may contain of ground forms, plant and animal life; and spots of historic and scientific value.

They are not parks in the ordinary sense of the word; not places of boisterous amusement, the hurdy-gurdy, the dance hall, or the professional athletic grounds, but rather places offering the more quiet, restful forms of recreation tending to counteract the ill effects of urban life.

The educational work which Dr. Thomas H. McBride, Dr. L. H. Pammel, Mr. Edgar R. Harlan, and many others have fostered for many years to bring about the establishment of these parks must be carried on to the coming generations if these few remaining examples of native Iowa landscape are to survive.

OUTDOOR GOOD MANNERS

Mrs. Francis E. Whitley

It has long been realized that conservation of our nation's resources must be brought about by education and now there is a growing conviction that this education to be permanent and fruitful, should begin with the children. It is, therefore, most encouraging to note that in a number of states instruction in conservation, in plant life, and in forestry is finding a place in the school curriculum. Here in Iowa, we need a more general understanding of what trees mean—not only in furnishing certain kinds of lumber, in conserving the soil and the streams, and sheltering the birds, but what they mean to the beauty of the landscape. Who can tell what their loss would mean? Have you realized that the forest fires cause a loss of millions of dollars every year, and that a large proportion of these fires are caused by human carelessness—a burning match thrown away or a campfire left smouldering?

It is because many of us, when we camp or picnic forget that we ought to show the same care for the beauty of the out-of-doors that we would give to a home where we were being entertained.

If we did, we would not only be careful of fire, especially when in states where the forests are of coniferous trees which burn more easily than ours, but we would guard the purity of the streams; we would not break and injure the trees or shrubs; we would spare the wild flowers, gathering very few, leaving them to scatter seed for another year's blooming. Year after year they grow more scarce—is it strange?

There are beautiful tracts of scenery, of woodlands from which the public is shut out because the owners have learned how many people leave the loveliest place, a wreck. Disorder, dirty papers, and broken branches mark the place where people have enjoyed the hospitality of the woods.

We sing "America the Beautiful." Let every pupil in our schools learn to sing it with the unspoken promise in his heart to keep it so.

The following mottoes should be displayed, at least during Forest

week in every school room. They may be written around the top of the blackboards, used as subjects for themes in English, or for posters to be made in connection with art work. Many very beautiful ones were made last year and awakened much interest.

In every way, let us try to spread the gospel of "Outdoor Good Manners."

Outdoor Good Manners

To leave the woods and parks as beautiful as you find them; this is *outdoor good manners.*

Help preserve the wild flowers and trees.

Always leave a clean camp and a dead fire.

Help to keep your country "America the beautiful."

MRS. FRANCIS E. WHITLEY
G. F. W. C. Forestry Chairman.

Bird Manual

"There are but few things in life more satisfying in their constancy than the friendship of the birds.

"It was Dr. Frank M. Chapman, the well-known ornithologist and lover of birds, who said, 'Every one is born with a bird in his heart.' I think he was right, only most of us become so encumbered with the cares and responsibilities of life, with its conventionalities and artificialities, that the bird in us all too frequently has small chance to try its wings.

"Today, however, an ever increasing number of persons are finding zest and delight in following the byways of nature and are demonstrating that the art of bird loving and the science of bird study may go hand in hand with the more serious business of life."

ALDEN H. HADLEY.

THE LAW RELATING TO BIRD DAY

Section 4249, Code of Iowa, 1927, provides:

"The twenty-first day of March of each year is hereby set apart and designated as bird day. It should be the duty of all public schools to observe said day by devoting a part thereof to a special study of birds, their habits, their usefulness, and the best means of protection. Should such date fall on other than a school day, such day shall be observed on the next regular school day."

In accordance with the provisions of the above section every public school teacher in the state is required to observe the 21st day of March, each year, as Bird Day. Emphasis should be placed upon the values of birds, the bird protection laws, and the means of conserving bird life. This manual has been prepared not only to help with the lessons of Bird Day, but also to provide material for the remainder of the spring term.

I. Stories That May Be Read to the Pupils

A. Suggested for grades 1, 2, and 3

Birds Around Our Home

One day last fall four of my little daughters and I went out to see the birds at work. On the side of an apple tree Carol pointed out a black and white bird about as long as a sparrow. He had a little red cap on the back of his head, and he used his tail to help his feet hold himself on the side of the tree. It was a downy woodpecker. We saw him pull back his head, and then peck very quickly and hard at the bark of the tree. After doing this several times he got a hold on a small worm and swallowed it. Then he said, "chink! chink", and flew to another yard.

We went over to the tree, pulled off some small pieces of bark, and found a small pink worm that looked like one Mary had found in an apple.

Then we walked around to the front yard and saw some blackbirds. They had yellow eyes, and their feathers looked greenish and purple in the bright sunshine. They were walking around and pecking at the ground. Ruth pointed out one to us that had picked up a worm, and he swallowed it.

Jean asked us to listen to the meadow larks down in the pasture just back of our house. About six were singing at the same time. She said that she saw one the day before in the pasture catch a grasshopper. The grasshopper tried to jump away but the meadowlark jumped after him, caught him, and swallowed him. What have you seen birds doing? Perhaps you can tell a long story about it.

B. Suggested for grades 4, 5, and 6

The First Nest of the Season

March 21st, last year, it came to my mind that Bird Day was here again. I at once planned to go out to look for my feathered friends, to find out how they were getting along, and to see if I could do anything for them.

One of the several places visited was a small tract of native prairie at the center of a farm. At first no life could be seen. I started across the field with my eyes open. Suddenly I heard a low cry, and a flutter of wings at my feet. A bird with a brownish-gray back, a blackish tail, between an English sparrow and a robin in size, flew low along the ground and alighted about a hundred feet away.

I thought to look to the ground for the food that it might be finding. Instead I saw four eggs, grayish in ground color, and splotched with brownish. They were in a nest about as wide and as deep as a teacup, lined inside with the soft down from thimbleweeds, and outside with old grass. The nest seemed to fit into a hole that looked like the footprint of a pony.

My curiosity was aroused to find out what bird was nesting so early. I looked again for the mother bird. But I could not see her. She was so nearly of the same color as the dried prairie grass that I missed her that day, tho I could hear her call a whistled "tseet," "tseet."

On the next day I went out again determined to see exactly what bird she was. Though I had an idea of her name, I wanted to make certain. I might have measured the eggs, but I feared that if I should touch them, the mother would not set on them any more. About two hundred feet from the nest, I dropped to the ground, and crawled toward the nest very slowly. Soon, I saw a little head turn around, and noticed a dark bright eye watching me. At either side of her head I could see a small tuft of black feathers that reminded me of horns. This told me that the nest belonged to a prairie horned lark.

The best thing to do next, I decided, was to crawl away, and not disturb the mother any more. My care was rewarded with a song by the father bird. He sang a low, sweet warbled song that many of you may hear when on the way to or from school.

But I didn't see him. Perhaps you will see horned larks in the road. They will look to you much like English sparrows at first. The lark does not have the light ashy gray on the end of the back as the English sparrow has.

And if you come across a nest, the best you can do is to look at it, and leave the eggs to the mother's care. Then there will be several more sweet singers to entertain you next year.

C. Suggested for grades 7 and 8

The Economic Position of Birds

An elderly gentleman told me recently that when he was a boy over seventy years ago, he was encouraged to kill all kinds of birds because they were thought to be harmful to the farm crops, orchards, and gardens. But he now gives birds all the protection that he can because he has learned that birds are his best helpers in the continuous fight against weeds, rodents, and insects.

The scientists of the Biological Survey of the United States Department of Agriculture have observed many kinds of birds in the past and have examined their stomach contents to prove that most birds are very useful in helping to check some of our enemies. Many observers in all of the United States have added their findings to support these facts. The people

of Iowa have learned to value their wild birds so highly that they have passed a law which says that wild birds are the property of the state, that all of them except a few kinds shall not be killed, their eggs taken, or their nests disturbed. The United States and Canada value birds so highly that about ten years ago these countries entered into a treaty which obligates all of us to protect the birds that may migrate between our country and Canada. The tree sparrow summers in Canada, and winters in the United States. Tree sparrows eat more than 875 tons of weeds each winter in Iowa.

You will need only to look around today to see downy woodpeckers, chickadees, and nuthatches picking up worms and egs on the trees, tree sparrows and juncos eating weed seeds, and marsh hawks searching for field mice. You will be able to see so many evidences of good that birds are doing that it is not necessary to use figures to prove the value of the most of them.

A few birds may be killed at any time in Iowa. The unprotected ones are: "The English starling, the English or European house sparrow, blackbird, bluejay, crow, sharp-shinned hawk, Cooper's hawk, and great horned owl". I think it is not the intent of the law that all of these shall be destroyed in large numbers, but rather that one may shoot at them to protect his property, or to check the destruction of other more useful birds. "Less heralded, but no less important to the farmer, is the crow's warfare on insect pests", and "insects supply about one-fifth of its food, and those preyed upon include some of the worst pests with which the farmer has to contend—grasshoppers, caterpillars, and white grubs, and their parents, May beetles", was written by the Biological Survey in 1920.

The several kinds of blackbirds do a great deal of good before harvest time. In the spring they feed largely upon grubworms, and other insects picked in the fields, weed seeds, and upon waste grains. In the summer they rear their young almost entirely upon insects. The redwinged blackbird selects for nearly 7/8 of its food weed seeds and insects injurious to agriculture. Probably not more than 25% of the food of the bronzed grackle is good grain. Nearly 1/3 of its food consists of insects.

The severest criticism against the bluejay is its destruction of other birds and their eggs, though "only 6 out of 530 bluejay stomachs contained remains of wild birds or their eggs." Cooper's hawk is a "chicken hawk", and "practically every stomach examined contained remains of wild birds or poultry." The sharp-shinned hawk is also responsible for much song bird destruction. Learn to know the hawks by color markings, size, and flight. Do not condemn or shoot the protected ones such as marsh, red-tailed, red-shouldered and sparrow hawks. The great horned owl takes sufficient poultry and small birds to cause us to question its value.

The English starling has not settled in Iowa yet.

The English sparrow is "noisy, filthy, and destructive."

II. Helps for Beginners in Bird Study

A. Where and when to look for birds

Look for birds in the air, on ground, in trees, in shrubbery. on fence and telephone posts and wires, and in short—every-

where. Keep your eyes open for them on your way to and from school, and holidays. One need not take many special trips. Permit pupils to look out the school windows for birds. Watch trees in the school yard near the building. The rest to children's eyes and minds will be refreshing. Your friendship and understanding with them will be strengthened.

B. Your conduct in looking for birds

Walk leisurely and quietly. Talk in low tones, do not wave the arms around, nor throw missiles in various directions. It frequently pays best to sit down in woods, on the bank of a stream, or at home, and wait for the birds. When you have learned calls and songs this will be easier and more enjoyable than miles of tramping. Of course, this is hard for children. They must be moving much of the time.

C. Characteristics by which a bird can be identified

1. Color. Many birds are clothed in neutral shades of browns and grays, with little to distinguish them in the way of color markings. Sunshine and shadow also change color values. Use the ordinary prismatic colors with such shades as olive, slate, and ashy as the pupils and you may agree upon in the description of birds.

2. Size. This is very important in recognition. Compare the bird with well-known species such as English sparrow, crow, and robin. A bluebird is smaller than a robin and larger than an English sparrow.

3. Shape of bird. When outlined against the sky, the shape of a bird is of great assistance in recognition. The body may be slender or rounded. The head may be crested or flat, large or small, with large or small, long or short neck. The tail may be long or short, square-ended, round, or notched. The angle of the tail with the body may be characteristic. An angle of nearly ninety degrees, up or down, aids in telling the house wren.

4. Bill. The bill may be short and heavy as in rosebreasted grosbeak, shorter and broad as in kingbird, hooked as in marsh hawk, or longer, and pointed, as in American bittern.

5. Tail-color markings are often characteristic. The several outside tail feathers of a slate-colored junco are white, show at times when the tail is spread in flight, and do not seem conspicuous when the tail is not spread. Such characteristics alone may tell a bird's name to you when once known.

6. Markings. Special color markings or patterns are of great assistance. The white on the rump of flicker, shown in flight, tells the bird at once.

7. Flight. The soaring of hawks, the scalloping flight of goldfinch, and dipping of the flicker help one to know these birds at a great distance.

8. Mannerisms. The nervous continuous twitching of the phoebe's tail, the bluejay's teetering as on a wire, and the cuckoo's leering appearance characterize these birds.

9. Normal localities. Any bird may be out of its most suitable location at times. One soon finds, however, that birds spend most of their waking hours, at least, in the air, on trees, or on ground in certain localities. You will learn to look in one locality for indigo buntings, and perhaps in another situation for humming birds, year after year.

10. Songs and call notes. One must learn birds by sight first, either by himself or through learned direction. Associate songs and calls with a bird as soon as it is seen and identified. It enables one to see and enjoy many more birds more frequently. One may sit inside and "see" birds then. The recreation is thus never-ending. Try to write notes on the diatonic scale, or by dashes in a line or in several lines, or in words and pauses.

11. Aids. Field glasses help very much, but are not requisite. Field guides are very helpful, and practically indispensable. If without a guide in the field, write down or remember, after some study, the outstanding identifying characteristics of the bird, and refer to a guide at home later.

III. Some Common Birds to Look for in Spring

A. *Birds that may be seen in March*

1. Feeding on trees and shrubs
   A. Cardinal, tufted titmouse, brown creeper, golden-crowned kinglet, downy woodpecker, hairy woodpecker, cedar waxwing, chickadee, blue jay, bluebird, redpoll, red-headed woodpecker
2. Feeding on the ground beneath, or near shrubbery and trees
   A. Slate-colored junco, tree sparrow, fox sparrow, mourning dove, American goldfinch, song sparrow, rusty blackbird, fox sparrow, white-throated sparrow
3. Feeding on the ground in fields
   A. Prairie horned lark, crow, pheasant, bobwhite, bronzed grackle, red-winged blackbird, field sparrow, cowbird, meadow lark, snowflake
4. Feeding on the ground near homes
   A. English sparrow, robin, flicker
5. Feeding in air
   A. Phoebe
6. Along waterways
   A. Kingfisher, Canada goose, mallard duck, blue-winged teal, Wilson's snipe, killdeer
7. Soaring in the air
   A. Red-tailed hawk, marsh hawk, sparrow hawk, Cooper's hawk
8. Night fliers
   A. Screech owl, great horned owl
9. Some of these are permanent residents of our state, and may be seen throughout the year.

B. *New Birds to look for in April*

1. Feeding on trees and shrubs

A. Yellow-bellied sapsucker, ruby-crowned kinglet

2. Feeding on the ground beneath trees and shrubbery
   A. Hermit thrush, wood thrush, oven bird, towhee
3. Near our homes
   A. Chipping sparrow, house wren, catbird, brown thrasher
4. Feeding in the air
   A. Bank swallow, purple martin, barn swallow, chimney swift
5. Along waterways
   A. Fish hawk, coot, spotted sandpiper, black tern

C. New birds to look for in May

1. In the woods
   A. Crested flycatcher, wood peewee, scarlet tanager, indigo bunting
2. Feeding in the air
   A. Nighthawk, kingbird
3. Around homes
   A. Ruby-throated hummingbird, yellow-billed and black-billed cuckoos, Baltimore oriole, rose-breasted grosbeak, Maryland yellow throat.
4. Look for March and April birds. Which do you not see? Why? Some were transient, and stopped in Iowa for only a short time on the way farther north. Others were winter residents only. Many of the April and May arrivals are summer visitants that will leave us next autumn.

IV. Correlation with Regular Lessons of the Day, and the Term

A. Reading

Note—Recreational reading lessons from your library readers and supplementary materials

B. Arithmetic

1. Grades 1, 2, and 3.
   a. Counting birds that are seen on way to and from school
   b. Counting birds at feeding boards by kinds and in total
   c. Placing dates on bird calendar
   d. Measuring in handwork
2. Grades 4, 5 and 6
   a. A study of owls during the winter months showed that each destroyed 2 mice a day. It has been estimated that each mouse does damage to the extent of 2 cents each year. How much is an owl worth a year?
   b. The robin as a species travels from Iowa to Alaska, a distance of 3,000 miles in 78 days. How many miles travel does the robin average in a day?
3. Grades 7 and 8
   a. A study made by the Biological Survey of the red-shouldered hawk showed that out of 214 birds, 3 had eaten poultry and 102 had eaten mice. What per cent of the birds had eaten poultry and what per cent mice?
   b. It has been estimated that sparrows eat 875 tons of weed seeds each winter in Iowa. If one bushel of weed seeds

may seed 5 acres to crowd out farm crops, how many acres might be seeded with this amount?

C. *Geography*

1. Grades 1, 2 and 3
   a. Words such as creek, river, hill, and the names of seasons are used in reporting about birds that were seen
   b. Coming of birds in spring calls for telling about the alternation of seasons in northern and southern hemispheres
2. Grades 4, 5 and 6
   a. A bob o' link may winter in southern Brazil, and come to us by way of Central America, Yucatan, across Gulf of Mexico, and up along the Mississippi River. Trace route on a map. How far does he travel?
   b. Look up wintering places of migratory birds such as barn swallow, kingbird, scarlet tanager, rose-breasted grosbeak, and wood peewee in bird guides or books. Locate their winter homes on a map, and discuss climatic conditions, and topography of those countries.
3. Grades 7 and 8
   a. Discuss migration in relation to food supply, room for foraging, and comparative temperatures of regions visited by migratory birds.

D. *Civics*

1. Study of the game laws that apply to birds, especially in Iowa

E. *Spelling*

1. Attention to hyphenated words like white-breasted nuthatch, and red-headed woodpecker. Hyphen shows "white" qualifies "breasted"
2. Discussion of meanings of words as flicker—flickers or moves with a jerky motion in flight; brown thrasher—moves or thrashes long brown tail up and down, and goldfinch—a finch that is golden, and the like
3. Spelling match of birds' names

F. *Writing*

1. Composition writing in permanent composition books and on calendars for motivation of writing
2. Practice on letters that have been poorly executed in manuscript work about birds

G. *History*

1. Grades 4, 5 and 6
   a. Nesting places of swallows, robins, bluebirds, wrens before Iowa was settled by white men
2. Grades 7 and 8
   a. Fate of passenger pigeon, prairie chicken, wild turkey and wood duck with recommendations for future action

H. *Language*

1. Oral—all grades
   a. A pupil may come before the school or a class, and tell

what he saw birds doing on way to and from school, or on holidays

2. Written Language—grades 4, 5, 6, 7 and 8
   a. Permanent composition books, filled with personal observations on birds, and their activities, and illustrated with colored pictures or drawings by pupils
   b. Letters written by pupils for bulletins and other bird information
   c. Essay contest, the best one sent to Bird-Lore for possible publication
   d. Arrangement with local papers to publish weekly a few of the best compositions and poems
3. Debate questions
   a. Resolved, that the English sparrow shall be eradicated
   b. Resolved, that crows shall not be destroyed entirely
   c. Resolved, that house wren's nesting boxes shall not be put up
   d. Resolved, that blackbirds shall be placed on the protected list
4. A poem by a twelve-year-old boy

THE BLUEBIRD

Hark! and look
Just over the brook
What is it I hear
In March's wind so drear?
Is it not my friend
The Bluebird I hear
Singing his spring song
So soft and clear?

—Paul Volkman, Naperville, Ill.

In Bird-Lore, March and April, 1918

I. *Manual arts and handwork*
   1. Color bird plates from Audubon Society
   2. Birds cut out from colored paper, free hand, and paste upon some kind of backing paper
   3. Birds cut out and mounted as in flight
   4. Birds, trees, and the like arranged on a landscape effect on burlap hung at front of room
   5. Bird calendar
      a. Directions

      Secure a large piece of bristol board. Wrapping paper will answer the purpose. Have some pupil rule off and print headings for the following columns; name of bird; observer (name of child reporting first); date seen; where seen; remarks (what it was doing, etc.). Each child may fill in the columns on seeing a bird first. Colored pictures may be arranged for at the left hand margin. The teacher and especially pupils should be permitted to question the observer on colors, behavior, and number of birds that were seen until the school is satisfied that the record is correct. These calendars, if saved from year to year give great stimulus to succeeding classes to beat their predecessors for records. Colored pictures or guides should be accessible

to enable the pupils to compare. Each pupil may maintain his own calendar. This may become a life long hobby.

6. Photography of birds. Best photos sent to Sunday papers, farm papers, Bird-Lore, and Nature Magazine
7. Construction of Bird houses, and feeding boards and boxes

DIMENSIONS OF NESTING BOXES FOR VARIOUS SPECIES OF BIRDS

Species	Floor of Cavity	Depth of Cavity	Entrance Above Floor	Diameter of Entrance	Height Above Ground
	Inches	Inches	Inches	Inches	Feet
Bluebird	5 x 5	8	6	1½	5 to 10
Robin	6 x 8	8	(1)	(1)	6 to 15
Chickadee	4 x 4	8 to 10	8	1⅛	6 to 15
Tufted titmouse	4 x 4	8 to 10	8	1¼	6 to 15
White-breasted nuthatch	4 x 4	8 to 10	8	1¼	12 to 20
House wren	4 x 4	6 to 8	1 to 6	⅞	6 to 10
Bewick wren	4 x 4	6 to 8	1 to 6	1	6 to 10
Carolina wren	4 x 4	6 to 8	1 to 6	1⅛	6 to 10
Dipper	6 x 6	6	1	3	1 to 3
Violet-green swallow	5 x 5	6	1 to 6	1½	10 to 15
Tree swallow	5 x 5	6	1 to 6	1½	10 to 15
Barn swallow	6 x 6	6	(1)	(1)	8 to 12
Martin	6 x 6	6	1	2½	15 to 20
Song sparrow	6 x 6	6	(2)	(2)	1 to 3
House Finch	6 x 6	6	4	2	8 to 12
Phoebe	6 x 6	6	(1)	(1)	8 to 12
Crested flycatcher	6 x 6	8 to 10	8	2	8 to 20
Flicker	7 x 7	16 to 18	16	2½	6 to 20
Red-headed woodpecker	6 x 6	12 to 15	12	2	12 to 20
Golden-fronted woodpecker	6 x 6	12 to 15	12	2	12 to 20
Hairy woodpecker	6 x 6	12 to 15	12	1½	12 to 20
Downy woodpecker	4 x 4	8 to 10	8	1¼	6 to 20
Screech owl	8 x 8	12 to 15	12	3	10 to 30
Sparrow hawk	8 x 8	12 to 15	12	3	10 to 30
Saw-whet owl	6 x 6	10 to 12	10	2½	12 to 20
Barn owl	10 x 18	15 to 18	4	6	12 to 18
Wood duck	10 x 18	10 to 15	3	6	4 to 20

(1)One or more sides open.
(2)All sides open.
[1]Farmers' Bulletin 609.

J. Music

1. Songs from regular music texts
2. Children's listening for bird songs, and trying to put words to the tones
   a. The following phrases have been used for many years
   Bob-white—"bob-white!", clearly whistled
   Chickadee—"chickadee-dee-dee-dee-dee", and a clearly whistled "phoe-bee"
   Whip-poor-will—"whip-poor-will, whip-poor-will, whip-poor-will", etc., vigorously and quite rapidly
   Chimney swift—"chip, chip, chip," etc., when in the air, uttered rapidly and harshly
   Wood-pewee—"pee-a-wee, peer, pee-a-wee"
   Crow—"caw, caw, caw"

Bob o' link—"bob-o-link', bob-o-link', bob-o-link', spink, spank, spink"
Red winged blackbird—"Kong-quer-ree"
American goldfinch—"per-chic-o-ree", when in flight
White throated sparrow—"Old Sam Peabody, Peabody, Peabody", slowly and clearly whistled
Song sparrow—"Maid!-Maid!-Hang on your tea-kettle, teakettle, teakettle"
Towhee—"towhee" or "che-wink"
Ovenbird—"teacher! teacher! teacher!" louder and ascending toward end
Maryland yellowthroat—"witchity, witchity, witchity"
White-breasted nuthatch—"Yank, Yank" with nasal tone
Robin—"cheerily, cheer-up! cheer-up! Cheerily, cheerily, cheer-up!", vigorously
Dickcissel—"dick, -dick,-dick-a-cissel"

3. The calls and songs written with dashes and various marks to represent tones
   Wood Peewee
   pee-a-wee, peer! pee-a-wee, peer!
   Phoebe
   phoe-bee
   Red-winged blackbird
   kong-quer-ee-ee-ee-ee-eè
4. A bird orchestra
   a. The children trying to whistle the tones of the birds
   b. Encouragement of art of listening to songs outdoors and attempting to imitate them in the field
   c. Some children imitating the chickadee and several other birds well enough to attract the birds

V. Other Activities

A. Bird Games[2]

The game element may profitably be introduced into bird-study, especially with young children. Following are some games which the author has seen used that help the child in describing and identifying birds.

1. Games with colored pictures
   Game No. 1. The teacher shows the pictures one at a time to the children, keeping the name covered. The child who first correctly names the bird takes the picture. The child who has the most pictures at the end of the game wins.
   Game No. 2. This may be used with older children. A large number of pictures are hung around the room and numbered, the names being covered. Each child writes the list of numbers on a piece of paper, and opposite the number the name of the bird. The child who names the most wins.
   Game No. 3. The teacher pins the picture of some bird on a child's back and shows the picture to the class. The

[2]Trafton, Gilbert, Teaching of Science in Elementary Schools.

child stands before the class and asks questions of any one he wishes about the bird, 'till he guesses it correctly. He then names some one else to take his place.

Game No. 4. The pictures are placed on a table or stood on blackboard railing, with the names covered. The children are asked in turn to pick out the picture of a certain bird. The child who picks out the most correctly wins.

Game No. 5. A child stands before the class with a collection of pictures, the names being covered. He names them one at a time 'till he makes a mistake. The child who first corrects the mistake then takes his turn in naming the pictures.

Game No. 6. The names of birds are written on separate slips of paper, and these are placed on the edge of the blackboard. The pictures of the birds are placed on the table with the names covered. The children are asked to pick out a picture and place it beside its name. The purpose of the game is to see which child can match the largest number of pictures and slips.

2. Games without pictures

Game No. 7. A child stands before the class and describes some bird which he has in mind. The children try to guess the bird from the description. The child who first guesses it correctly then begins the description for another bird.

Game No. 8. This is a slight modification of the previous game. A child stands before the class and has some particular bird in mind. The children take turns in asking questions about the bird, its color, size, etc., 'till some one guesses the bird. This child then takes his turn in answering questions about some other bird.

3. Other games[3]

Game No. 1. "If I were A ...."

Use stiff cards 8 by 18 inches. In right end mount a bird, one well colored by a child. Print, for example, "handsome Mr. Blue Jay" or "funny nimble Nuthatch" on their respective cards. Have 10 or 15 such cards. Place cards on chalk-tray.

Teacher: "Earl, if you were a bird, what bird would you like to be?"

Earl (with chosen card held by both hands so that each one in the room may see it): "If I were a bird, I'd be the handsome Mr. Blue Jay."

Each child, in turn, takes card to his desk, after replying to the teacher's question. To replace the cards on chalk-tray, when all have been drawn, use this question and answer:

Teacher: "Earl, what bird were you?"

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[3]Bird-Lore, Vol. XX, pp. 175-176.

Earl: "I was the handsome Mr. Blue Jay," (places card on tray).

Game No. 2. "The Farmer's Friends"

Prepare charts 9 by 24 inches. Paste at top a picture of a bird, a Chickadee, for example. Below print its common articles of liet. Have ten such charts.

Let child with pointer stand near chart and say: "The Chickadee is 5¼ inches long. It likes suet and bread crumbs. It helps the farmer because it eats canker-worms, plant-lice, caterpillars, etc." (from the chart).

Game No. 3. "Adjective Game"

Use chart paper, 24 by 18 inches. Let an apt child color a Bronzed Grackle, a Red-winged Blackbird, and a Crow. Cut out and mount one beneath the other in a vertical row on left side of chart. Opposite Bronzed Grackle print "black"; opposite Red-winged Blackbird "blacker"; and opposite Crow, "blackest". Then the child reads: "The Bronzed Grackle is black; the Red-winged Blackbird is blacker; but the Crow is blackest." Teacher covers the Red-winged blackbird. Child reads, "The Bronzed Grackle is black, but the crow is blacker."

Have three black objects nearby to compare. Vary the charts. Use tall, taller, tallest for water-birds, small, smaller, smallest, and large, larger, largest, etc., for land-birds. Compare height of two or three children. Six or eight charts are not too many. It is a good idea to have fine wire nails, 8 inches apart at intervals along the top of the blackboard. Punch all charts 4 inches on each side of center. Hang on nails.

Game No. 4. "Naming Fifty Birds"

Mount pictures of fifty birds on attractive gray mounts. In various ways draw attention to them the month before Bird day. During the last week let the pupils see who can name all of them. On Bird Day hang them across the front of the blackboard on a wire. Let the child who named them perfectly in school point to and name them. Parents are surprised by this exhibition.

Game No. 5. "To Play the Game, "See, Saw, A, An, Etc."

Use cards 6 by 12 inches. Print "I saw a," "I saw an," "I see a," "I have seen an," etc. on them. Place these, with mounted pictures, on chalk-tray. Let each child draw two cards to read, for example, "I saw an Oriole," and read them aloud. Another, "I have seen a Flamingo," etc. Pupils learn the use of "see," "saw," "a," "an," etc. Ask the child why he said "an Oriole".

Game No. 6. "Bird-Calls, Songs, and Whistles"

Child steps to front of room and says: "Chick-a-dee-dee". Next child stands by his side, says: "Chick-a-dee-dee", adding, "Bob-white, Bob-white". Third child stands in the line, sings: "Chick-a-dee-dee", "Bob-white, Bob-white"

and adds the whistled notes of the White-crowned Sparrow. Continue until all the children who can find a bird to imitate are in line. The fifteenth child, should give the fourteen sounds made before him and add a new one of his own.

Game No. 7. "Rhymes"

Cards 18 by 12 inches (18-inch side is top). Print such a rhyme as the following, omitting the last word:

"When little field-mice go out for a walk,
They'd better look out for the hovering ....".

At center of lower edge of card punch a hole. Fasten a card-hook to picture of a Hawk. Child reads rhyme, chooses bird, and hangs it into the hole in the card when he says the word "Hawk". Hang ten or twelve such cards on nails 8 inches apart on edge of blackboard. Stand the bird pictures in chalk-tray so that they may be easily available for selection.

B. *Dramatizations may be worked out by the pupils*

(NOTE—They may take observations of the activities of certain birds, and write out their own parts. There need not be any words spoken, or one pupil may read the story of the activities preceding each actor's appearance. If each pupil works out the activities of one bird the matter is simplified. One may be a red-headed woodpecker. In order to have a better organization, it is well to deal with the birds of an orchard, or a farm grove, or a city home ground. Each pupil may observe all of the birds, and hand his observations in writing to the pupils acting the parts of the birds. Each may tell the pupil, who has chosen red-headed woodpecker for dramatization, the actions that he has seen on the part of this bird. Red-headed woodpecker may dress for his part in a rather inexpensive manner.) For example:

1. Place cap on head. Cap may be made from a black stocking
2. Fit the edge of the end of roll of red crepe paper close to edge of cap. Cut it off a little below the child's neck in the back.
3. Pleat corners at front until paper fits head like a bonnet. Sew pleats, but do not let them meet under the chin.
4. Sew end of black paper onto red at back of neck. Cut off at waist-line, rounding the lower corners.
5. Place end of white crepe paper under child's chin. Fasten one corner to pleats on left side of red cap; pin the other corner to pleats on right side. Cut off at waist, rounding corners.
6. Sew a short red bib over the white. Keep paper up around neck for a high collar.
7. Cover lap in back with black strip, lengthwise.

8. Make pointed bill, three-sided, of stiff paper, nine inches long.
9. Use yellow circles for eyes.
10. Leave opening at one side so the whole goes on like a bonnet.
11. Let "birds" go stocking-footed, or with stockings pulled over their slippers or shoes.

In enacting the activities of a red-headed woodpecker, the pupil may perch himself upon a chair, and peck at a length of board fastened to the back of the chair. He may hop down, and peer from behind the board, or chair back. The red-headed woodpecker catches many insects in the air. The actor should hop around and follow a very zigzag course as though pursuing an elusive bug. A widely opened mouth, followed by a tasty smack of the lips may signify success on the part of the woodpecker. Children will show much interest, and ingenuity in this work of dramatization if permitted to work it out for themselves.

C. Putting up nesting boxes and cleaning out old ones

1. Place box so that the door is away from prevalent cold storm winds.
2. See that box is in the shade throughout the day.
3. Place box for bluebirds at some distance from house as in a part of the grove, while house wren's box may be near to paths and dwellings.
4. Study habits of birds that you wish to attract.
5. Shrubbery, trees, vines are favored by most birds nesting in boxes.
6. Boxes should be plainly colored or bark covered to attract birds.
7. Arrange guards, or place boxes in positions to protect against cats and rats.

D. Feeding birds

1. Keep feed out on boards continuously.
2. A sheltered shelf with wings so that it may revolve is desirable.
3. Place shelf in a situation protected against cats and rats.
4. Bread crumbs, cracked grain, and nut meats are relished by birds. Suet is a favorite food with many.
5. Suet may be tied to sides of windows of school building, or to heavy screen-wire in front of window.
6. A window shelf may easily be arranged in a school room window. Arrange for shelter and camouflage with evergreen or other tree boughs, or cornstalks.
7. A row of evergreens within easy sight of school room will attract many birds to be studied at rest periods.
8. Keep a pan of water in a sunny spot every day.

E. Bird trips

1. Bird trips during school are not required. Children will see many birds on way to and from school and on holidays

if encouraged to do so by correlation in school work as suggested in previous pages.

2. Rules for bird trips
   a. Go over the area yourself previous to trip, and plan what you may see.
   b. Keep all children within a fifty-foot radius of teacher.
   c. Provide for rapid walking for fifteen to twenty minutes after leaving building for children are always physically active.
   d. Ask pupils to look in air, towards the trees and on the ground for birds, and to come quietly to you and report.
   e. Try to point out birds without raising arms hurriedly. Point from behind a pupil or in midst of group.
   f. Bring all the children back to the school building before dismissed.
3. Saturday trips may be arranged for those who have time to spare from home duties.

VI. Bird Day Program

A special program may be selected from the activities suggested in correlation with regular subjects and other activities. It may be arranged somewhat in this order.

BIRD DAY EXERCISES

1. Songs
2. Poems
3. Games
4. Original essays on birds by pupils
5. Readings
6. Reports of the day's observations by pupils
7. Dramatizations
8. Nesting boxes in schoolyard

A. Songs taken from regular music texts. Other songs found in books enumerated with publishers' addresses in reference list at the end of this bulletin

B. Poems of this type are interesting

THE DOWNY WOODPECKER

By Garrett Newkirk

The Downy is a drummer boy, his drum a hollow tree limb;
If people listen, or do not, it's all the same to him.
He plays a Chinese Melody, and plays it with a will,
Without another drumstick but just his little bill.

And he isn't playing all for fun, nor just to have a lark,
He's after every kind of bug or worm within the bark,
Or, if there is a codling moth, he'll get him without fail,
While holding firmly to the tree with all his toes and tail.

He is fond of every insect, and every insect egg,
He works for everything he gets, and never has to beg,
From weather either cold or hot he never runs away;
So when you find him present, you may hope that he will stay.

"I USED TO KILL BIRDS"

By Henry W. Longfellow

I used to kill birds in my boyhood,
  Bluebirds and robins and wrens,
I hunted them up in the mountains,
  I hunted them down in the glens;
I never thought it was sinful—
  I did it only for fun,
And I had rare sport in the forest,
  With the poor little birds and my gun.

But one beautiful day in the springtime,
  I spied a brown bird in a tree,
Merrily swinging and chirping,
  As happy as bird could be;
And raising my gun in a twinkling,
  I fired, and my aim was too true.
For a moment the little thing fluttered,
  Then off to the bushes it flew.

I followed it quickly and softly,
  And there to my sorrow I found,
Right close to its nest of young ones,
  The little bird dead on the ground!
Poor birdies! For food they were calling;
  But now they could never be fed,
For the kind mother-bird who had loved them,
  Was lying there bleeding and dead.

I picked up the bird in my anguish,
  I stroked the wee motherly thing,
That could never more feed its dear young ones,
  Nor dart through the air on swift wing.
And I made a firm vow in that moment,
  When my heart with such sorrow was stirred,
That never again in my lifetime,
  Would I shoot a poor, innocent bird!

TWO WISE OWLS

We are two dusky owls, and we live in a tree;
Look at her—look at me!
Look at her—she's my mate, and the mother of three
Pretty Owlets, and we
Have a warm, cozy nest, just as snug as can be.

We are both very wise; for our heads, as you see,
(Look at her—look at me!)
Are as large as the heads of four birds ought to be;
And our horns, you'll agree,
Make us look wiser still, sitting here on the tree.

And we care not how gloomy the night-time may be;
We can see—we can see
Through the forest to roam, it suits her, it suits me;
And we're free—we are free
To bring back what we find, to our nest in the tree.

—*Anonymous.*

VII. ORGANIZATION OF A JUNIOR AUDUBON SOCIETY

The National Association of Audubon Societies, 1974 Broadway, New York City.

VIII. REFERENCES

Allen, Mrs. Eisa G., *Winter Bird Masque*, Comstock Publishing Co., Ithaca, N. Y. 25c. Contains a bird play.

Audubon Pocket Bird Collection. The National Association of Audubon Societies, 1974 Broadway, New York City, each case 10c. Case number 1 contains small colored pictures of 63 permanent resident and winter visitant land birds of northeastern states. Case number 3 contains small colored pictures of 74 migratory birds arranged according to date of appearance.

Burgess Bird Book for Children. Little, Brown & Co., Chicago. $3.00.

Burroughs, John, *Bird Stories.* Houghton Mifflin Co., Chicago. $1.50.

Chapman, Frank, *Birds of Eastern North America.* D. Appleton Co., Chicago. $4.00. Contains descriptions of birds known in this region.

Chapman, Frank, *The Travels of Birds.* D. Appleton Co., Chicago. $1.00. Gives general account of winter bird life.

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How to Attract Birds in East Central States, No. 912
Some Common Birds Useful to the Farmer, No. 630
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Mathews, *Wild Birds and Their Music*. Putnam's, G. P. Sons, New York City. $3.50. Contains 50 plates of common birds, most of them colored and songs written on scales and in word phrases.

Miller, Olive Thorne, *First Book of Birds*. Houghton Mifflin Co., Chicago. $1.00.

Palmer, E. L., *Field Book of Nature Study*. Comstock Publishing Co., Ithaca, N. Y. $2.50. Contains landscapes, cut-out pictures, outlines of information, pictures of 104 birds, many animals, and plants.

Patch, Edith M., *First Lessons in Nature Study*. The Macmillan Co., Chicago.

Readers and encyclopedia in school library.

Reed, Chester A., *Land Birds East of the Rockies*. Doubleday, Page & Co., Garden City, N. Y. Contains colored plates of 191 kinds of land birds with notes on their calls, nests, and ranges.

Reed, Chester A., *The Bird Book*. Doubleday, Page & Co., Garden City, N. Y. $3.00. Contains references on birds.

Reed, Chester A., *Water and Game Birds*. Doubleday, Page & Co., Garden City, N. Y. Contains colored plates of more than 230 water and game birds with notes on their calls, nests, and ranges.

Steppan, Joseph, *Bird Exhibits*. State Historical Society, Edgar S. Harlan, Librarian, Des Moines. Loaned to schools upon request.

Trafton, Gilbert, *Teaching of Science in Elementary Grades*. Houghton Mifflin Co., Chicago.

Miscellaneous Materials, colored bird plates, pictures, and bulletins
Brown, Geo. P. and Co., 38 Lovett St., Beverly, Mass.
Church and Dwight Co., Inc., 27 Cedar St., New York City.
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National Association of Audubon Societies, 1974 Broadway, New York City.

Perry Picture Co., Malden, Mass.

Magazines

Bird-Lore, National Association of Audubon Societies, 1974 Broadway, New York City. Special rates to Junior Audubon Societies.

Nature Magazine, Washington, D. C. $3.00.