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Imprint _____

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LOUISIANA SPECIAL DAYS.



A LIVE OAK.

The Washington Oak, Audubon Park.

Issued by

T. H. HARRIS,

STATE SUPERINTENDENT OF EDUCATION.

Baton Rouge, La.

LB3525
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1910

ARBOR DAY.

Baton Rouge, La., Oct. 30, 1909.

To the Teachers of Louisiana:

The custom of planting trees has been prevalent among the nations of the earth during the centuries; and it has been practiced by semi-civilized Aztecs as well as by the highly civilized Germans. In France trees are planted along the roadside and along the borders of fields. But the honor of instituting our American Arbor Day belongs to Hon. J. Sterling Morton, of Nebraska, Secretary of Agriculture during Cleveland's administration.

"The lesson of Arbor Day is the use and value of the tree in the life of the nation. It should therefore be the aim of the teacher so to observe the day as to convey the lesson clearly and impressively." The day should be devoted to planting trees not only for the sake of the trees and for beautifying the school grounds, but for teaching the lessons of elementary forestry, and the economic value of the forest.

The day should be partly devoted to the planting of trees, but the planting of trees should be used as a means of arousing an interest in the study of the economic value of the forest and to furnish a basis for the study of elementary forestry.

My earnest desire is that the teachers of the State enter into the spirit of the day and celebrate it in such a manner as to arouse the enthusiasm of the children. Arbor Day furnishes an opportunity to impress upon the school children of the State the value, the care, and the conservation of one of the great natural resources of Louisiana—the forest.

Very sincerely yours,

T. H. HARRIS,
State Superintendent.

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To the Teachers.

This book is the property of the State and should be listed and filed with the other books of the library. The pupils should have access to this pamphlet, and teachers can make use of it in preparing subsequent exercises.

RESOLUTIONS ADOPTED BY THE STATE BOARD OF EDUCATION.

Be it resolved: That the State Board of Education hereby designates the second Friday in January as Arbor Day, a day on which those in charge of the public schools and institutions of learning under State control, or State patronage, shall, for at least two hours, give information to the pupils and students concerning the value and interest of forestry, the duty of pupils to protect the song-birds, and to encourage and assist in the planting of forest trees.

Be it further resolved: That the State Superintendent of Public Education is hereby directed to prescribe from time to time, a program of exercises and instruction in the subjects hereinbefore mentioned, which shall be adopted and observed by the public school authorities on Arbor Day, said program to be issued to the Parish Superintendents, and upon receipt of copies of such program, sufficient in number to supply all the schools under their supervision, the Superintendents aforesaid shall promptly provide each of the schools under their charge with a copy, and cause same to be observed. (Nov. 24, 1905.)

The tree planter and teacher united in one shall be declared the best benefactor of modern times—the chief provider for posterity.

—J. Sterling Morton.

To the Public.

The Forest Service exists to promote forestry throughout the whole country, for every practical purpose and for the benefit of all. Its knowledge, advice, and cooperation are at the disposal of all forest users.

Those who desire to practice forestry on their timber lands or wood lots should apply for Circular 21, which explains the terms of cooperation offered.

Those who desire to plant or improve forest plantations should apply for Circular 22, which explains the cooperative terms offered for this work.

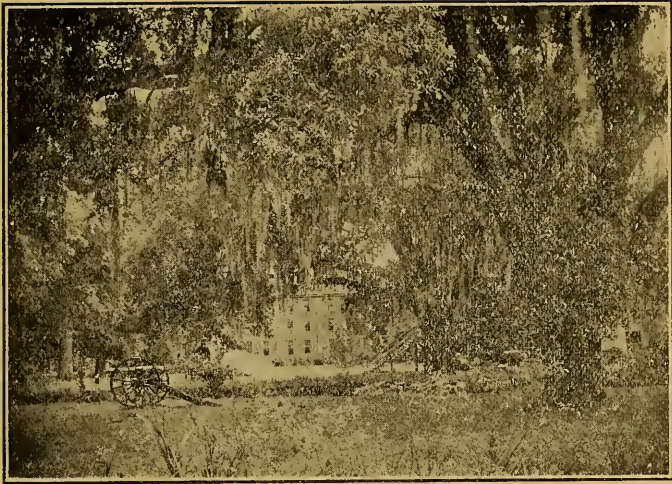
Following the necessary official action on the part of any State, cooperative studies of the State forest problems will be undertaken.

Questions about the National Forests, about tree species, about the strength, mechanical qualities, preservative treatment, or commercial use of woods, about woods for special purposes, as well as about forests, forest products, and the industries depending upon them, will be carefully answered.

Information upon forest legislation may be sought.

All communications should be addressed to

THE FORESTER,
U. S. Department of Agriculture,
Washington, D. C.



LIVE OAKS AND SPANISH MOSS.
(Campus, Louisiana State University and A. and M. College,
Baton Rouge, La.)

SUGGESTIONS FOR PROGRAMS.

(For other subjects for Arbor Day consideration see Parish
Association Manual, 1908, page 40.)

BEFORE ARBOR DAY:

1. Begin at once to arouse an interest in Arbor Day.
Find out who will furnish trees, shrubs, bulbs and
flowering perennials such as will grow in Louisiana.
2. Try and get an old soldier to furnish and help plant a
Confederate memorial tree.
3. Clean up the yard and spade up a flower bed.
4. Plat the ground and decide what would be the best
plan of planting.
5. Have holes dug for planting trees before Arbor Day.
(See page 42, Parish Association Manual, 1908.)
6. For morning opening exercises read an article from
Arbor Day circular.

ON ARBOR DAY—(Program No. 1):

1. Song: An anthem for Arbor Day.
2. Recitations or readings by pupils, verses found in this
pamphlet.

3. Each pupil tell the school what he has done in planting, or in helping the birds.
4. Planting trees, shrubs, vines and flowers.
5. Song: After the planting.

List this pamphlet with your Library books that the children may continue to enjoy the pictures and read the articles and poems.

SUGGESTED SUBJECTS FOR ESSAYS (1909 Manual):

History of Arbor Day.

Arbor Day Influence.

School Grounds—Arbor Day Work in the Past and Future—How to Improve Them.

Famous Trees.

Forestry.

Plants Native to Our District and State.

Plans for the Next Year.

Debate—Resolved, That he who plants trees benefits the world more than he who builds cities.

What Children Can Do to Improve School Grounds.

Use of Forests.

Pinchot-Ballinger Controversy. (See current magazines).



A SCHOOL SITE WITHOUT TREES.

MATERIAL FOR ARBOR DAY.

- I. From Parish Association Manual, 1908:
 1. Beautify school grounds, page 47.
 2. Good roads, page 60.
 3. Agriculture and Home Economics, page 23.
 4. Hints on rural school grounds, page 14.
 5. Kinds of plants for planting, page 20.
 6. Kinds of plants for decoration, page 20.
 7. How to plant trees, page 41.
 8. What trees to plant, page 41.
 9. Prepare the ground, page 42.
 10. About trimming trees, page 43.
 11. Protect the trees, page 44.
 12. A common mistake, page 45.
 13. Plant shrubs also, page 45.
11. From One-Week Institutes (1908):
 1. Ornamentation of school grounds.
- III. From Other Sources:
 1. Arbor Day Manual, 1906.
 2. Arbor Day Manual, 1907.
 3. Arbor Day Manual, 1908.
 4. Arbor Day Manual, 1909.



A SCHOOL SITE WITH TREES.

How to Use This Material.

Talk to the children and encourage them to plant house and garden plants.

Discuss "How to Plant Trees."

Read the poems to the children, or, better still, let some of the children read them to the school.

Commit to memory some of the poems.

Discuss the article on "The Economic Value of Common Birds." Pupils might be assigned a particular bird of which they were to tell the school.

Read the poems and commit some to memory.

Have a short program of singing, recitations, and essays on Arbor Day.

Get the school board to clean up the yard, repair fences, and trim the trees.

Plant flowers, vines, shrubs, and trees. Most of this work should be done at noons and recesses, but some planting should be done on Arbor Day.

Place this pamphlet in the school library for future reference.

Use materials found in your school journals and elsewhere.

HINTS FOR ESSAYS, DISCUSSIONS, ETC.

How to Make Arbor Day Most Beautiful.

History of Arbor Day.

Famous Trees.

What the Trees Do for Us.

How to Plant Trees.

How to Care for Them.

Legends about Trees.

What We Owe to Trees.

Our Most Useful Trees.

My Favorite Tree.

Best Tree to Plant.

The World's Great Forests.

Best Tree to Plant on Roadside.

Best Trees and Shrubs for Home Lawns.

School Grounds: How to Improve Them.

How to Do Away with Rubbish on the Roadside.

Why Children Should Be Entertained on Arbor Day and Bird Day.

School Teachers:

Have you ever talked with your pupils about keeping the school room neat and clean and the grounds attractive? Are there any pictures on the walls of your school room? Does the floor need scrubbing? Are there any piles of rubbish in the yard?

School Trustees:

How many years have elapsed since your school house has had a coat of paint? Is the building a credit to your community? Do you know that it does not cost a very large sum to paint the ordinary school house? What steps have you taken to secure ample school grounds?

HOW TO PLANT A TREE.

I. Dig the hole wider and deeper than the tree requires. If the tree just fits into the socket, the tips of the roots will meet a hard wall, which they are too delicate to penetrate, hold fast to, or feed in.

II. Be sure that the surface soil is hoarded at one side when the hole is dug. This soil is mellow and full of plant food. The under soil is harder and more barren. Some rich garden soil can well be brought over and used instead of this subsoil.

III. Take up as large a root system as possible with the tree you dig. The smaller the ball of earth, the greater the loss of feeding roots and the danger of starvation to the tree.

IV. Trim all torn and broken roots with a sharp knife. A ragged wound below or above the ground is slow and uncertain in healing. A clean, slanting cut heals soonest and surest.

V. Set the tree on a bed of mellow soil with all the roots spread naturally.

VI. Let the level be the same as before. The tree's roots must be planted, but not buried too deep to breathe. A stick laid across the hole at the ground level will indicate where the tree "collar" should be.

VII. Sift rich earth, free from clods, among the roots. Hold the tree erect and firm; lift it a little to make sure the spaces are well filled underneath. Pack it well down with your foot.

VIII. If in the growing season, pour in water and let it settle away. This establishes contact between root hairs and

soil particles and dissolves plant food for absorption. If the tree is dormant do not water it.

IX. Fill the hole with dirt. Tramp in well as filling goes on. Heap it somewhat to allow for settling. If subsoil is used, put it on last. Make the tree firm in its place.

X. Prune the top to a few main branches and shorten these. This applies to a sapling of a few years whose head you are able to form. Older trees should also be pruned to balance the loss of roots. Otherwise transpiration of water from the foliage would be so great as to overtax its roots, not yet established in the new place. Many trees die from this abuse. People cannot bear to cut back the handsome top, though a handsomer one is soon supplied by following this reasonable rule.

XI. Water the tree frequently at first. A thorough soaking of all the roots, not a mere sprinkling of the surface soil, is needed. Continuous growth depends on moisture in the soil. Drainage will remove the surplus water.

XII. Keep the surface soil free from cakes or cracks. This prevents excessive evaporation. Do not stir the soil deep enough to disturb the roots. Keep out grass and weeds.

From "The Tree Book" (Doubleday, Page & Co.).

HISTORIC AMERICAN TREES.

The grand Magnolia tree, near Charleston, S. C., under which General Lincoln held council of war previous to surrendering the city.

The great Pecan tree at Villere's plantation, near New Orleans, under which a portion of the remains of General Packenham was buried.

The Tory Tulip tree on King's Mountain battle field in South Carolina, on which ten bloodthirsty Tories were hanged at one time.

The tall Pine tree at Fort Edward, N. Y., under which the beautiful Jane McCrea was slain.

The magnificent Black Walnut tree, near Haverstraw, on the Hudson, at which General Wayne mustered his forces at midnight, preparatory to his gallant and successful attack on Stony Point.

The Lofty Cypress tree in the dismal swamp, under which Washington reposed one night in his young manhood.

The huge French Apple tree, near Fort Wayne, Ind., where Little Turtle, the great Miami chief, gathered his warriors.

The wide spreading Oak tree of Flushing, Long Island, under which George Fox, the founder of the Society of Friends, preached.

The Pear trees planted, respectively, by Governor Endicott, of Massachusetts, and Governor Stuyvesant, of New York, two hundred years ago.

The Freedman's Oak tree, Hampton Institute, Hampton, Virginia, under which the slaves of this region first heard read President Lincoln's emancipation proclamation.

The Elliot Oak tree of Newton, Mass., under which the apostle John Elliot taught the Indians Christianity.

The Ash and Tulip trees planted at Mount Vernon by Washington.

The Elm tree planted by General Grant on the Capitol grounds at Washington.

The Treaty Elm tree at Philadelphia, under which William Penn made his famous treaty with nineteen tribes of barbarians.

The Charter Oak at Hartford, which preserved the written guarantee of the liberties of the Colony of Connecticut.

THE PLANTING SONG.

(Air: "America.")

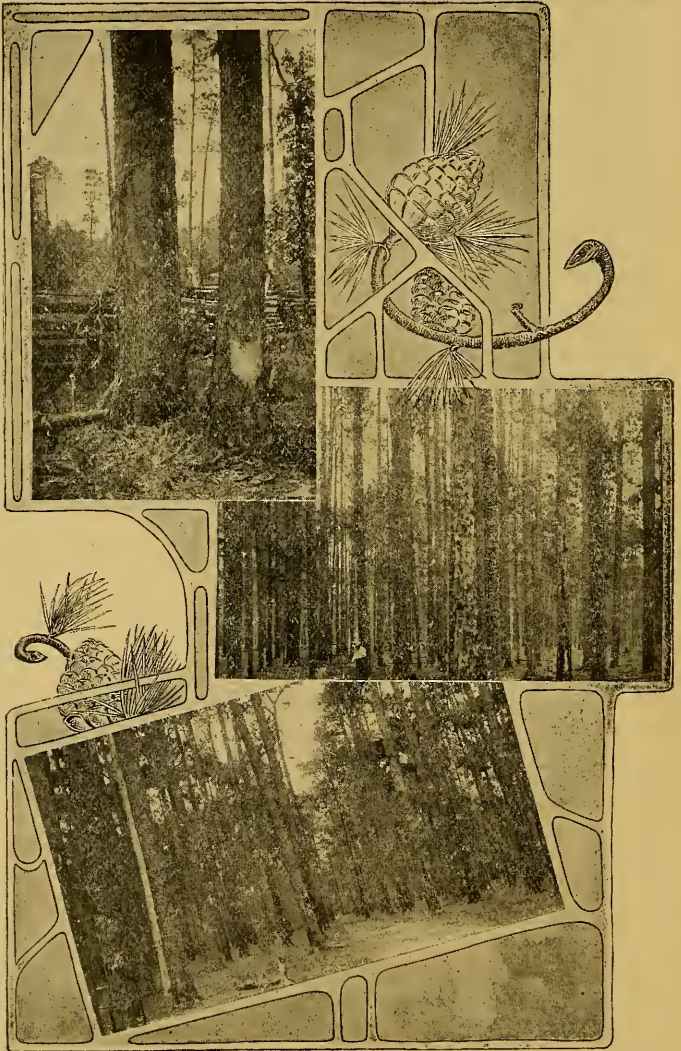
"Grow thou and flourish well,
Ever the story tell
Of this glad day.
Long may thy branches raise
To heaven our grateful praise,
Waft them on sunlight rays
To God away.

"Deep in the earth to-day
Safely thy roots we lay,
Tree of our love;
Grow thou and flourish long;
Ever our grateful song
Shall its glad notes prolong
To God above."

—Selected.

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.



Showing Method of Obtaining Turpentine.
Second growth Pine Forest.
Virgin Pine Forest.

To avert treelessness; to improve the climatic conditions; for the sanitation and embellishment of home environments; for the love of the beautiful and useful combined in the music and majesty of a tree as fancy and truth unite in an epic poem, Arbor Day was created. It has grown with the vigor and beneficence of a grand truth, or a great tree.—J. Sterling Morton.

SKETCH OF J. STERLING MORTON.

The Founder of Arbor Day.

Julius Sterling Morton was born in Jefferson County, New York, in 1832. He was of Puritan stock, his ancestors having come from England on the "Little Ann," the first ship after the Mayflower. His parents removed to Michigan when the son was still a baby. He was sent to good private schools and seminaries and later on to Michigan University, but was graduated at Union College, New York, in 1854. Immediately after completing his college course, he married and removed to Nebraska, and in the following year chose Nebraska City as his permanent home, locating as a preemptor upon a claim half a mile square, adjacent to the town. This estate grew into beautiful Arbor Lodge, so familiar to all lovers of the holiday founded by Mr. Morton, and the home of the remainder of his life.

THE MENACE OF THE FOREST.

The climatic history of the Old World will repeat itself in America. If forest destruction, at the present rate of recklessness, should continue much longer, our continent may have to dry up. But the fact remains, and its significance may be inferred from the experience of the Mediterranean coast lands, where thousands of god-gardens have been turned into Gehennas of wretchedness and desolation. By tree destruction alone, a territory of 4,500,000 square miles has been withdrawn from the habitable are of our planet. The physical history of the Eastern hemisphere is the history of a desert that originated somewhere near the cradle of the Caucasian race—in Bactria, perhaps—and, spreading westward and southward, has blighted the Edens of three continents like a devouring fire, and is now scorching the west coast of Africa, and sending its warning sand clouds far out to seaward.—Dr. Felix S. Oswald.

THE CHRIST OF THE ANDES.

In 1900 Argentina and Chile were on the verge of war over territorial boundary disputes; but a revulsion of feeling, orig-

inating in the noble protest of an eloquent bishop of Argentina, led to an agreement to arbitrate their difficulties. Since the arbitration, which satisfied both countries, both have begun disarmament. Chile has turned an arsenal into a trade school, is teaching science more than military tactics to her cadets, and has already spent on good roads ten million dollars gained by reducing naval expenses. In March, 1904, upon a mountain pass on the lofty Andes boundary line, there was erected a colossal bronze statue of Christ, as a memorial of the compact of perpetual peace between these nations, and as a better guardian of the border than a cordon of fortresses.—From "Patriotism and the New Internationalism," Lucia Ames Mead (Ginn & Co.).

PLANTED HIMSELF TO GROW.

Dear, little bright-eyed Willie,
Always so full of glee,
Always so very mischievous,
The pride of our home is he.

One bright summer day we found him
Close by the garden wall,
Standing so grave and dignified
Beside a sunflower tall.

His tiny feet had covered
With the moist and cooling sand;
The stalk of the great, tall sunflower
He grasped with his chubby hand.

When he saw us standing near him,
Gazing so wonderingly
At his babyship, he greeted us
With a merry shout of glee.

We asked our darling what pleased him;
He replied with a face aglow,
"Mamma, I'm going to be a man;
I've planted myself to grow."
—Selected, from "Nature in Verse," Copyright,
1895, by Silver, Burdett & Co.

ARBOR DAY SONG.

No. 1.

(Air: "Hold the Fort.")

Friends and parents, gather with us,
In our school to-day,

Thoughts of groves and tangled wildwoods
In our minds hold sway.

CHORUS.

Spare the trees, oh, thoughtless woodman.
Hew but what you need;
They give balm to vagrant breezes,
For their lives we plead.

Giant oaks in sunny pastures
Cast their pleasant shade,
Maples clad in gold and crimson
Cheer the darkened glade.

Lofty firs and murmuring pine trees
Shading mountain's crest,
Are the growth of weary ages;
For them we protest.
Heralded in leafy banners,
Seasons four we greet;
Every bough a sacred temple,
For the song birds sweet.

—Iowa Special Days

ARBOR DAY SONG.

No. 2.

(Air: "Upidee.")

O, Arbor Day is here at last,
Tra, la, la! Tra, la, la!
The cold of winter now is past,
Tra, la, la, la, la!

Now all the trees are green and bright,
The flowers are dancing in the light;
Birds are singing in the trees,
Tra, la, la! Tra, la, la!
Boughs are swaying in the breeze,
Tra, la, la, la, la!

The skies are clear, the skies are blue,
Tra, la, la! Tra, la, la!
The trees and flowers are drest anew,
Tra, la, la, la, la!

THE FOREST SERVICE: WHAT IT IS AND HOW IT DEALS WITH FOREST PROBLEMS.

"Forest Service" has been the name since July 1, 1905, of that branch of the Department of Agriculture which was previously called the "Bureau of Forestry," and, earlier still, the "Division of Forestry."

Since February 1, 1905, the Forest Service has been charged, under the direction of the Secretary of Agriculture, with the administration of the National Forests. About the management of the National Forests, therefore, the work of the Service now centers. The forests, whose area on October 1, 1907, was 158,809,459 acres, are of vital importance for their timber and grass and for the conservation of stream flow. They are so managed as to develop their permanent value as a resource by use. Opposition toward them, based on the belief that preservation would prevent use, has changed with the understanding of their real object to approval and support. The last valid objections to their establishment and maintenance have been removed by the Agricultural Settlement law of June 11, 1906, and by a clause in the agricultural appropriation act for the year 1906-7. By the first, agricultural land in National Forests, if classified as chiefly valuable for agriculture, listed in the local land office, and opened by the Secretary of the Interior, may be taken up by home builders. Many small tracts of agricultural lands, scattered here and there along creeks and valleys, have unavoidably been included within forest boundaries, though the utmost care to secure elimination of all large bodies of such land when the boundaries were drawn. The need of such a law as that of June 11 was clearly seen, and its passage was secured.

The so-called "ten per cent clause" of the agricultural appropriation bill provides that States having forests are to receive 10 per cent of the gross receipts from the forests within their boundaries, to be distributed among the counties in which the forests lie and devoted to public schools and roads. Many counties have much of this area, in some cases more than half, in National Forests, and this land is withdrawn from the possibility of private ownership and taxation. By the new law the loss to the counties from the withdrawal of taxable land is offset.

The business management of the National Forests is in itself a large undertaking. The business on the National Forests is destined to grow rapidly and to assume far-reaching economic importance. In the fiscal year ending June 30, 1907, approximately \$1,500,000 was received, chiefly from grazing and

timber sales. The returns from timber sales alone, over \$500,000, more than doubled the returns of the previous year. Grazing, which formerly had been free, has brought in nearly \$1,400,000 under the permit system inaugurated in January, 1906.

The free use of timber and stone which, at the discretion of the Secretary of Agriculture, is granted to settlers and others who may not reasonably be required to purchase, as well as to school and road districts, churches, or cooperative organizations of settlers, very greatly aids the development of the regions in and near the forests.

It is the active policy of the Forest Service to manage the National Forests upon a sound technical as well as business basis. Only improvement in the standard of the technical management can secure steady and constant increase in returns without depleting the forest. To this end careful investigation is essential. This includes special study of the habits and requirements of trees as a basis for the regulation of cutting of every kind. Special attention is given to finding new uses for species at present valueless or little used, as well as for the trees already classed as commercial and for timber killed by fire or insect attacks. Studies are made of damage by fire and the best means of preventing it, and, in cooperation with the Bureau of Entomology, of the prevention and control of insect ravages. In these and in many other ways the basis of knowledge necessary for the best forest work is being laid.

Aside from the care and perpetuation of the National Forests, the Forest Service has to do with the practical uses of forests and forest trees in the United States, especially with the commercial management of forest tracts, wood lots, and forest plantations. It undertakes such forest studies as lie beyond the power or the means of individuals to carry on unaided. It stands ready to cooperate, to the limit of its resources, with all who seek assistance in the solution of practical forest problems, particularly where such cooperation will result in setting up object lessons to serve as encouraging examples for the general benefit.

Cooperative State studies are carried on with States which request the advice of the Service. Examples of this work are the studies of forest conditions in New Hampshire, which appropriated \$7,000 toward the total cost, and California, which appropriated \$25,000. Maine, Massachusetts, Maryland, Rhode Island, Delaware, North Carolina, Kentucky, Tennessee, Maryland, Rhode Island, Delaware, North Carolina, Kentucky, Tennessee, Missouri, and Mississippi have also called upon the Service for expert assistance.

The fruits of its more important studies are published and distributed without charge upon request, or sold at a low price by the Superintendent of Documents.

The last time I saw James Russell Lowell he walked with me in the garden at Elmwood to say good-by. There was a great horse-chestnut tree beside the house, towering above the gable, covered with blossoms. The poet looked up and laid his trembling hand upon the trunk. "I planted the nut," said he, "from which the tree grew. My father was with me, and showed me how to plant it."—Henry Van Dyke, in "Little Rivers."

In "Les Miserables" there is delineated an ideal lover of nature and humanity—the good Bishop of D. He, who, when gently reproached by a domestic for reserving one-fourth of his garden spot for flowers instead of letting her grow vegetables on the whole of it, replied: "The beautiful is as useful as the useful—perhaps more so." This sentence, in my opinion, is worthy to be emblazoned on the wall of every school room in our land.

PINE NEEDLES.

If Mother Nature patches
The leaves of trees and vines,
I know she does her darning
With needles of the pine!

They are so long and slender,
And sometimes, in full view,
They have their threads of cobwebs,
And thimbles made of dew!

William H. Hayne.

From St. Nicholas,

Used by permission. Copyright by the Century Co.

TREES.

However little I may be,
At least I too can plant a tree.

And some day it will grow so high
That it can whisper to the sky.

And spread its leafy branches wide
To make a shade on every side.

Then on a sultry summer's day,
The people resting there will say—

“Oh, good and wise and great was he
Who thought to plant this blessed tree!”

Abbie Farwell Brown.

From the “Star Jewels and Other Wonders.”

Used by permission of Houghton, Mifflin & Co.

SONG—WE LOVE THE TREES.

(Tune: “There’s Music in the Air.”)

We love the grand old trees,
With the oak, their royal king,
And the maple, forest queen,
We to her our homage bring.
And the elm with stately form,
Long withstanding wind and storm;
Pine, low-whispering to the breeze,
O, we love the grand old trees!

We love the grand old trees
The cedar bright above the snow,
The poplar straight and tall,
And the willow weeping low,
Butternut and walnut, too,
Hickory so staunch and true,
Basswood blooming for the bees,
O, we love the grand old trees!

We love the grand old trees
The tulip branching broad and high,
The beech with shining robe,
And the birch so sweet and shy,
Aged chestnuts, fair to see,
Holly, bright with Christmas glee,
Laurel, crown for victories.
O, we love the grand old trees!

Ada D. Sherwood, Journal of Education.

SWEET BIRDIE, SING.

(Air: “Lillie Dale.”)

If ever I see
On bush or tree,
Young birds in a pretty nest;
I must not in my play
Steal the birds away,
To grieve the mother’s breast.

My mother, I know,
Would worry so,
Should I be stolen away;
So I'll speak to the birds
In my softest words,
Nor hurt them in my play.

—Selected.



AVENUE OF OAKS.
(Typical Colonial Plantation Home.)

TREE OF EDUCATION.

A mighty tree, of giant growth,
With branches fixed so low,
That all may grasp its lower limbs,
Was planted long ago.
'Twas planted by Almighty Power,
With purpose most sublime;
Its praise is sung in every tongue,
In every land and clime.

Its growth is nurtured, year by year,
And watched with eager eyes;
Its food, the product of the mind,
Embodied, never dies.

Its fruit is knowledge. He who would
This wholesome fruit acquire,
Must start upon the lower limbs
And labor toward the higher.

Its branches are so closely grown
That he who would ascend,
Will find that pleasures exquisite
His every step attend.
Bright blossoms grow on every twig,
And every bud so fair,
Reveals to his inquiring mind
A truth in hiding there.

Ambition now assumes command,
And animates his soul,
And all his efforts are put forth
To reach the far-off goal.
He scales the branches, one by one,
Is not content to stop,
Until his name is carved among
The names upon the top.

The Tree of Learning is the work
Of Nature's highest art,
And men and women are but leaves—
A very simple part;
But through these leaves the tree breathes life,
And this empyrean tree
Will stand a living monument
Throughout Eternity.

—J. W. Campbell, St. Martins, O.

Be an earnest, energetic, wide-awake, thinking teacher and
you will succeed.

We'll seek no kingship; there is no first nor best;
The best is being best we can,
Then more of life and never rest;
We have a work that God began,
And all are in His plan.
—Charles Augustus Schumaker.

Nature is but a name for an effect
Whose cause is God.

—Cowper.

One impulse from a vernal wood
May teach you more of man,
Of moral evil and of good,
Than all the sages can.

—Wordsworth.



WHITE OAK WOODS.

THE WOODS.

The woods at first convey the impression of profound repose, and yet, if you watch their ways with open ear, you find the life which is in them is restless and nervous as that of a woman; the little twigs are crossing and twining and separating like slender fingers that can not be still, the stray leaf is to be flattened into its place like a truant curl; the limbs sway and twist, impatient of their constrained attitude; and the rounded masses of foliage swell upward and subside from time to time with long soft sighs, and, it may be, the falling of a few rain-drops which had lain long hidden among the deeper shadows.—Oliver Wendell Holmes.

THE SPRING TIME.

I love to trace the break of Spring step by step. I love even those long rain-storms, that sap the icy fortunes of the lingering winter—that melt the snows upon the hills, and swell the mountain brooks. I love the gentle thaws that you can trace,



SATIN WALNUT. OR BLACK GUM.

day by day, by the stained snow-banks, shrinking from the grass; and by the quiet drip of the cottage eaves. I love to search out the sunny slopes under some northern shelter when the reflected sun does double duty to the earth, and when the first Hepaticas, or the faint blush of the Arbutus, in the midst of the bleak March atmosphere, will touch your heart, like a hope of Heaven in a field of graves. Later comes those soft, smoky days, when the patches of winter grain show green under the shelter of leafless woods, and the last snow drifts reduced to shrunken skeletons of ice, lie upon the slope of northern hills, leaking away their life. Then the grass at your door grows into the color of the sprouting grain, and the buds upon the lilacs swell and burst. The old elms throw down their thin dingy fingers, and color their spray with green; and the brooks when you throw your worm or the minnow float down whole fleets of crimsoning blossoms of the maple. Finally the oak steps into the opening quadrille of spring, with grayish tufts of a modest verdure, which by and by will be long and glossy leaves.—Ike Marvel, in "Dream Life."

THE OAK TREE.

A gentleman once stood before an oak tree pondering deeply. Nine miles from the coast of Cornwall lay some dangerous rocks on which many a brave ship had been wrecked. Twice a lighthouse had been erected upon them, and twice destroyed. On what plan could he build a new one,

which should stand firm through storm and tempest? The oak tree stands for hundreds of years; branch after branch may be broken off, but the trunk remains firm. Many others are torn up by the roots, but never the oak. Mr. Smeaton wondered if it was the peculiar shape, the broad base and curving waist, that made this tree so strong. He went away, and in 1759 the new Eddystone Lighthouse was built, broad at the base and sloping upward like the trunk of the oak tree; and it stands firm to this day.—Mrs. Dyson.

THE PINE TREE.

The tremendous unity of the pine absorbs and moulds the life of a race. The pine shadows rest upon a nation. The northern peoples, century after century, lived under one or other of the two great powers of the pine and the sea, both infinite. They dwelt amidst the forests as they wandered on the waves, and saw no end of any other horizon. Still the dark, green trees, or the dark, green waters, jagged the dawn with their fringe, or their foam. And whatever elements of imagination, or of warrior strength, or of domestic justice, were brought down by the Norwegian or the Goth, against the dissoluteness or degradation of the south of Europe, were taught them under the green roofs and wild peneralia of the pine.—John Ruskin.



CYPRESS TREE AND
CYPRESS KNEES.

WHAT TREES DO.

Trees are among the most common things in nature. They either cover or have covered a large part of the earth's surface that is suitable for human life. They are the natural friends of man, yet we often treat them with scant courtesy, and sometimes regard them as of little use, if not our actual enemies. Let us study together a short and easy chapter in the open book of nature, and learn some of the things that trees do.

Trees, like animals, are living things, but there are differences between them. Trees do not eat, move or feel; animals do.

We know that animals grow or become larger. This is due to the food they eat. Trees also grow, but they use different food, and take it in quite a different way. They live upon mineral matter, that is, air, water and soil, which they change into their own substance. By this gradual addition of new material, trees become larger and larger each year, for growth is simply the increase of a living thing in size and substance.

What do trees do? I will tell you.

They help to keep the air pure for man and the lower animals. How do they do this? I have just told you that trees are constantly changing mineral matter into vegetable matter. This is their special work.

The element of the air that makes it fit for breathing is a gas called oxygen. About one-fifth of the volume of the air is oxygen, and at every breath animals take in some of this oxygen and change it to carbonic acid gas. In other words the oxygen that is breathed in, combines with the carbon in the blood and this makes carbonic acid, which is breathed out into the air in place of the oxygen taken in. There is a small amount of carbonic acid gas in the air everywhere and at all times, and the usual amount is about one part in every 2,500 parts of air.

This carbonic acid is unfit for the breathing of animals and wherever it increases in the air, even to a slight extent above the amount usually found, animals can not live. Trees and other plants prevent the carbonic acid from accumulating in dangerous quantities in ordinary air. They do this by absorbing this gas through their leaves. It is their principal food. It makes trees grow, for a little more than half of the trunk and branches of every tree is carbon, and this all comes from the carbonic acid of the air.

You know what happens when we cut a tree down and burn it. The great mass or bulk of the tree passes into the air in the form of smoke and gas. A very small part remains in the form of ashes. Burning just undoes what growth did. The burning proces was rapid, while growth was slow. But, roughly speaking, everything that went into the air when we burned the tree came from the air during its growth, and all that remained on the ground in the form of ashes came from the ground while the tree was growing.

Think for a moment how well fitted trees are for taking the carbonic acid from the air!

Suppose you carefully measure the upper surface of the leaf of an oak tree, multiply this by two, for the under surface has the same area; then multiply this by the number of leaves on the tree and you can then form some idea of the

enormous surface which the tree annually presents to the air for the removal of what to us is a dangerous gas.

Trees supply a large part of all the fuel in the world. The real wood of trees is of little or no use as food, but it does largely serve to cook our food and to protect us against cold. Even the coal dug from the earth, as well as the oil and gas now so generally used for fuel, come from vegetable matter and are largely the remains of trees in forests that flourished before man existed on the earth.

Did you ever stop and think where the heat of fuel comes from?

Trees grow, or store up, vegetable matter by absorbing carbonic acid. This is separated into carbon and oxygen before it can be used, and this separation takes place only in the presence of sunlight. With every particle of carbonic acid that is thus separated and with the new substance made by the tree for its growth, a certain portion of the sun's light and heat is absorbed. Thus, when we burn wood, the heat and light given out are just what was absorbed when the tree was growing.

I once heard a story of a boy who set out to catch a sunbeam—this may have been an interesting task, but certainly not an easy one, for a sunbeam can travel eight times around the world in a second, or 480 times in a minute. Yet the growing tree does catch the sunbeam, and holds it a prisoner until it is released by burning.

Trees give us wood, and wood furnishes us with building material, furniture, implements, utensils, tools and other useful things in great variety. Wood is one of the necessities of life. It follows us from birth to death. We are rocked in cradles made of wood; when we sit down it is in chairs or benches of wood; every day we eat from wooden tables; the papers and books that we read and study are printed on paper made from wood; whenever we ride out it is in a wagon, carriage or car made largely of wood. More than one-half of all the houses in the world are built of wood and the other half use wood for doors, floors, and other interior parts; nearly all barns are made of wood. We ship all our fruits, vegetables and many other products in baskets, crates and barrels made of wood; we pack our butter and pork, and buy our nails and salt in firkins, kegs, or barrels of wood. When we die we are put in coffins made of wood. Next to our daily food, wood is the most useful single product in the world. It is indispensable to our comfort, convenience, and happiness.

Trees furnish one of the most striking and permanent forms of beauty. What stately grace, what fine proportions, what

variety of expression, and what unconscious dignity may be seen in well developed trees. How they beautify and glorify every landscape. There is nothing more picturesque in nature than a clump or group of sycamores growing near a river bank and bending their mottled trunks and stretching their whitened arms toward the water, for which they show a peculiar fondness.

Trees improve the climate and conserve soil and water. Although the influence of trees and forests on climate is not definitely known, we are beginning to feel the effect of an all too reckless destruction of our woodlands. Springs and streams are failing that never failed before; soil drouths are more severe and protracted. Untimely frosts are more ruinous to all the more delicate fruits, and wind storms are more damaging than in former years.

The floods that cause such loss of life and property in the river valleys, have followed the cutting off of the forests from the hills and the washing of the soil by the rapid running off of the rain and melting snow, and are rapidly reducing the hills to rocky wastes and covering the fertile soil of the valleys with coarse sand and gravel. It is said that "Fire is a good servant but a bad master." The same is true of water. Uncontrolled water, like uncontrolled fire, changes a blessing into a curse.

Trees furnish safe shelter and natural resting place for birds. Birds are our best allies in fighting insects, but the removal of our forests has greatly lessened the number of insect-eating birds. Thus our insect enemies are increasing because the birds are becoming scarce.

The scarcity of birds is not entirely due to the cutting down of our trees. Many boys have the bad habit of shooting birds and robbing their nests. This ought to be stopped. The boy who shoots a bird or robs a bird's nest is robbing the farmer of a part of his crops. The best protection for insect-eating birds is plenty of trees. By planting and saving our trees we cherish and protect our birds.

Trees furnish a great variety of miscellaneous, useful products. Among these we may mention fruits, nuts, sugar, honey, tannin, pitch, turpentine, dyes and medicines.

As the only source of wood supply, trees touch the welfare of every man, woman and child, but their influence goes much farther. It underlies the great questions of soil preservation and soil fertility; the use and control of streams and rivers; the water supply of towns and cities. In short, our civilization and progress as a nation are based very largely on trees. In the face of these facts we are still slashing down our trees

most recklessly, with little or no regard to restoring them, or in any way making good the loss. There is no crime against nature that draws down a more certain or severe punishment than that of stripping the earth of all her trees.

Let us awake to the importance of planting trees and saving our forests. Let our boys and girls be incited and encouraged to gather the seeds of our most valuable trees. Begin this fall to gather chestnuts, hickory nuts, black walnuts, white oak acorns, the seed of the ash, wild cherry, locust, catalpa, etc., and keep at it till winter sets in. Plant a part of your seeds in some corner of the garden or in any rich ground where they are not likely to be disturbed. Keep the remainder in boxes of moist earth in a cool cellar until early spring and then plant them.



TYPICAL LOUISIANA AQUATIC PLANTS.
(Swimming Pool, Louisiana State Normal School, Natchitoches, La.).

You can scarcely fail to enjoy this work, and at the same time add to your knowledge and increase your love of trees.

Another thing can be done this fall. Observe, and make a note of the date at which trees lose their leaves. You will learn that the black walnut, buckeye, and other well known trees lose their leaves early in the season, while the leaves of the sugar maple, apple tree, and oak remain much later.

If you observe carefully, you will notice this interesting fact: The leaves of nearly all the different kinds of trees that have

come to us from foreign lands hang on the trees much later than the leaves of our native trees. Compare the English or scotch elm with our native elms; the Norway maple with our maples, and the European ash and linden with our ashes and linden or basswoods.—William R. Lazenby, Professor of Forestry, Ohio State University.



A LIVE OAK.

The Washington Oak, Audubon Park.

THE OAK.

A glorious oak is the old gray oak;
He has stood for a thousand years;
He has stood and frowned
On the trees around,
Like a king among his peers;
As around their king they stand, so now
When the flowers their pale leaves fold,
The tall trees round him stand, arrayed
In their robes of purple and gold.

He has stood like a tower
Through sun and shower,
And dared the winds to battle;
He has heard the hail,
As from plates of mail,
From his own limbs shaken, rattle;
He has tossed them about, and shorn the tops
(When the storm had roused his might,)
Of the forest trees, as a strong man doth
The heads of his foes in fight.

—Geo. Hill.

WOODMAN, SPARE THAT TREE.

Woodman, spare that tree!
Touch not a single bough!
In youth it sheltered me,
And I'll protect it now.
'Twas my forefather's hand
That placed it near his cot;
There, woodman, let it stand—
The ax shall harm it not!

The old familiar tree,
Whose glory and renown
Are spread o'er land and sea—
And wouldst thou hew it down?
Woodman, forbear thy stroke!
Cut not its earth-bound ties;
Oh, spare that aged oak,
Now towering to the skies!

When but an idle boy,
I sought its grateful shade;
In all their gushing joy
Here, too, my sisters played.
My mother kissed me here;
My father pressed my hand—
Forgive this foolish tear,
But let that old oak stand!

My heart-strings round thee cling
Close as thy bark, old friend!
Here shall the wild-bird sing,
And still thy branches bend.

Old tree! the storm still brave!
And, woodman, leave the spot;
While I've a hand to save,
Thy ax shall harm it not.

—George P. Morris.

Luther Burbank is the foremost plant breeder in the world. Over two thousand five hundred distinct species are in the list of the plants upon which he has worked, embracing a large and comprehensive field of operations. He has also produced more new forms of plant life than any other man, and has exerted a unique and powerful influence. These new forms of plant life may be brought into two classes—those which have added to the wealth of nations and enriched the dietary of the race—as new and improved nuts, fruits and vegetables; and those which have made the world more beautiful—the new and improved forms of flowers—*New Creations in Plant Life*, W. S. Harwood, the Macmillan Co.

The forest question involves the two great questions of wood and water. Wood is a prime necessity. Our population is rapidly increasing, while our wood supply is more rapidly diminishing. We are consuming wood three or four times as fast as we are producing it. A wood famine is almost in sight, Forest cover on mountains and hillslopes is indispensable in holding back rain water, and maintaining equable stream flow. Denuded hillsides mean an alternation of destructive floods and drouths.—*Forestry and Immigration*, June, 1907.

BEAUTIFYING RURAL SCHOOL GROUNDS.

The country school-yard is often a dreary place. The plain frame building of the rural school, too frequently little better in appearance than a cattle-shed, stands in the middle of its bare yard like a scarecrow in a corn-field after the corn has been gathered. And like the scarecrow in his deserted field, the picture is well fitted to frighten children.

There is no bit of ground where beauty is more appropriate, where it will extend a wider and more constant blessing, and where it is more easily obtained.

There are ferns for shady corners; there are many varieties of tall goldenrod that, bending in September breezes, will beckon the children back to school as to a golden way of knowledge; there are quantities of sumac which, put in clumps against the building or the high back fence, will change an

ugly barrier into a gorgeous screen; there are vines that ask only for a chance to climb lovingly over the doors and windows; there are little trees only waiting for an opportunity to spread their roots in the school yard and grow great there, entering tirelessly into the games of a ceaseless procession of scampering children, receiving into their arms the boys and accepting the confidences of the whispering girls and making for all when the sun is high a beautiful welcome shade. There are violets and snowdrops that are eager to play hide and seek in the school yard in early spring days, and in some parts of the State there are wild roses to bloom in June and lend their sweetness for all the summer to the memory of school.

Since we can so easily make the school yard beautiful, a little oasis in the lives of ourselves and of those who are to follow us, and since it is fun to do it—going out into the woods and fields for what we want—let us resolve that next fall there shall not be a single barren school yard in all the rural districts of the State.—Charles Mulford Robinson.

PROGRAM AND SUGGESTIONS

FOR

LIBRARY- DAY

Thursday, December Twenty-Second
Nineteen Hundred and Nine

Sixty-one Thousand New Books
to be Provided for

ON

Friday, Dec. 22, 1909.

HOW?

Through the earnest work of Teachers in our schools and the kindly aid of the general public.

Let there be a grand rally on this occasion and see if we cannot raise enough money to purchase an average of 1,000 volumes for each parish in the State.

We expect to have a report of this work from every section.

What will your school do?

T. H. HARRIS

State Superintendent.

Baton Rouge, La., October 30, 1909.

To the Teachers of Louisiana:

While the twenty-second day of December has been selected as Library Day and the accompanying suggestive program and material is presented, small admission fees may be charged for the benefit of the school library at each program presented during the year. If the teacher thinks best the exercises for December 22d may be in accord with the season of the year and an admission fee charged for the benefit of the school library.

The humblest rural school in the State can and should have a school library, and the teacher should make the library enter into the daily life of the child in school and out of school.

Let us make the school library record of the current session worth while both in the number of new volumes added to each school and in the use made of the volumes now on hand.

Sincerely yours,

T. H. HARRIS,

State Superintendent.

The ideal schoolhouse must combine the best qualities of each of the foregoing school sites. The accomplishment of this result furnishes work enough for School Board, Superintendent, School Trustees, School Improvement Leagues and patrons.

Louisiana, as a whole, has done magnificent work in improving her school sites and schoolhouses.

But the questions for you are:

1. What is my parish doing?
2. What is my ward doing?
3. **WHAT IS MY COMMUNITY DOING?**
4. Have we a wide-awake School Improvement League.

SUGGESTIVE PROGRAM FOR LIBRARY DAY.

1. Song by the school (on which there has been previous drill),
2. Roll call, each pupil giving in response some brief quotation about books.
3. Short address by teacher
4. Music by orchestra, or song by school.
5. Select reading by a pupil who is a good reader.
6. Essay on the selection of reading matter.
7. Music, vocal or instrumental.
8. Review of some book by an advanced pupil.
9. Remarks by members of Board of Trustees.
10. Recitation.
11. Ten minutes address by the Superintendent, resident minister, lawyer or doctor.
12. For additional suggestions see Annual for 1908.

PLANS FOR RAISING MONEY FOR LIBRARIES.

1. Interest some philanthropic citizen to make a proposition to give as much money toward the library as the school will raise.
2. Under the law the school board is committed to such a proposition to the school.
3. Interest the community in your library and make a canvass among your citizens for subscriptions for a library.
4. Give a school entertainment or a series of entertainments and charge a small admission fee.
5. Have a series of spelling matches with other districts, to which a small admission fee is charged.
6. Secure a good lecturer with whom you can clear some money on the sale of tickets.
7. Have all pupils agree to contribute a penny each week during the term.
8. In all rural communities eggs are plentiful, and each pupil would gladly contribute one egg a week. These can readily be transformed into cash. Try it.
9. Secure as many good books as possible by donation.
10. Celebrate national holidays and commemorate birthdays of notable men, charging a small admission fee.
11. To arouse interest have pupils sign a petition and request for books and pledge themselves to read them.

PRACTICAL POINTS ABOUT SCHOOL LIBRARIES.

1. Get a small collection of books and add to it gradually.
2. If books are donated, accept only those which are useful and interesting. Do not take as a gift anything unless it is bright, attractive, and, above all, readable.
3. Have a book case of some kind, if you can get nothing better than a shoe box made neat with paper, paint and a curtain.
4. Have the book shelves or case put up with screws in a convenient part of the school room. The library should be as essential a part of school furniture as the blackboard.
5. Number and mark each book plainly. Do not cover the new books. An attractive cover will do much to draw the attention of the pupils, and will be read when a covered book will be neglected. A book worn out with use speaks well for its usefulness.
6. Have a regular place for each book, and when not in use see that the book is in its place.
7. Have some one, as an older pupil, act as librarian. Have stated times for drawing books, and stated length of time for keeping them. Keep record of all books drawn and returned, and by whom.
8. For blank form for use of librarian, see List of Library Books, issued by the Department of Education, 1909.
9. Use the books constantly. They will afford excellent supplementary work in language, geography, history, and almost any study.
10. Encourage children to keep note books, in which they may copy favorite passages from books they have read. Frequently ask pupils to give or write briefly the substance of some book which has interested them.

THE BEST WAY TO RAISE MONEY FOR PUBLIC SCHOOL LIBRARIES.

In this day when education has reached a higher standard than ever before in the world's history, or at least the history of America, the question of libraries is one which agitates the mind of every wide-awake teacher. Good reading is so important to the advancement of pupils that every interested teacher feels that he or she must devise some means to obtain a library.

One great hindrance is our patrons do not know the advantage of public school libraries and think them a useless ex-

pense, especially those of our district schools. It is almost useless for a teacher to try to obtain a direct appropriation for the purpose of libraries, but there are ways by which we may appeal to them indirectly and accomplish our desires.

First, we may carry out the program for Library Day. The children usually enter into it with a will, and the teacher may inspire each one to earn enough money beforehand to buy a book for the library. She can also invite other neighboring schools to attend the exercises and the teacher will feel under obligation to present either a book or the value of one in money. Entertainments with silver offering at the door, or festivals may be given any time during the term. On such occasions a beautifully dressed doll may be purchased and given a name. Then write a long list of names, including the one given the dollie, and charge a small sum for each guess, offering the doll to the one who guesses its name. This will often bring a surprising amount through the pleadings of our babies. Other similar exercises may be contrived.

Then there is the celebration of Mothers' Day (or Improvement League Day), a new institution in our public schools. A short program may be arranged and the mothers all invited to attend and bring a book. If they are interested they will often comply with the request to please the children, or a small admission may be charged.

Lastly, some one is always paid to keep the school room in a sanitary condition. This work may be done by the teacher and pupils and the money appropriated for the library. Why can we not have them? Every energetic teacher may have what he will.—Anna M. Peters, Webster, W. Va.

In the rural schools of the State there is always a balance left from the dollar incidental fee. This should be turned over by the local trustees to the library fund.

FURTHER SUGGESTIONS.

A good encyclopedia is very useful in the school room, and while it may not be possible or even desirable in many schools to purchase the large cyclopedias, there are several smaller reference books that will be of great assistance to the pupils. Among these I may name Champlaine's Cyclopedic of Persons and Places and Common Things, published by Henry Holt & Co., New York; The Student's Reference Work, The Howard-Severance Co., Philadelphia, and the numerous abridged dictionaries.

In cities, towns and villages where already there are fairly good libraries it may be more desirable to make an effort for some special purpose, as the furnishing of supplementary reading for the different grades, the purchase of cyclopedias or a set of scientific or historic works dealing with special subjects in which more advanced students are interested. There will always be a need somewhere.

Not only should the school provide instruction for the youth of the district, but the school house itself should become the center of the best life of the community—intellectual, moral, social. With this end in view there should be a good collection of books, magazines and reference works at every school house and a hall where public meetings can be held. However, before this last named desirable conditions can be reached there will have to be a very great change in the architecture of many of our school houses, but it is not only possible, but a duty which each teacher owes to the public to place good literature before her pupils, and this can be done at once.

The hundreds of members of the Louisiana School Improvement Leagues now have an opportunity to demonstrate the usefulness of these organizations. Let "books" be the watchword now and "trees" next January.

In connection with the observance of Library Day it may be found convenient in many places to have a kind of harvest home celebration. It is true, it is a little late in the season to have such an observance, but a good many things such as fruits, vegetables, grains, etc., can be brought into the school room and, when tastefully arranged, will add interest to the occasion.

We know of a town in which considerable attention was given to growing chrysanthemums, and late in the fall a large number of these beautiful flowers were collected and an admission fee charged for seeing them, thus realizing a considerable sum for the school library. Some of the plants which were donated for that purpose were sold at a good price also. You can do something of this kind.

Superintendent O. J. Kern, of Rockford, Ill., who has rendered such acceptable service in the educational campaigns in that State, says he would add to the three Rs two Ps, which, being interpreted, he says, means, "Paint Houses" and "Plant Trees." Good suggestions for our people in Louisiana, as well

as for those in Illinois. A good work for the School Improvement League.

Why can you not have a chrysanthemum exhibit for the benefit of your school library, as suggested in another paragraph?

Of course you will accept all books donated, but such donations should be carefully examined to see if they are suitable for a school library. Sometimes, unwholesome literature has crept in in this manner, and the teacher should continually be on her guard in this respect.

That old reliable paper, *The Youth's Companion*, should be on the reading table in every school in Louisiana. Teachers, see that your pupils have access to it.

I am of the opinion that a few good books, carefully selected, purchased through the efforts of the teacher and pupils will be more appreciated and will do more good in a community than a fine library placed in the school room by the board of education without any effort on part of pupils or teacher. We are always most interested in that on which we have expended time and effort. Of course we want the aid of the board, as provided by law, but a desire for books is better than the mere having without using them.—Adapted from West Virginia Library Day.

QUOTATIONS.

Some books are tasted, others swallowed, and some few to be chewed and digested.—Bacon.

If time is precious, no book that will not improve by repeated reading deserves to be read at all.—Carlyle.

The love of books is a love which requires neither justification, apology nor defense.—Langford.

Laws die, books never.—Bulwer-Lytton.

There is no past, so long as books shall live.—Bulwer-Lytton.

As good almost kill a man as kill a good book; who kills a man kills a reasonable creature, God's image; but he who destroys a good book kills reason itself, kills the image of God, as it were, in the eye.—Milton.

A small number of choice books is sufficient.—Voltaire.

A great library contains the dairy of the human race.—Dawson.

Books are embalmed minds.—Bovee.

Books are life-long friends whom we come to love and know as we do our children.—S. L. Broadman.

Books—lighthouses erected in the great sea of time.—Edwin P. Whipple.

No entertainment is so cheap as reading, nor any pleasure so lasting.—Lady Mary Wortley Montagu.

Books are the visible souls of men, and a good book, like a good life, is filled as a lamp, with light.—Dr. Geikie.

It does not matter how many, but how good, books you have. It is much better to trust yourself to a few good authors than to wander through several.—Seneca.

Those authors who appear sometimes to forget they are writers, and remember they are men, will be our favorites. He who writes from the heart will write to the heart.—Isaac Disraeli.

We shall one day learn to supersede politics by education. What we call our root-and-branch reforms of slavery, war, gambling, intemperance, is only medicating symptoms. We must begin higher up; namely, in education.—Emerson.

What a sense of security in an old book which time has criticised for us.—Lowell.

That is a good book which is opened with expectation and closed with profit.—Alcott.

Our high respect for a well read man is praise enough for literature.—Emerson.

Books are the best things, well used; abused, among the worst.—Emerson.

All that mankind has done, thought, gained or been is lying in magic preservation in the pages of books. They are the chosen possession of men.—Carlyle.

Consider what you have in the smallest chosen library. A company of the wisest and wittiest men that could be picked out of all civil countries in a thousand years have set in best order the results of their learning and wisdom. The men themselves are hid and inaccessible, solitary, impatient of interruption, fenced by etiquette; but the thought which they did not uncover to their bosom friends is here written out in transparent words to us, strangers of another age.—Emerson.

I love vast libraries; yet there is a doubt,
If one be better with them than without—
Unless he use them wisely, and, in deed,
Knows the high art of what and how to read.

—John G. Saxe.

When I would know thee * * * my thought looks
Upon thy well-made choice of friends and books;
Then do I love thee and beho'd thy ends
In making thy friends books, and thy books friends.

—Ben Johnson.

All 'round the room my silent servants wait,
My friends in every season, bright and dim.

—Barry Cornwall.

SELECTING THE BOOKS.

The selection of a list of books for a district school library requires care and the exercise of intelligent discretion. The problem is to get an adequate variety of equally helpful books with the expenditure of a limited amount of money.

Some books are worthless while others are positively harmful, and in the district school library the influence of the latter is doubled and the former robs the youth of the school of time that will never again avail them so much.

The most common error in the make-up of district school libraries is the preponderance of adult books to the neglect of the more juvenile minds. If the child has an adequate supply of properly adapted reading at his arm's length from the time he is six till he is sixteen, directing his reading from that time on will be an easy matter. In reading as in many other things coming out right depends largely on starting in right.

For beginning readers the story ranks easily first, but good as it is the story can easily be overdone. It is a grave mistake to create an insatiable appetite for mere "stories." The dead level of the usefulness of the story is easily reached and it is frequently necessary to put a check upon children especially inclined to this line of literature.

Possibly biography should be ranked second in the scale of merit. Children are born hero-worshippers and rarely tire of hearing of the deeds of good men and great. In this care should be exercised in the character of the heroes the children are permitted to hold up before them. The exploits of outlaws and bandits are exciting and quickly absorb the boyish fancy, and just as quickly disquiet the boyish mind and shatter whatever foundation may have been laid for saner things.

Animal life is next in importance and usefulness. Stories of this character rarely fail to interest and when written by men of scientific attainments they are both instructive and beneficial ethically. The excellent books on animal life, and forestry and agriculture as well, now becoming so numerous, are of the highest value in putting the pupil in harmony and

sympathy with his environment, thus fitting him for happier and better living.

Books of travel also afford a wide range of useful material and are generally popular with the younger as well as the older pupils. The wise traveler finds abundant means to instill seed ideas of architecture, sculpture, painting, mechanical industries, engineering, geographic diversities, social life and a score of other realms. This field is limited only by the amount of time that may be devoted to it.

It is essential that the range of the child's reading should include a due proportion of verse, beginning with the rhymes of Mother Goose and continuing through Longfellow's *Hiawatha* and Tennyson's *Locksley Hall*. Verse cultivates the finer sensibilities and inspires a love for the beautiful. It is worthy of note that by far the greater part of the literature that has lived down through the ages is preserved in verse.

While in juvenile literature the most recent years have been far more prolific than all the ages past, but here as in adult literature it would be a serious error to omit the classics, such as *Robinson Crusoe*, *Alice in Wonderland*, *Grimm's Fairy Tales*, *Child's Garden of Verses*, *Pilgrim's Progress*, *Gulliver's Travels*, *King of the Golden River*, *Story of Little Nell*, *John Halifax*, *Silas Marner*, *The Wonder Book*, and *Last of the Mohicans*. In fact it is hardly possible to make the mistake of getting too many of the well tried classics. It is the abundance even of the best books that perplexes us.

The list of books found in the Institute Program for 1908 has been very carefully selected for a district school library, having respect to the different grades therein, and while other equally as good books can be found, this list is suggested as a type of the class of books best suited for a school of this kind.

MAGAZINES AND NEWSPAPERS.

Besides good books, good magazines and good newspapers have a place in the school room. These should be carefully chosen, however, and properly used. There is nothing more appropriate in the school than some of our splendidly illustrated publications, and I would again call attention of our teachers to the excellent offer of Doubleday, Page & Co., which is as follows:

Desirable Magazines for Every School.

"The World's Work"	\$3.00, to schools	\$1.70
"Country Life in America"	4.00, to schools	3.10
"The Garden Magazine"	1.50, to schools	.80

Combination rate to Louisiana\$5.60

The above may be ordered separately, provided the magazine be ordered addressed to the school.

The rate secured by the State Superintendent is for twelve numbers each of "The World's Work," "Country Life in America" and "The Garden Magazine." This means that even when school is not in session, the magazines will still be regularly delivered to any point designated. For instance, a home convenient to the pupils, the homes of the school committee, the depot of a traveling library, or the public library.

THE LIBRARY IN PUBLIC SCHOOL WORK.

Theodore B. Noss, president of State Normal School, California, Pa., says in part on the above subject:

"Education is in constant need of readjustment to meet ever changing conditions. For this reason the library at the present time assumes an importance as an educational force never felt before. This is the result of various causes, such as the immense increase in the supply of good books in cheap form, the rapid increase of the urban population, the disposition of men and municipalities to found libraries for public use, and especially the recognition of the fact that education should deal more with things of intrinsic interest and of larger meaning—such as may be found in literature, nature study, and art—and less with mere formal studies that have a more or less conventional value. Much of the pupil's time has been used in teaching things which we will never need in geography, arithmetic, grammar etc., and things which the teacher has never needed except for examination. The hungry child has asked for bread, and we have given him a stone. He has said to the teacher: 'What shall I do to be saved from failure and poverty and ignorance?' The teacher's reply has been: 'Make the verb agree with the subject in number and person,' or 'multiply the numerators together for a new numerator, and the denominators together for a new denominator.'"

ENVIRONMENT A MOLDER OF CHARACTER.

The other day I saw a group of boys carefully scanning a theater poster. The picture showed a man in the act of plunging a dagger in the throat of a woman. The boys did not run or scream. But their eyes were big and the intensity of their faces showed that the horror of the picture was not lost upon them. Near by were two younger children playing together in the gutter. Their faces were smeared with the mud made by the dish water running over the sidewalk, and the

children were amusing themselves floating cigar stumps in the disgusting pool.

Reflecting upon that sad sight there came to mind other childhood scenes. There stood out in memory a little lake that nestled among the hills where sweet-breathed cattle browsed and where the branches of great trees were mirrored in crystal waters. There were the boat-house and the swimming-hole and the spring-board; and there were summer nights, too, when the leaves were still and stars were bright and the spirit of the child looked up in silent wonder.

In the race of life, in the contest of physical endurance, in the moral tests that come, that child has not a fair chance who has sprung out of the mud of the streets.

To know the breath of lilacs and the rustle of autumn leaves, to be up with the lark, to wet one's feet in the dew of the pasture, to go to bed with the song of the whip-poor-will—these memories are like garden angels.

The children whose horizon is a brick wall, who must play on cobble stones and go swimming in the canal and be chased by the police, if they do not grow up to be ideal citizens, shall we, of holier memories, sit in judgment upon them? Shall we not remember their bonds?—H. S. Bigelow.

State Superintendent Joyner of North Carolina: "No educational equipment can be complete without a library. A library of well selected books, even though limited in number, will double the efficiency of any school, will be a breath of fresh air or a gleam of glorious light in any community, will quicken ambitions and arouse aspirations and set in motion forces, the power of which no man can estimate."

(In the October number of the Louisiana School Review is a picture and short biographical sketch of Superintendent Joyner. Read it to your school.—Editor.)

TWO SCHOOLS.

I put my heart to school

In the world, where men grow wise.

"Go out," I said, and learn the rule;

"Come back when you win a prize."

My heart came back again.

"Now where is the prize?" I cried.

"The rule was false, and the prize was pain,

And the teacher's name was Pride."

I put my heart to school
In the woods, where the veeries sing,
And brooks run cool and clear,
In the fields, where wild flowers spring,
And the blue of heaven bends near.
"Go out," I said, "you are half a fool,
And perhaps they can teach you here."
"And why do you stay so long,
My heart, and where do you roam?"
The answer came with a laugh and a song—
"I find this school is home."

—Henry Van Dyke.

A TREE OF HAPPINESS.

I have planted a Tree of Happiness
In ground all wet with tears;
I have prayed to God that His sunshine
May fill the lonely years.
I have planted a tiny seed of Hope,
And then a seed of Trust.
They grow in that sweet sunshine,
And blossom, as they must.
I show my flowers to the sorrowing,
To those who suffer pain;
And my tree grows strong in sunshine,
And pure and sweet in the rain.

—L. T. Mulligan.

LIGHT.

"The night has a thousand eyes,
And the day but one;
Yet the light of the great world dies
With the dying sun.
The mind has a thousand eyes,
And the heart but one;
Yet the light of a whole life dies
When love is done."

OUT OF DOORS.

The pleasantest place for a boy to be
Is out where the grass is growing;
As glad and free as a king is he,
Far up where the wind is blowing.

He's one, with the bee and the butterfly,
The robin and he are brothers;
His tent is the sky, so blue and so high.
Swept clean of the dust that smothers.

The treasures he seeks are a wayside flower,
A whistle shaped from the willow,
The diamond shower, the gold of an hour,
And mosses and ferns for a pillow.

The lessons he learns are greater than books,
And truer than words of sages;
He reads in the brooks and violet nooks
The marvelous epics of ages!

—Willis Warren Kent.

GREETING SONG.

(Adapt some common tune.)

Parents dear and friends so true
Gladly now we welcome you!
Happy hearts and voices, too,
Blend in joyful song!
As we sing our merry lay,
Bidding every fear away,
Joyous will we be today,
And our strains prolong.

Hearty welcome we extend
To all those who now attend,
Who their cheering presence lend
In this rugged way.
Progress quickened we will show,
Hoping you can well bestow
From your glad hearts' overflow,
Meed of praise today.

Welcome! Welcome! While we sing,
Grateful hearts with us bring,
Giving thanks for everything
Which your love bestows.
Onward, upward, be our aim,
Wreaths of bright, enduring fame.
Each would twine about his name
Ere life's evening close.

—Selected.

RECITATION—PROMOTED.

Last night I was a little boy;
You'd scarcely know me from Bess;
The silly looking kilts I wore
Were so much like her dress.
But won't I s'prise them all today—
My uncles and my aunts?
For I am four years old, and I
Have pockets in my pants!

I don't want any han'kerchief;
I need my pockets all
To keep my chalk and marbles in,
My cookies, and my ball;
I need them for my specimens—
My bugs, and worms, and ants.
Hurrah! I'm 'most a man today,
With pockets in my pants.

—Mrs. Elizabeth Rosser.

PROGRAM AND SUGGESTIONS

FOR

BIRD DAY

Friday, March Twenty-Fifth, Nineteen
Hundred and Ten.

Baton Rouge, La., Oct. 30, 1909.

To the Teachers of Louisiana:

Until very recently many birds thought injurious to fruits and crops have been ruthlessly slain by farmers and others because their value to the farmer was not known. It is now definitely known that even such birds as hawks and owls are deserving of protection at the hands of the farmer, and that of the fifty-odd species of hawks and owls in the United States only six are destructive of game and poultry. All of the other species destroy millions of grasshoppers, mice rabbits, rats and other rodents injurious to crops.

The object of Bird Day is to encourage the boys and girls to know and to love the songsters, to appreciate the beauty of the birds and to study their economic value to the farmers of the country in order that they might be given that protection which they richly deserve as the friends and helpers of man.

The game birds of Louisiana once so numerous are fast disappearing and some of them have almost become extinct. Bird Day should teach the value of the preservation of the game birds not only as source of food supply but as destroyers of injurious insects and weeds. It would therefore be appropriate to teach the necessity of game laws, the object and functions of the Board of Commissioners for Protection of Birds, Game and Fish, and the laws of Louisiana bearing on these subjects.

Sincerely yours,

T. H. HARRIS,
State Superintendent.

SUGGESTIONS FOR PROGRAM.

Birds as Insect Destroyers.
How to Make a Bird Home.
Nesting Boxes.
Bird Legends.
Bird Ways.
The Economic Value of Bob White.
School Gardens.
Home Gardens.
What I Planted in My Garden.
Flower Legends.
The Wild Flowers of Our Districts.

SYNOPSIS OF THE ACT (No. 278 OF 1908),

Creating the "Board of Commissioners for the Protection of Birds, Game and Fish" of this State and defining their duties and empowering them to appoint game wardens and such other clerks, officers and assistants as may be necessary and to provide the means of carrying this act into effect.

1. The Governor, by and with the advice and consent of the Senate, is to appoint three members; one from each of the northern, eastern and central portions of the State. They are to serve for four years; vacancies occurring are to be filled by the other two members, provided the selection be made from the portion of the State in which the predecessor resided.

2. The domicile shall be in New Orleans, and the Board shall hold meetings on the first Monday of March and such other occasions and places as may be deemed necessary.

3. It shall be the duty of the Commissioners to protect the game and fish of the State and carry out the laws relating thereto; to collect and classify data relating to game and fish; to report annually to the Governor, and the Governor shall lay copies of this report before the Legislature.

4. The Commissioners shall appoint a chief warden to supervise the parish wardens, and also appoint one or more wardens for each parish of the State.

5. The wardens may be summarily removed by the Board of Commissioners; it is the duty of the wardens to carry out the laws for the protection of game and fish and they are empowered to arrest violators of the law without warrants. Forfeited bonds in cases above stated go to the Game and Fish Commission. (All other forfeited bonds in the State go to the public school fund.)

6. The maximum salary allowed wardens is \$800; said salaries to be paid out of the proceeds of hunting licenses and appropriations of the State Legislature, or police juries.

7. Wardens are authorized to make seizures and searches for game and fish killed or caught in violation of the law and to give them to charitable institutions or to destitute sick.

8. Hunters must have licenses in their possession; residents pay \$1 and non-residents \$25, payable to tax collector.

9. Expenses and per diem of the board and their employees are paid from the general fund. No amount is fixed by law.

(For laws governing the protection of game and fish see Bird Day Annuals for 1907 and 1908.)

A LESSON FROM THE SPARROWS.

I awakened one morning early,
The great city slept near by,
And the first faint coming of daylight
Flushed pink in the eastern sky.

The cool, sweet breeze stirred gently,
The trees had revived again,
And they lifted their green, wet branches
Refreshed with the cool night rain.

Earth lay in a calm, still waiting
Before it awoke to toil,
And the new day breathed its blessing
On the children of the soil.

As the dawn grew clear and stronger,
And the rosy east grew bright,
I thought of the hearts that still wished for
The silence and peace of the night—

Hearts that were faint in life's battle,
That had lost their faith and trust,
That saw not the glory of living,
But dragged out their lives in the dust.

And lo! as the sun rose brighter,
From under the eaves I heard
The first faint twitter of rapture
From the heart of a little bird.

And another and then another
Caught up the joyful lay,
And louder swelled the chorus
As they greeted the new-born day.

They were only the Father's sparrows,
But they knew His tender care,
For they fall not to earth without Him,
Or flit in the sunlit air!

And I thought if we would but remember
The same Lord guides our days,
We, too, would greet each new morning
With a Paean of joyful praise!

—Selected.

THE ORIOLE'S SONG.

Tangled and green the orchard way,
Breath of blossom, and waft of breeze;
Dew-wet vistas of breaking day,
Drifted snow on the drooping trees.

Through branching bloom, and mist of green,
Now here, now there, upon the wing,
Flame of oriole faintly seen—
Vision fair of the winsome spring.

A low-drawn cadence, thrilling, low,
A call, a charm unto the ear;
A forest brook in golden flow,
A love song to the waking year.

And all the gladness of a young May
Is touched with pathos at the strain;
The melting music of thy lay
Our heart's deep secrets wake again.

—Shiela.

THE SWALLOW AND HER NEST.

A swallow in the spring
Came to our granary, and 'neath the eaves
Essayed to make her nest, and there did bring
Wet earth, and straw, and leaves.

Day after day she toiled
With patient art; but, ere her work was crowned,
Some sad mishap the tiny fabric spoiled,
And dashed it to the ground.

She found the ruin wrought;
Yet not cast down, forth from her place she flew,
And with her mate fresh earth and grasses brought,
And built her nest anew.

But scarcely had she placed
The last soft feather on its ample floor,
Than wicked hands, or chance again laid waste,
And wrought the ruin o'er.

But still her heart she kept,
And toiled again; and, last night hearing calls,
I looked, and lo! three little swallows slept
Within the earth-made walls.

What trust is here, O man!

Has hope been smitten in its early dawn?
Have clouds o'ercast thy purpose, trust, or plan?
Have faith, and struggle on!

—R. S. S. Andros.

HOW THE WOODPECKER KNOWS.

How does he know where to dig his hole,
The woodpecker there on the elm tree bole?
How does he know what kind of a limb
To use for a drum and burrow in?
How does he find where the young grubs grow—
I'd like to know?

The woodpecker flew to a maple limb,
And drummed a tattoo that was fun for him,
"No breakfast here! It's too hard for that,"
He said, as down on his tail he sat,
"Just listen to this: rrrr rat-tat-tat!"

Away to the pear tree, out of sight,
With a cheery call and a jumping flight,
He hopped around till he found a stub,
"Ah, here's the place to look for a grub.
'Tis moist and dead—rrrr rub-dub-dub."

To a branch of the apple, Downy hied,
And hung by his toes to the under side,
"Twill be sunny here in this hollow trunk;
It's dry and soft, with a heart of punk,
Just the place for a nest—rrrr runk-tunk-tunk."

"I see," said the boy; "just a tap or two,
Then listen as any bright boy might do,
You can tell ripe melons, and garden stuff
In the very same way—it's easy enough."

—William J. Long.

If we do not have all the robins we want it is because we do not know enough about rearing them or are not willing to act on our knowledge. A pair of living bird's eggs, with proper care by the children of the country, could produce in ten years a pair for every child in the country. With ten years as the life of a robin, allowing that each pair of robins rear ten robins every year, and making no allowance for losses, we shall have:

1st year, (2 + 10).....	12 robins.
2d year, (12 + 60).....	72 "
3rd year, (72 + 360).....	432 "
4th year.....	2,592 "
5th year.....	15,552 "
6th year.....	93,312 "
7th year.....	559,872 "
8th year.....	3,358,232 "
9th year.....	20,149,392 "
10th year.....	120,896,352 "
50th year.....	1,616,400,000,000,000,000,000,000,000,000,000,000.

From "Nature Study and Life"—Ginn & Co.

THE RELATION OF BIRDS TO AGRICULTURE.

Frank M. Miller, president of the Louisiana Game Commission, recently gave to the press a very interesting article on "The Relation of Birds to Agriculture," which was prepared by Professor Edward Howe Forbush, State ornithologist of Massachusetts and field agent of the National Audubon Societies. Professor Forbush's article, which deals very fairly and conservatively with the relation of birds to agriculture, is as follows:

The relations of birds to agriculture are not yet fully understood. Nevertheless, it is safe to say that the great majority of birds that frequent farm lands, as well as most of the species living in inhabited regions, are either beneficial to man or neutral, rather than injurious. Even those that the farmer considers as among his chief enemies are often found to be far more useful than harmful when their food habits are studied with scientific care.

Whenever a bird attacks poultry, fruit or grain, its ravages are conspicuous. But many birds may feed on the enemies of fruit, grain or poultry without attracting our attention in the least. Therefore the harm that birds do is often exaggerated, while the good they perform is either unnoticed or underestimated.

It sometimes happens that the investigator finds so many factors entering into the food relations of a bird that it is difficult to determine whether or not the species is beneficial. But no family of birds can be regarded as wholly inimical to the farmer, and only a few species in any country can be regarded as injurious. Species vary greatly in importance and useful-

ness when looked at from the standpoint of the agriculturist. Some appear to be of little or no economic worth, while the services of others seem absolutely essential to successful husbandry, horticulture or forestry.

The chief function which birds perform among the forces of nature is that of filling the biologic balance. Birds form a mighty standing aerial army for the regulation of the numbers of inferior animals. Their scouts continually spy out the land and their swift battallions assemble at threatened points to check uprisings of insects or other pests or to reduce the too numerous seeds or fruits of plants.

In such beneficent ways birds work for the general good. They are well fitted by nature for their peculiar office. Their flight is remarkably swift and well sustained. Their sight is keen and telescopic, and they are endowed with a tremendous capacity for devouring, digesting and assimilating food. The muscular exertion put forth by birds in their everyday occupations is extreme. They are so energetic and active that they need far more food than is required by mammals. It is not unusual for the growing young of certain species of birds to consume daily an amount of food equal to their own weight, and the quantity eaten by many land birds is so large that when they forage in flocks on the crops of the farmer they cause excessive loss; but the severity of such losses only serves as an indication of the amount of good that birds do in devouring the destructive insect enemies of the same crops. Huxley tells us that were the increase of a species of aphid to go on unchecked, the progeny of a single female in one year would equal in bulk the population of the Chinese empire. Birds operate to prevent this increase. Many instances are on record where birds, gathered from far and near, have saved trees or crops from destruction by insects or other pests. If the birds were all destroyed and their repressive influence on the increase of insect life thus removed, an unparalleled increase of insects might be expected to follow. We may readily imagine a birdless earth, carpeted by insects engaged in destroying all vegetation, thus bringing famine and death to man and all other animals. Probably the results of the extinction of birds would not be so simple and perhaps not so serious as this. Nevertheless the local destruction and extirpation of birds has been followed in all recorded cases by an increase of pests, a consequent serious injury to vegetation, and even at times by famine among the inhabitants.

The investigations regarding the food of birds made by the Bureau of Biological Survey of the United States Department of Agriculture have proved conclusively that birds feed very

largely on many of the most destructive insects of farm, field and forest, as well as on the seeds of pernicious weeds. The capacity birds show for such food is indicated by the following record of the contents of a few birds' stomachs:

One yellow-billed cuckoo, 250 tent caterpillars; two yellow-billed cuckoos, 217 fall webworms; two flickers, 800 ants; one nighthawk, 500 mosquitoes; one nighthawk, 60 grasshoppers; one nighthawk, 1,000 ants; three mourning doves, 23,000 seeds (largely weed seeds); one snowflake, 1,500 weed seeds.

When it is considered that the contents of a stomach represent but a single meal, that the stomach of a bird is ordinarily filled many times daily, and that large numbers of birds can be assembled quickly where they are most needed, the capacity of the bird for good becomes evident.

Every farmer should know what families of birds are of most service to him, for he will be able to do something intelligently to protect and increase such birds upon his land.

Birds of Orchard and Woodland.

Those birds that live largely upon the enemies of trees are indispensable to man, for it is impracticable, if not impossible, for him, by artificial means, to preserve and protect the trees from their enemies. Something he may do within the narrow limits of the orchard, but he is practically powerless to conserve the forests without the aid of birds and other natural enemies of insects and rodents.

Many birds that feed on seeds vie with the squirrels in distributing seeds and so rank high as forest planters. Others prune the trees by nipping off buds. Still others regulate the increase of certain insects that otherwise would prune the trees too closely, but that, when controlled by birds, exert only a moderate beneficent, restraining influence on the exuberance of plant growths.

First among the birds that feed on woodeating insects is the woodpecker family. This family comprises a highly specialized group of birds the more typical of which are especially fitted for digging into the trunks and limbs of trees and extracting ants and other wood-boring insects from their hiding places. The utility of the woodpeckers is now quite generally recognized by orchardists and foresters, both here and abroad. The common Downy woodpecker of the Eastern States is one of the chief enemies of timber ants, wood-boring beetles and moths, codling moths and certain plant lice and scale insects.

The nuthatches and the titmice, or chickadees, are nearly, if not quite as important as the woodpeckers, for they feed very largely on destructive insects that hide in crevices in the bark, in holes or cavities or burrow within the buds, twigs

or fruit. The common chickadee is one of the most serviceable of all. The woodpeckers, nuthatches and chickadees are doubly useful, because they guard the trees during the entire year. When, in winter, most other birds are absent, these busy gleaners are searching every crevice and cranny for the hibernating larvae, pupae or eggs of insects that have escaped the summer birds. The chickadee ranks among the greatest enemies of such fruit tree pests as the codling moth, the tent caterpillar, the gypsy moth and the canker worm, and it is also destructive to bark borers and scale insects.

Among the birds that are essential to the trees are the creepers and the kinglets, the warblers, vireos, tanagers, orioles and the jays, all of which excel in guarding the limbs and foliage of trees against the attacks of many of the greatest insect pests known. When the developing insects escape all these and, assuming wings, launch out into the air they are met by the flycatchers that, sitting on some vantage point, pursue and catch them in the air, while above and around all, sweep the swift swallows and nighthawks that pursue their prey even into the upper regions of the air. On the ground below, the thrushes, sparrows, blackbirds and towhees pick up the insects that fall to the ground, or they search for insects among the dead leaves on the forest floor. All these families of birds together form the inner and outer circles that guard the tree, and all should be protected by the farmer.

Birds of the Field and Garden.

The services of birds in the field are quite as essential as in the forest. The task of protecting the grass in the field from the attacks of insects is quite as impossible for the farmer as that of protecting the forest trees. Birds must always be relied upon as protectors of the grass crop, from locusts, grasshoppers, leafhoppers, cutworms, grubs and most of the injurious insects of the fields. Prof. Herbert Osborn has shown that on an acre of pasture land there are often a million leafhoppers, which consume, unnoticed, as much grass as a cow. Were these not held in check by the birds which eat them they might increase so in numbers as to consume all the grass. Instances are on record where the absolute failure of the grass crop has followed the destruction of birds by the farmers. Wherever the numbers of field birds are greatly reduced, insects increase and the grass crop suffers in proportion.

In the field, as in the forest, birds find hidden nesting places, and an opportunity to rear their young in safety, but the young suffer from the effects of the early grass cutting, which exposes them to the burning sun, and to the attacks of their

enemies, even if they are not killed by the operations of hay-making. Nevertheless, the first broods of the early-nesting bird usually are on the wing by haying time.

In the garden, on the contrary, birds find little chance to breed, for the operations of tillage tend to destroy their nests. Now and then a sparrow may safely rear her young in a potato hill, but few birds can nest in the garden or cultivated field, except where small fruits or vines are planted. For this reason birds are less serviceable in the garden than in the field or forest. Birds which breed in orchard or woodland are nevertheless of greater utility in gardens or cultivated fields near by, and the birds of the air, including the swallows, martins, swifts and nighthawks, perform some of their most beneficent services unnoticed, while skimming over garden and field. Doves, sparrows, blackbirds, larks, quail and other ground-feeding birds destroy enormous quantities of weed seeds during all season when these seeds are to be found. Prof. F. E. L. Beal estimates that the tree sparrows of Iowa eat 875 tons of weed annually, and the experts of the Biological Survey have computed that native sparrows save the farmers of the United States \$35,000,000 each year in this manner.

The thrushes are valuable birds from the standpoint of the husbandman. Chief among them is the American robin. This bird, although noted for its fruit-eating propensities, is nevertheless one of the most useful species on the farm. It feeds mainly on fields and cultivated land, where it finds destructive grubs and cutworms and many injurious beetles, in addition to the common earth worm, which is only one item on its bill of fare. The favorite bluebird eats very little fruit, and, like the robin, feeds on field insects as well as on caterpillars.

Wrens are among the best helpers in both orchard and garden. The great sparrow family is valuable not only in keeping down weeds, but also in destroying insects. The native sparrows are absolutely indispensable to the man who cultivates the soil, as they hold in check some of the worst pests of field and garden. Blackbirds of all species are pre-eminent as destroyers of grubs, grasshoppers and caterpillars, and even the crow, although often a nuisance to the farmer and a destroyer of small birds, is a very necessary evil in grasshopper time.

The bobolink, although a pest to the rice farmer of the South, is a blessing in the fields of the North. Mourning doves are among the most voracious of weed destroyers. Bobwhites and meadow larks are now generally believed to rank higher than all the other birds of the farm as destroyers of insect and weed pests of the garden and field. It will pay the farmer to

protect all of the above mentioned birds, with the possible exception of the crow.

There are many birds besides the bobwhite on the game list that are worth more to the farmer alive in his fields than the small sum he can get for them in the market. One farmer who has carefully observed the habits of the bobwhite says that he considers every one in his fields worth \$5 a year to him as an insect destroyer. While this may be an exaggeration, it is easy to compute the annual value to the farmer of a family of bobwhites or meadow larks at somewhere near that figure annually.

Sandpipers, plover, grouse, wild ducks, herons and even some of the gulls and other water birds have been recorded as among the chief friends of the farmer during great insect irruptions in the Western States. The history of the invasions of the Rocky Mountain locust and the Western cricket is replete with instances where crops were saved by gulls, plover, sandpipers and other birds of the open.

The services of the swallows, martins, swifts, nighthawks and whippoorwills are not generally understood; but among the insects destroyed by these birds are vast numbers of flies and mosquitoes, and it is now believed that the house fly and the mosquito are among the most dangerous to man of all animals because of the germs of serious and often fatal diseases that these insects carry and distribute. Five hundred mosquitoes have been found in the stomach of a single night-hawk. Whippoorwills and swifts destroy millions of them. Swallows not only rank high among fly-catching birds, but they also sweep the grass tops and eat countless myriads of field and garden pests. Martins are particularly useful about the garden. Two quarts of the wing cases of the striped cucumber beetle were found in a martin box at the close of the season.

Utility of the Birds of Prey.

The eagles, haws and owls have been regarded from time immemorial as among the chief bird enemies of the farmer. Notwithstanding the position which has been assigned them by time-honored prejudice, most of the birds of prey are beneficial to agriculture and some of the owls are very destructive to poultry and game, but among the others only an occasional individual is the culprit, while the many seldom or never attack poultry. Most hawks and owls feed on pernicious rodents, such as house rats and mice, field mice, wood mice and gophers.

Many haws and owls feed very largely on injurious insects. It has been estimated that a single species of hawk saves

the western farmers more than \$57,600 annually during the grasshopper season. It is historical that certain species of field mice increase enormously wherever their natural enemies are not sufficiently numerous to check them. These irruptions of field mice always prove destructive to vegetation, but they are usually checked by the migration of hawks, owls and other birds that feed on them and that assemble in flocks for that purpose. Even the eagles, though in many cases destructive to farm stock, are often valuable in destroying vermin.

The Protection of Useful Birds.

The farmer is usually so situated that he can readily protect many species of birds upon his farm. He can also attract the birds by feeding them, putting up birdhouses and nesting boxes or by planting or preserving wild plants which furnish birds food. The study of friendly birds and their protection is certainly of as much value to the farmer as the study of his insect foes.

HINTS ABOUT PUTTING UP BIRD BOXES.

There is no keener pleasure derived from any source than that which comes from the possession of bird neighbors. No class of tenants give more complete satisfaction than box-dwelling birds, houses for which can be cheaply and easily erected. No class of tenants can be relied upon for more full and complete rental, in the shape of noxious insects destroyed, delightful music rendered, and, further, they are an unfailing source of amusing and instructive incidents. The boy or girl who puts up boxes for the birds to nest in, supplies them with drinking and bathing places, and provides food for those species which remain in winter, is certain of an unfailing source of pleasure.

Birds, like human beings, are capable of adapting themselves to circumstances to a very great degree. This is well illustrated in the barn and cliff swallows, which in settled localities have taken to nesting on the rafters and under the eaves of barns, instead of upon the faces of cliffs as did their ancestors, and as their brethren of less settled sections still do. In preparing nesting places for the birds, it should be borne in mind that the kind which will most readily appeal to them are such as most nearly approach to their natural nesting sites. Bluebirds and house wrens are the species which most quickly respond to an invitation to nest in artificial sites about our homes, and are the least critical as to the architecture of their dwellings. The roughest shelters and the most ornate structures are both acceptable to these welcome bird neighbors, but

plain and weather-stained boxes are most sure of an early tenant, though with the bluebird and house wren the appeal of a convenient knothole or natural cavity in a limb is apt to be stronger than the attractions of any box. Small drainage holes to allow the water to escape from the bottom of any artificial nesting limbs or boxes in case rain should drive in, and sloping and projecting tops to shed rain, are important in all cases. Pieces of limb, natural or artificial, may be wired to the trunk or branches of a shade tree, or fastened on top of a post, which may be covered with growing vines, but care must be taken to guard against the raid of cats and squirrels. A piece of tin fastened around the trunk of the tree or the post which bears the bird's box, in the shape of an inverted funnel, is sometimes used to prevent cats gaining access to the nest, and when the box is on a post a strip of heavy square-mesh poultry wire may be placed on top of the post, under the box. Dried gourds, hollowed out, with an opening made for an entrance, hung in a tree often attract wrens and sometimes bluebirds.

To utilize an old tomato can, the flap of which has been almost severed from the box in removing the fruit has a small hole cut out by making two slits about an inch apart and the same length, bending up the piece between the cuts. The rough edges around the entrance of any tiny nesting receptacle should always be bent over to prevent birds being injured by them. Such a nesting box is either tacked to a piece of board, which is in turn fastened up on the side of a building or the trunk of a tree, or it may be fastened directly to the building or tree by two nails driven obliquely through the end from the sides.

Receptacles for wrens' nests may have entrance holes about the size of a silver quarter dollar, large enough to admit the wren, but too small for the English sparrow. This bird is another enemy of our native birds, and one which has done more than any other agency to drive them from our grounds, utilizing for his own nest the places provided for wrens and bluebirds, and quarreling with and driving away even those whose nesting habits do not in any way conflict with his own. Boy and girl landlords must guard against these undesirable naturalized citizens, removing their nests when they start to build, and frightening the little disturbers off the grounds.

Some writers find swinging boxes or nesting limbs, hung in the branches of trees by wires, proof against the English sparrow, which is wary of any nesting site not absolutely stable. Others have not always found this method successful. It is

probable that as a rule the sparrows would not trouble such
domiciles.—B. S. Bowdish.

THE LITTLE BROWN WREN.

The little brown wren has the brightest of eyes,
And a foot of very diminutive size;
Her tail is as trim as the sail of ship;
She's demure, though she walks with a hop and a skip;
And her voice—but a flute were more fit than a pen,
To tell of the voice of the little brown wren.

—Clinton Holland.

PRESIDENT ROOSEVELT AND BIRD PROTECTION.

(Written to the Editor of "Bird-Lore," 1899.)

My Dear Mr. Chapman:

I need hardly say how heartily I sympathize with the purposes of the Audubon Society. I would like to see all harmless wild things, but especially all birds, protected in every way. I do not understand how any man or woman who really loves nature can fail to try to exert all influence in support of such objects as those of the Audubon Society.

Spring would not be spring without song birds, any more than it would be spring without buds and flowers; and I only wish that besides protecting the songsters, the birds of the grove, the orchard, the garden and the meadow, we could also protect the birds of the seashore and of the wilderness. It soon ought to be, and under wise legislation could be, a feature of every Adirondack lake; ospreys, as every one knows, can be made the tamest of the tame, and terns should be as plentiful along our shores as swallows around our barns.

A tanager or a cardinal makes a point of glowing beauty in the green woods, and the cardinal among the white snows.

When the bluebirds were so nearly destroyed by the severe winter a few seasons ago, the loss was like the loss of an old friend, or at least like the burning down of a familiar and dearly loved house. How immensely it would add to our forests if only the great logcock were still found among them.

The destruction of the wild pigeon and the Carolina parakeet has meant a loss as severe as if the Catskills or the palisades were taken away. When I hear of the destruction of a species, I feel just as if all the works of some great writer had perished; as if we had lost all instead of only part of Polybius or Livy.

Very truly yours,

THEODORE ROOSEVELT.

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