# Some Wild Plant and Animal Life That Has Been Presented in Thirty First Grade Readers During the Last Fifteen Years 

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## SOME WILD PLANT AND ANIMAL LIFE that has been presented in THIRTY FIRST GRADE READERS DURING THE LAST FIFTEEN YEARS

## By

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A Thesis in Education Submitted in Partial Fulfillment of the Requirements for the Degree of

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of the

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Prairie View, Texas

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## DEDICATED to

my mother, Mrs. Willie Seay, Honey Grove, husband, Alvin Ammons, Denton, Texas sister, C. M. Pendleton, Honey Grove, sister, Clara M. Seay, Honey Grove, Texas.

## INTRODUCTORY CHAPTER

## Statement of the Problem - Since the interests

 of children often center around wild plants and animals, the writer has attempted to picture the needs for realistic and scientific material for first grade children.Importance of the Study - The use of the child's interests and needs as guides for teacher's planning necessitates a comprehensive knowledge of available material, that is why the study of wild plant and animal life that has been presented in thirty first grade readers is of great importance. Even in the first grade the child's desire to find out should be encouraged in his reading rather than his dependence upon being told. What materials on wild plant and animal life can a teacher expect to have? Because wild plant and animal life is living, and because it is in some form, within the living experience of practically every child (two vital characteristics of material for children) this study has been made in an attempt to answer the preceding question.

Purpose of the Study - The purpose of this study is twofold. First, it is to determine the wild plant and animal life material found in thirty first grade readers, and a comparison of this material with wild plant and animal life existing in Texas.

Although the wild life of Texas has been used
as a basis of comparison in this phase of the study it may
be applied generally to the Southwest. Because of the range in geographical and climatic conditions in Texas we find here many birds, other animals, flowers, and trees of neighboring states. For example: the Arizona State Bird is a native of Texas; the Oklahoma State Flower is wild in Texas; the Louisiana Pines grow in abundance in East Texas.

Second, this study is to determine the trends in the use of information on wild plant and animal life in thirty first grade readers from 1922 to 1937.

This phase of study should be of considerable value to first grade teachers of the nation. It portrays the amount and type of material existing about certain animals and plants in groups of five year periods. Are your readers among those books in which most space was given to fantastic, realistic, or scientific discussions? Does this study emphasize for you the need of a certain type of reading material? What should be done about it?

If the thirty different readers in this unusually well equipped first grade room lack the needed material for these children, could it be expected that first grade children in an average school room situation are getting what they need?

Statement of Method of Procedure and Source of
Data - The writer of this thesis began the study the latter part of August, 1936. In studying repudiated authentic reports on Texas' wild plant and animal life some lists were made. The lists do not represent the entire wild
life found here, neither do they represent the entire wild life found throughout Texas, as the vast size of the state with its veried climatic and geographic conditions would make such a report small and of no great value. This fact emphasizes the possiblity of the application of this study to the Southwest.

The data collected are divided into two parts. First, that obtained from various studies reporting the wild plant and animal life found in Texas. Second, the wild plant and animal life material available in thirty first grade readers during the past fifteen years.

Statement of Organization into Chapters - Chapter I. deals with the importance and purpose of the study of wild plant and animal life. It also gives the method of procedure and source of data. The data collected are divided into two parts.

Chapter II. will give the reader some knowledge of plant life. Trees and flowers have been given special attention.

In Chapter III, the writer has attempted to give The Story of Animal Life and the Reproduction Among Solitary Animals.

Chapter IV. gives a general summary of the study of wild plant and animal life.

Summary. In this chapter the importance and purpose of the study of wild plant and animal life has been emphasized.

## CHAPTER II

## PLANT LIFE

Trees - It is admitted that trees are essential to civilization, and the fact is acknowledged that man cannot advance in improvement beyond the rudest form of pastoral life, without the use of timber. The question next arises, whether or not our countrymen will go on recklessly destroying an article of absolute necessity and immense daily consumption, without regard to $a$ source of future supply? The rapid destruction of our forests within the past few years is really appalling. The State of New York, which, not many years since, exported great quantities of pine lumber, now obtains a supply for home consumption from abroad. The forests of Maine are said to be completely stripped, that scarcely a pine tree of old growth is to be seen. At the present rate of consumption, the pine woods of the Northwestern States are likely to be exhausted in less than twenty-five years. The destruction of hard-wood forests is likewise very rapid. With the introduction of railroads commenced the destruction of forests. It may safely be estimated that two-thirds of the full-grown timber in Northern Illinois have been destroyed within eighteen years past. Tracts of thriving young wood whose annual growth added at least ten percent to its value, have been cleared for fire wood.

In Germany, France, and some other countries of Europe, the forests are the property of the government.

Their management has been reduced to a system, and they are guarded with care from wanted depradation. Our own government, in times past, has had ample opportunity to reserve lands which, although valuable for their timber, were less desirable for settlement. Such tracts might, without great expense, be protected from devastation by agents employed for that purpose. Something of the sort might still be done, but there is little hope of its accomplishment. Most of our State Legislators ignore the encouragement of tree plenting altogether. Our Agricultural Societies, both state and county organizations, with few exceptions, liberally patronize the horse - jockey, while they wholly neglect the tree planter. The matter seems to depend almost entirely upon the enterprise and patriotism of individuals. Let all, then, who have the opportunity to planttrees, awaken to a sense of the importance of the object. ${ }^{1}$

Magnolia trees are among the finest productions of the North American forests. They are distinctively souther trees; two species alone are indigenous to the northern states, and one of these may be looked upon rather as a survival, or a wanderer which has strayed across the border and forgotten to return, than as a resident to the manner born.

[^0]The Swamp Magnolia or Sweet Bay, to the surprise of botanists, is found growing naturally in a sheltered swamp on the peninsula of Cape Ann. That it can live there so exposed, a position without protection from man, proves that it can live elsewhere in a climate equally severe, with such protection. As a matter of fact, it is fairly hardly under cultivation throughout the north, but its leaves are not always evergreen nor will it remain in continuous bloom throughout the summer unless in a moist situation.

This charming little tree has a variety of common names referring to its size or its habitat or its individual characteristics. Among these names are Beaver wood, given because the fleshy roots were eagerly eaten by the beavers, who considered them such a dainty
that they could be caught in traps baited with them. Michaux relates that the wood was used by the beavers in constructing their dams and houses in preference to any other. Magnolia tripetala, the Umbrella-tree, frequentIy planted on northern lawms, is a southern species ranging from Pennsylvania to the Gulf. It may be easily recognized by its great leaves, twelve to eighteen inches long, and four to eight inches broad. These radiate from the ends of the branches in such a way as to suggest an open umbrella, whence its common name. Often it sprawls, a straggling bush. The huge, terminal, cream-white blossoms appear in May. They are from eight to ten inches
across and exhale a disagreeable odor. The name tripetala refers to the three petaloid sepals.

The Magnolia shrubs found in northern gardens whose great white or pink flowers appear before the leaves are of Chinese or Japanese origin.

The genus magnolia today is sub-tropical. Its species are found only in southeastern North America, southern Mexico, and southern Asia. But the scientists tell us that once it flourished abundantly throughout America and Europe, and its fossil remains are found in the tertiary rocks of Greenland. ${ }^{1}$

Flowers - Flowers have distinct objects in life and are everything they are for the most justifiable of reasons, that is, the perpetuation and the improvement of their species. The means they employ to accomplish these ends are so various and so consummately clever that, in learning to understand them, we are brought to realize how similar they are to the fundamental aims of even the human race. Indeed there are few life principles that plants have not worked out satisfactorily. The problems of adapting oneself to one's environment, of insuring healthy families, of starting one's children well in life, of founding new colonies in distant lends, of the cooperative method of conducting business as opposed to the individualistic, of laying up treasure in the bank for

[^1]future use, of punishing vice and rewarding virtue-- these and many other problems of mankind the flowers have worked out with the help of insects, through the ages. ${ }^{1}$

Evolution teaches us that thistles, daisies, sunflowers, asters, and all the triumphant horde of composites were once verydifferent flowers from what we see today. Through ages of natural selection of the fittest among their ancestral types, having finally arrived at the most successful adaptation of their various parts to their surroundings in the whole floral kingdom, they are now over running the earth. Doubtless the aster's remote ancestors were simple green leaves around the vital organs, and depended upon the wind as the grasses do - a most extravagant method - to transfer their pollen. Then some rudimentary flower changed its outer row of stamens into petals, which gradually took on color to attract insects and insure a more economical method of transfer. Gardeners today take advantage of a blossom's natural tendency to change stamens into petals when they wish to produce double flowers. As flowers and insects developed side by side, and there come to be a better understanding between them to each other's requirements, mutual adaptation followed. The flower that offered the best advertisement, as the composits do, by its showy rays; that secreted nectar in tubular flowers where no useless insect could pilfer it; that fastened its stamens to the inside wall of the tube
where they must dust with pollen the underside of every insect, unwittingly cross-fertilizing the blossom as he crawled over it; that massed a great number of these tubular florets together where insects might readily discover them and feast with the least possible loss of time- this flower became the winner in life's race.

Since North America boasts the greater part of the two hundred and fifty asters named by scientists, and as variations in many of our common species frequently occur, the tyro need expect no easy task in identifying every one he meets afield. ${ }^{1}$

Summary - Trees, as an essential to civilization heve been briefly treated, and some forest trees have been named. Flowers also have distinct objects in life. The supplementary chapter is primarily for teachers of the first grade.

Turning to the first grade reading material, the pre-primers, primers, and first grade readers were used in so-called first grade readers. Each page was examined for reference to wild plant or animal life. As many as ten lines concerning the subject were counted as one page. Over ten lines were counted by the actual book pages devoted to the subject.

The amount of space being thus determined, the material was classified in three ways. Definitions used to determine the classification of the material found on
wild plant and animal life were as follows:

1. Fantastic - The references portraying the wild plant or animal in an impossible part or situation other than in conversation were considered fantastic.
2. Realistic - The references portraying the wild plant or animal in its natural situation, even if use was made of some conversation suitable to the occasion were considered realistic.

Scientific - The references bringing out facts characteristic of the plant or animel discussed are considered scientific.

Most of the material in the later readers is classified as realistic and scientific while a great part of the earlier material was fantastic. The need for realistic and scientific material is apparently being realized. One will also find in the later books much use of pets and of community helpers which are bringing the reading materiel into the everyday experiences of the child. But there seems to be no reason for the use of such materials to crowd out wild flowers, trees, birds, and other native animals that the children love and see so much. Not all children live in places the size of New York City and if they did they could enjoy stories of birds and flowers that can be found just outside their persons.

$$
\text { In Tables II, III, IV, } V \text {, and } V I \text {, one can see }
$$

just how little material is available for small children in the field of nature study. In these Tables in separate columns is indicated the number of pages on the subject
that are Fantastic (F), Realistic (R), or Scientific in certain books of each five year period. Finally, in the last two columns to the right are the total pages and total books mentioning that subject in the fifteen years. At the bottom of each column is found the total of that column.

The plants and animals that are native to Texas are preceded by a $T$.

TABLE I


## TABLE II



## Wild Animal Life

Animals


Total.

Table IV

| Birds | 1922-1927 |  |  | 1927-1932 |  |  | 1932-1937 |  |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | F | R | S | F | R | S | F | R | S | Books | Pages |
| Blackbird |  | 2 |  |  | 1 |  |  |  |  | 2 | 3 |
| Bluebird |  | 1 |  |  |  | 1 |  | 1 | 1 | 3 | 4 |
| Bluejay |  |  |  |  | 1 | 1 |  | 1 | 1 | 2 | 4 |
| Brown Thrash er |  |  |  |  |  |  |  | 6 | 6 | 1 | 12 |
| Bob White |  |  |  |  |  |  |  |  |  |  |  |
| Cardinal |  |  |  |  |  |  |  | 2 | 1 | 1 | 3 |
| Cowbird |  | 4 | 4 |  |  |  |  |  |  | 1 | 8 |
| Chickadee |  |  |  |  |  |  |  | 2 | 2 | 1 | 4 |
| Dove |  |  |  |  |  |  |  |  |  |  |  |
| Ducks |  | 1 |  | 2 |  |  | 1 | 2 | 3 | 3 | 9 |
| Hawk | 1 |  |  | 6 |  |  |  |  |  | 2 | 7 |
| Lark |  |  |  |  |  |  |  |  |  |  |  |
| Owl |  | 1 |  |  | 1 | 1 | 2 | 1 | 1 | 3 | 7 |
| Pigeon |  | 1 |  |  |  |  |  |  |  | 1 | 1 |
| Robin |  | 2 |  | 6 | 20 | 16 | 5 | 1 | 5 | 7 | 55 |
| Sparrow |  | 3 | 3 |  |  |  |  | 1 | 1 | 2 | 8 |
| Wren |  |  |  |  |  |  |  | 12 | 12 | 1 | 24 |
| Total | 1 | 15 | 7 | 14 | 23 | 19 | 8 | 29 | 33 | 30 | 149 |

## CHAPTER III

## ANIMAL LIFE

The Story of Animal Life. If the microscope had never been invented, the Story of Animal Life, as it is related by modern science, could never have been told. It is to the microscope that we owe our knowledge of innumerable little animals that are too small to be seen by the unassisted eye; and it is to the microscope that we owe the most important part of our knowledge about the bodies of larger animals, about the way in which they are built up, and the uses of their different parts.

The microscope has shown us the intimate structure of every organ of the animal's body; and thus, in most cases, the uses of the organ, and the steps by which it performs its tasks, have been made clear. The microscope has also shown the true nature of the sexual functions, and all the steps of the processes of growth in young animals. None of these things could ever have been rightly understood without the microscope, for all their most important details are invisible to the naked eye. To the microscope, too, we owe our knowledge of the essential kinship between plants and animals; to it, also, our understanding of the oneness, the "solidarity", as the French would say, of the animal kingdom, for it is in the structure of microscopic parts; that resemblances are revealed under the most strikingly different circumstances of out-
ward form.
Let us inquire a little into the history of the animals that can only be seen by the aid of the microscope. Most of them live in water, containing decaying remains of plants or animals. The naturalists who first studied them in "infusions" of hay, and so on, and hence these little creatures were named Infusoria - a name that has since been somewhat restricted in application. By an "infusion" is meant that water is poured on some substance and allowed to stand; the more ancient and evil-smelling the infusion becomes, the more of these little animals do you find living in it, Nature provides dirty water ready made in ditches and in ponds, and these are full of microscopic animals. And not only do they appear in dirty water, but kindred kinds appear in clean water also, and many in the waters of the sea.

It will easily be understood that when the existence of microscopic animals was discovered, zoologists had greatly to modify their ideas of the animal world. Still more was this case afterwards, when it was found that all enimals were built up of minute parts much resembling these microscopic animals in their main features. To these unit parts, of which all animal bodies are composed, the term "cell" is applied. The name of cell is not very descriptive of these units in the animal body, but correctly describes the unit of plent structure.

The Story of Animal Life, indeed, bids fair to
be the only element of romance left in the modern world for those who stay at home in their own land. The traveler of days of yore, when he ventured into the woods and fields, or upon the water, expected to meet with all sorts of strange things-- fairies and elves and ugly gnomes; giants, ogres, and dragons; mermeids and water-witches. With the spread of education all these things have vanished now; it is quite certain that no board-school-boy has ever met any of them: And one's walk abroad would be in these deys as prosaic as they are safe, but for the world of animal life. ${ }^{1}$

Most of the lower animals lead a solitary life. Speaking generally they exist, each one for itself, in extreme isolation, even when external conditions throw them together in no matter how great a number. Only at breeding time can we say that exceptions occur, in that the male and female then come together during the one sexual act, only to separate again immediately afterwards. In those species, however, where the fertilization of the eggs take place without copulation, there is not even an attempt on the part of the male and female to come together. Fertilization of the eggs without copulation on the part of the parents, that is to say without one particular male coming into actual physical contact with one particular female, occurs among many of the lower solitary animals; it occurs among numerous Coelenterata and

TB. Lindsay, The Story of Animal Life, D. Appleton Co., New York, 1907. PP. 9-14.
ringworms, among the lower snails and the majority of marine shell-fish, among Echinordermata, Tunicata, and many other fishes. Eggs and sperm-cells are emitted into the water, and their fertilization follows. This emission takes place either without regerd to the presence or absence of the other sex, or else individual members of the same species collect together beforehand in associations at definite places. In the latter case, whenever on individual discharges its sex substances this acts as a stimulus to the others, male and female alike. In many other species the male emits its sex substances into the water, and the sperm then penetrates into the female genitala. In all these cases where a particular male does not enter into any direct relation with female there can be no suggestion of the formation of a mateship.

Among the solitary species in which pairing and copulation occur, the individual may perform the sexual act either only once in its life, or repeatedly. The majority of insects pair only once; spiders and some insects of the beetle, plant-louse, fly and butterfly classes, pair, as a rule, more than once. In general these reperted pairings take place promiscuously, that is to say the individuals copulate at nendom with members of the opposite sex. Here, therefore, promiscuity is the general rule. In exceptional cases, however, emong certain species of insects and spiders, mateships may also be formed. Promiscuity also obtains among many reptiles.

True promiscuity occurs in the case of the cuckoo, which leads a solitary life throughout the year. In this species there are two males to every female. Each male remains in its own sharply circumscribed domain, and the females roam from one male to another, often pairing with six different males. It is altogether wrong to call this polyandry, for all the criteria of promiscuity are present.

Birds - Birds seem to be the happiest creatures on earth, yet they have none of what we call the comforts of life.

They have no houses to live in, no beds to sleep on, no breakfast and dinner provided for them. No one can tell all about their lives and habits, for no one knows all their ways.

Men who study dead birds cen tell how they are made, how their bones are put together, and how many feathers there are in the wings and tail. Of course it is well to know these things. But to see how birds live is much more interesting.

It is pleasant to see how mother birds build their nests, and how they take care of their nestlings. It is charming to to see the young ones when they begin to fly, and to know how they are taught to find their food, and to keep out of danger, and to sing, and everyBrace and Company; New York 1927, pp. 11-19.
thing young birds need to know.
Then when they are grown up, it is interesting to find out where they go in winter, and why they do not stay with us all the year round. One who goes into the field to watch and study their ways will be surprised to find how much like people they act. And after studying living birds, he will never want to kill them. It will seem to him almost like murder.

Almost the first thing every bird thinks of when he comes to us, is making the nest. For summer is the only time in his life that a bird has a home.

He does not need a house to live in. He cares nothing for a roof to cover him, because when the sun is hot, he has the broad green leaves on the trees to shade him. And when it rains, his neat feather coat is like a waterproof that lets the drops run off, leaving him warm and dry under it.

He does not need a dining room, because he eats wherever he finds his food, end he wants no kitchen, because he prefers his food raw.

He has no use for a bedroom, because he cen sleep on any twig; the whole world is his bed room.

He cares nothing for closets and bureaus, because he has only one suit of clothes at a time, and he washes and dries that without taking it off.

When it is too cold he spreads his wings and flies to a warmer place. Birds have really no need of a
house, excepting when they are babies before their eyes are open, or their feathers have come, or their wings have grown. While they are blind, naked and hungry, they must have a warm snug cradle.

So when the bird fathers and mothers come in the spring the first thing they do is toflnd good places and build nice cradles, for they are very fond of their little ones. They spend the spring and summer in working for them, keeping them warm, feeding them till they are grown up, and then teaching them to fly and to take care of themselves, so that when summer is gone they will be ready to go with the other birds to their winter home.

When the bird is grown up, there are meny other things to know about him, - one is, whether he can talk. It is plain to those who have studied the ways of birds, that they are able to tell things to each other, and many writers have said plainly that birds have a language.

If you notice birds in cages, you will find that when two or more of a kind are in the same room, you will hear little chirps and twitters and other notes, not at all like their song. But if one is alone in a room, he hardly makes a sound except when singing.

Then see a robin out of doors; he is less afraid of us than most birds, and easiest to watch. If something comes up on him suddenly, he gives a sharp note of surprise. If a cat appears, he has another cry which everyone can understand, a word of warning to all. If everything is quiet and his mate is neer, he will greet him with some
low, sweet notes.
When a partridge mother sees danger, she gives one call, which all her brood know, and at once run and hide. When the hen speaks to her chicks, they know well whether it means to come to her or to run away.
of course birds do not use our words. When it is said the quail says "Bob White", it is meant that his call sounds like those words. To some the notes sound like "more wet". One may call it almost anything, like "all right" or "too hot".

What the bird eats and where he gets his food are useful things for us to know. It has only lately been found out that birds are the most valuable of helpers to us.

What we cannot eat ourselves, they are happy to live on, and things that make us a great deal of trouble are their daily food.

Some of the things they are fond of are little animals, like mice and ground squirrels, that eat our crops. Others are insects which spoil our fruit and eat up our vegetables, cankerworms and cutworms and a hundred more. Many birds eat the seeds of certain weeds. ${ }^{1}$

On June 10, 1937 one hundred and forty species of birds and more than fifty of animals were found in the Davis Mountains by Dr. T. Van Tyne of the University of Michigan.

TOlive T. Miller, The First Book of Birds, Houghton Mifflin Company, New York, 1927, pp. 1-18.

A bird show his intelligence in many ways. One is by the way he acts when he cannot do as he is used to doing. A robin wished to build a nest, but couldn't find mud to put into it, for it was a very dry time, and there were no streams near. The bird seemed puzzled for a while. Finally, she went to a bathing-dish that the people of the house kept filled with water, jumped into it and got her legs very wet. Then she flew to the road and tramped around in the dust and dirt. She carefully picked the coating of mud off with her bill, and took to the nest she was building. ${ }^{1}$

Summary - The first part of this chapter deals with the Story of Animal Life. In the second part something about the life, shelter, language and intelligence of birds has been briefly stated.

## SUMMARY AND CONCLUSIONS

One can readily see from the Tables that most space is given to wild animals. Twenty different enimels are written about; seventeen different birds; six trees are mentioned and four wild flowers.

In a study in process on the nature interests of the first grade children in the Fred Douglass School, at Denton, Texas, it has been found that interests in trees, flowers, and birds far surpass the interest in other wild animals. That of course, is to be expected in these days of civilization when roaming wild animals are fewer and found in more secluded places than fifty even fifteen years ago. The interests in birds last throughout the year. Children notice the birds flying south in the fall, they notice the birds that have stayed here during the winter, they notice the birds returning in the spring and those staying here through the summer. They are interested in the many wild flowers from the time they begin blooming in the spring until the last seeds are dispersed in the fall. They watch the trees in the fall and await the first leaf buds of spring when the tree awakens from its long winter nap.

In Table $I$, all six trees mentioned grow wild here, but there are sixty-five different kinds of trees growing in Texas. In Table II, two of the four wild flowers mentioned in stories are found in Texas while there are
over two hundred different wild flowers in this state alone. Table III, shows that much scientific material is used. Some fantastic reading material should be included in a reader, but not to the extent of stamping on the impressionable mind of a six year old child such distorted ideas as rabbits with wings.

In Table I, all pages devoted to trees, in the books studied during the last five years are scientific as compared to none fifteen or twenty years ago.

Although in some ways this study could be made more scientific as in the use of percentage of space for comparisons this is sufficiently detainled for one reading the report to finish with two dominant conclusions.

First, there exists a very definite need for first grade readers based on children's nature interest which will include particularly, native trees, wild flowers, birds, and the few wild animals in the possibilities of the child's experience.

Second, the present trend toward realistic, simple scientific presentation of nature material should be continued. This will require the writer's study of the plant and animal life he intends to portray.

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