

WHAT IS MONEY?

Money, my boy, is silver and gold. Or a piece of pictured paper. And they who possess it manifold May cut any kind of caper.

THE STORY OF THE TREE AS A LIVING THING AND THE STORY OF FOREST DEVASTATION IN AMERICA.

Speech of Hon. Martin L. Davey, of Ohio. In the House of Representatives Thursday, April 17th, 1924.

By order of the House Mr. Davey was given leave to address the House for 40 minutes.

Mr. DAVEY. Mr. Speaker and gentlemen of the House, with your permission I should like to decline to yield for questions during the course of my remarks, but if there is any time left I shall be glad to answer any questions at the end. I would like to give you a connected story of the tree as a living thing and a story of forest devastation as it has been progressing in this land of freedom and opportunity.

There will be distributed by the Doorkeeper some leaves—just ordinary leaves—and I would like to have you bear in mind that these leaves represent a great fact in the whole scheme of life. I want to develop the fact that the tree is the most important thing in all the world, without exception.

THE VITAL RELATION OF TREES AND HUMAN LIFE.

The most beautiful tribute to a tree that I ever heard was given at a time when I addressed the Rotary Club of Elyria, Ohio. The president of the club in introducing me told this story. He said:

I have the most wonderful tree in the world at my house. Some 15 years ago I had a little boy who was then 3 years of age. In the early fall he would go out to gather up the buckeyes—

I suppose he meant horse chestnuts because there are very few buckeyes in the Buckeye State. He said:

The little fellow would gather the buckeyes, sometimes by pocketfuls and sometimes by basketfuls, and would bring them in and play with them. One day he took sick. The next day he was better, so he went out as usual and brought in just one large fine buckeye and played with it; and the next day he died.

After a little pause he continued:

I took that large, fine buckeye and carried it with me all the long winter. I took it out every little while and looked at it and was reminded of him. And then when the springtime came, I went out and planted it down under his sand pile. Later the sand was taken away and the buckeye sprouted and came up, a healthy little plant. Then I built a fence around it to protect it, and I called the boys of the neighborhood together and told them the story. I asked them to help me protect this tree. I told them they might break anything else, but the water in my house, my automobile or anything else, but please don't break the tree. They have respected that request, and the tree stands there today 15 years old, a healthy young specimen, the most wonderful tree in the world.

It seemed to me as I listened to this story that there is in this living tree not alone a monument to a little boy who died, but also a monument to a father's love.

Most folks, unfortunately, do not realize that the tree is a living, breathing organism. It is just as much alive as you and I. It breathes; it has a circulation; it digests its food; it has sexual processes. It is perfectly true that it has no nervous system as we have in the human body.

It lacks the power of locomotion. It has no intelligence as we understand that term, but it does have the power to adapt itself to its environment. In fact, it adapts itself amazingly well. Where trees grow close together, they grow one-sided in order to accommodate themselves to each other. Where they grow thick, they grow tall in order to reach the sunlight. Frequently the roots of a tree travel long distances around boulders and almost insurmountable obstacles in order to reach the source of their food and water supply. In all of these elemental things the tree is just as much alive as man himself.

The tree breathes through its leaves chiefly. I hope that all of you some time will take occasion to look at the underside of a leaf through a microscope. You will find there a myriad of little openings or cells into which the air penetrates just as truly as it does

into the human lungs, and in those cells the air is separated into its parts, just as it is in our lungs. The carbon dioxide is extracted from the air and is taken into the body of the tree as part of its food material, and the oxygen is thrown off for the benefit of man and all animal life. It is true that the breathing process does not follow the principle of the bellows movement, as in the human lungs, and yet it is actual breathing in just as true a sense as that which takes place in our own bodies.

The tree has a circulation that is just as real as our own. Way down underneath the ground, where the roots are working day after day, they gather up the food in liquid form. The area of the roots is approximately equal to the spread of the top. If you see a tree whose top is 50 feet in diameter, its root area is approximately the same. The all-important hair roots are largely out at the ends of the whole root system about under the edge of the branches. It is this myriad of hair roots that send it up the food in liquid form, and send it up through the body of the tree to the leaves.

I suppose all of you have a cross section of a tree. This is the same as the top of a stump. Just imagine you are looking at the cross section of a tree now. In the center you see the pith. That was there from the time it was a baby tree. Around the pith is a layer of wood, which represents the first year's growth; and around that a second layer, which represents the second year's growth; and around that a third layer, which represents the third year's growth, and so on out to the bark. In the beginning these central cells were active sap-carrying tissues, but as the tree grew in size these central cells became more and more dormant—that is to say, filled up more and more with mineral elements, so that they became less and less active. But as you go outward toward the bark you find that the cells are more and more active as sap carriers, so that the last few layers' growth, are the active sap-carrying tissues. It is in those outer wood cells that the crude sap is carried upward from the roots to the leaves.

Outside of the last layer of wood is what is called the cambium layer, where all the growth and healing take place, and outside of everything else is the bark, which serves the two-fold purpose of protecting the living tree and providing the cells in which the digested food material can travel back in its downward flow.

Now, then, this food material having been pumped out of the soil by the hair roots is sent up through the small roots to the large ones, then through the trunk to the limbs and out to the twigs and then to the leaves, where it undergoes a wonderful chemical change that makes it available as food material. After having been digested it is then sent back in the inner cells of the bark all the way down to the same little roots from whence it came, building all the way down and depositing this food material out of which the structure of the tree is created.

The tree digests its food in just as real a sense as man himself. This food material, that has been pumped up from the roots, undergoes in the leaf a marvelous chemical change under the influence of the sunlight and is transformed into available food material. Thus we find the leaf is both the lungs and the stomach of the tree.

I would like to tell you a story I read in the New York Times nearly three years ago that illustrates a profound truth. It was a story written by their correspondent from the famine-stricken portions of Russia. I doubt if the correspondent realized the tremendous importance of the thing he was telling. He described how he came upon a house where a little child lay sick. Its eyes were still and glassy and staring straight upward. Over its body was a quilt. It looked as though there were a pillow underneath, the quilt. The correspondent looked at the child and then at the mother; and she, divining his purpose, pulled back the quilt and disclosed a horribly misshapen body. Its little belly was terribly distended, and its arms and legs were emaciated. It had very much the appearance of a kepiv.

Then she told this story of what had happened: She said that hunger had driven them so far that they had fed this little child a blue clay called "eel." You and I have no conception of what real hunger is. We think we know what it means to be hungry, but only in these famine-stricken lands is it possible for human beings to know the extent of that terrible suffering. You can imagine what it means when human beings are driven so far that they will eat clay. This clay sticks to the teeth and sticks to the walls of the stomach, and it stills for the time being the intense craving of hunger; but there is no power in the human system to throw it off, and it remains there and clogs the stomach and the intestines. Then the worms start to work and the end is near. I tell you this story, even with the touch of horror which it contains, because it illustrates a profound truth of far greater magnitude and importance to human life than might appear.

The leaf is the most important thing in all the realms of life. It is the one and only connecting link between the organic and the inorganic worlds. There are only two minerals that man can take into his system and assimilate—water and salt—and these only in limited quantities. Everything else that we eat and, in fact, most of the things that we wear come to us through the leaves of vegetation—not of trees alone but of all vegetation.

It is the leaf which takes the dead mineral elements from the soil, the inorganic elements, and transforms those minerals into organic, living cells and makes it possible for them to feed the whole of the living world. And thus it appears that the great God who created the world and the life that inhabits it made of the lowly leaf the greatest and the most important instrumentality of that life.

The tree has sex processes that are just as real and just as beautiful as in any other form of life. The male and female exist as positive factors. The pollen is created in the male parts and is carried largely by the winds to

the female organs, where conception takes place and the continuity of life is made possible. I wonder if you have noticed in the spring that two trees of the same type will come into flower at different times—one a little earlier than the other. That which comes into flower earliest is the male, to be ready for its mate. No doubt you have seen the wonderful orchid, the magnificent flower that comes to us from the Tropics. You may have wondered why it is that the orchid remains beautiful so long. It is because the insect which fertilizes it can not live in this latitude. And so it happens that the lovely and delicate orchid, the flower of regal beauty, remains beautiful for a long, long time, waiting—waiting for its mate.

Now, I would like to tell you a little about another phase of the great tree question that seems to me of monumental importance. This has to do with the subject of forest devastation and its bearing upon the present and the future of America. In order to say to you may understand that what I am about to say is not the product of my imagination, I want to read to you very briefly from the United States Forest Service that was published nearly four years ago. This followed a resolution by the United States Senate calling upon the Forest Service for such investigation and report. It was the most exhaustive investigation ever made in this country. Among other things this report says:

(1) That three-fifths of the original timber of the United States is gone, and that we are using timber four times as fast as we are growing it. The forests remaining are so located as greatly to reduce their national utility. The bulk of the population and manufacturing industries of the United States are dependent upon distant supplies of timber as the result of the depletion of the principal forest areas east of the Great Plains.

(2) That the exhaustion of timber is not the sole cause of the recent high prices of forest products, but is an important contributing cause whose effects will increase steadily as depletion continues.

(3) That the fundamental problem is to increase production of timber by stopping forest devastation. The virgin forests of the United States covered 822,000,000 acres. They are now shrunk to one-sixth of that area. The forest lands remaining are not utilized for farming or any other purpose, approximately 81,000,000 acres have been so severely cut and burned as to become an unproductive waste. This area is equivalent to the combined forests of Germany, Denmark, Holland, Belgium, France, Switzerland, Spain, and Portugal. Upon an enormous additional area the growth of timber is so small in amount or of such inferior character that its economic value is negligible.

Some three hundred years ago our forefathers came to the eastern shores of this country and discovered a land that was endowed as richly as any other in the world's history. The New England States today, that originally were so richly endowed, import 30 per cent. of their own consumption and will import more and more as time goes on. About 50 years ago New York State was the greatest producer of timber in the Union, and today the great Empire State has so far depleted its timber resources that it produces but one per cent. of its own consumption. It produces 30 board feet per capita and consumes 300 feet.

Then the tide flowed to Pennsylvania—Penn's Woods—which was so named because of its wonderful covering of trees; but today Pennsylvania produces less than enough for the Pittsburgh district alone, about 20 per cent. of its own consumption. But that is not all of the story of Pennsylvania's woods. How many of you have taken a daylight ride across the Alleghenies. I hope every one of you will do so and look out across those hills, as I have and see for miles and miles the desolate waste.

This is what happens out in the native woodlands. The rain comes down through the leaves and settles into the loose, porous soil and finds its way into the subsoil, and from there to the springs which feed the little streams, and they in turn feed the rivers. But man comes along and cuts away the forest covering, leaving behind him the debris, the leaves and chips and small branches, making a veritable tinder box and a constant fire hazard. Then the fire sweeps over the land and destroys the remaining vegetation. Then, when the rain comes down, it sweeps across the surface of the land and takes with it the fertile top soil that nature has taken centuries to build up. It is said that it takes nature 10,000 years to make an inch of top soil fertile. The whole lower Mississippi Delta, in fact the whole lower valley, is made up of rich top soil that has been swept down from the interior.

There is in Vinton county, Ohio, one township of 10,000 acres that tells the sad story of what has happened. I have this on the authority of a representative of the forestry department of Ohio. He told me that two years ago he went down to this place that was once covered with a magnificent growth of trees. The large trees had been cut away for lumber purposes and the smaller ones had been cut down to be used as mine props. Then the fire swept over the land and destroyed the remaining vegetation, followed by floods that took the fertile top soil. He told me that just three families exist in this whole township of 10,000 acres, and he went out across this land looking for other signs of life. He said, "I could not find a bird and not even a rabbit." So the destruction of timber is of more far-

reaching importance than merely the loss of lumber.

Some 35 or 40 years ago the tide turned to the Lake States—Michigan, Wisconsin, and Minnesota. About that time men came back from that section, which was then covered with an apparently inexhaustible supply of wonderful white pine, and they told how this supply could never be cut away, and yet today it is almost gone. The original supply of white pine in the Lake States was estimated to have been 350,000,000 board feet. Today it has been reduced to 8,000,000, and it will be all gone in about 10 years commercially. The section from which I come—Ohio, and west from there, Indiana and Illinois—has almost ceased to be a factor in the production of lumber, and yet that section in years gone by produced wonderful hardwoods. A gentleman told me of the magnificent trees that were cut down at the time of the Civil war. Great oaks four feet in diameter, were sent from northwest Ohio to build the Monitor, which proved the turning point in the Civil war, and yet that section is now practically denuded. Still I see even today trucks out bringing in one by one the last remaining specimens of the primeval forest.

To the south of that section, in the southern Appalachian region, there was and still is a very considerable reservoir of hardwoods, but the government estimates that this supply will be gone commercially in from 18 to 20 years.

In the South Atlantic and Gulf States there was a wonderful supply of yellow pine, and yet that supply which was considered inexhaustible is almost gone. It is estimated that it will be all gone in from twenty to twenty-five years. There still remains in the southern Mississippi section one last great reservoir of timber, including the wonderful cypress, but the government estimates that this supply also will be gone in from twenty to twenty-five years. So that within the next twenty-five years—most of us I hope will be long gone—we will see a time when the great eastern section of the United States will be practically denuded of its timber from a commercial standpoint.

There still remains, however, a very impressive quantity of trees for lumber purposes in the West—Washington, Oregon, California, northern New Mexico and Arizona, Colorado, Utah, Idaho, Wyoming and Montana. If you look at the figures you would probably conclude that this supply in the West also would be inexhaustible, and yet the government estimates that it will be all gone commercially in from thirty to forty years.

However, even today we are paying the price of our destruction as this steadily dwindling supply is being pushed farther and farther away from the centers of population. Some thirty years ago Chicago, which is thirty years the greatest lumber market in the country, secured its supply largely from the surrounding States. The freight rate was then about \$3 per 1,000 feet. Today the Chicago market receives its supply chiefly from the far South and the far West, and the freight rate is now about \$13 per 1,000 feet, making an increase of \$10 per 1,000 feet for freight alone. I am not in the forestry business, and have no foresters in my organization, nor have I any trees to sell. Our work is as distinct from forestry as dentistry from medicine. Neither am I in the lumber business, and I have not even a remote financial interest in that business; yet I wish to express my earnest conviction that we will never again buy lumber as cheap as we have in the past, and the price of lumber will increase steadily from now on. This will be the result of the most simple economic causes.

In talking with Gifford Pinchot some two years ago, he made a significant statement. I suppose you all know who Gifford Pinchot is. He was the chief of the Forest Service under Teddy Roosevelt. He was for a number of years commissioner of forestry in Pennsylvania, and put that State in the forefront in the matter of State reforestation. He is one of the outstanding exponents of conservation and reforestation, and with it all is now the Governor of Pennsylvania; so he ought to be perfectly good authority to quote. He said to me:

Mr. Davey, in my judgment there will be a lumber famine in this country within 25 years, and such a lumber famine will make itself felt before the end of the 25-year period.

Do you believe that these things do not affect you and me? Stop to think friends, that about one-fifth of the total lumber products of this country is consumed in the manufacture of boxes, barrels, and crates for the transportation of your manufactured products and food supplies from one section of the country to the other. Nearly one-half of the lumber products is consumed on the farms of America for the production of our food supply. Lumber and its products enter into every phase of American life, and no one could do business as it is now done without it.

For you who love the great of doors, to hunt and fish and tramp, there is a sinister threat in the fast declining timber area. Let me say, friends, that without the forest home there can be mighty little game, and without a continuous and adequate supply of water there can be mighty few fish. Fish can not live in streams that are alternately raging torrents and dried up bottoms. The whole question of an adequate water supply for the cities of America is involved in this matter of forest conservation and reforestation. It has a more direct bearing upon the life of this country probably than any question that can come before our people.

I am reliably informed that the city of Columbus, Ohio, was threatened with a water famine a year ago last past, and just as many other cities have been threatened in the recent past. The people of Columbus were warned that there was a bare three days' supply in the reservoir. Their water is taken from the Scioto river, which was nearly dried up. Nothing but a providential rain saved them from the catastrophe. This condition is due very largely to the destruction of the woodlands around the headwaters of these streams. It is the

woodlands that hold the water in check and allow it to seep out gradually. Without that there can only be alternating floods and droughts.

There is just one thing more that I want to say, and I would like to leave this with you as a concluding thought. All of us have heard for years past of the famine conditions in China. That country once had a wonderful covering of trees, very similar to that in America; but China, poor benighted land that it is, did what we are doing in America, cut away its trees and allowed the land to be burned over. The vegetation was destroyed over vast areas; then the water swept over the land and carried with it the fertile top soil. So there are millions of acres in China that constitute a barren waste not capable of producing vegetation. China has one crop in seven years, and in the other years of that period must look to the world for food to feed her teeming millions.

China has become, and will remain for long years, a land of perpetual famine because she has destroyed her forest covering, subjecting herself to the devastation of alternating floods and droughts, and has sacrificed the fertile top soil over such a vast portion of her domain.

A representative of the Davey Tree Expert Co., with which I am connected, recently returned from a trip around the world, during which he made observations on the results in other lands. Among other things he described what he saw in China. Sailing through the Yellow Sea he was impressed by the fact that much of it was of a deep chocolate color, the result of soil that had been washed down from the interior. Looking out across the land he saw miles and miles of barren waste from which soil had been washed away, because no trees were there. He told of having seen groups of women out gathering weed stocks with which to cook their rice. They have no wood for heating, and none for fuel, just weed stocks, gathered laboriously from the countryside. Over vast areas not even bushes are growing on the land. China is today paying a terrific and ghastly price for her folly.

No nation in the history of the world was more richly blessed by the Creator in the matter of its natural resources than America. It seems that God Almighty created here His richest garden plot where there could be brought together the best blood of the races in the world, out of which could be built up a new nation of great power, great purpose, and great possibilities. We are dissipating our assets very much like the reckless son of a wealthy father who comes suddenly into his inheritance. America can not long remain the great land of freedom and opportunity unless we protect and conserve the very things which have made us what we are. My plea to you, and to all in this land that was originally so blessed, a land of great promise and boasted opportunity, is that we wake up and conserve the remnants of our once great forest wealth and begin to reforest while yet there is time.

God Almighty gave unto us, when He gave us these rich blessings, a tremendous responsibility. This land is ours to dress and to keep it, as the inheritance was given to Adam when he went into the Garden of Eden. It is our problem, as the representatives of the American people, to consider the fact of forest devastation and the folly of our lack of conservation in this country, and to firmly resolve that we shall do our duty before it is too late. Gentlemen, I beg of you to consider this problem as among the very great and far-reaching things affecting America. Oh, there are so many things of small importance on which we waste our time in useless discussion, while we are allowing the process of devastation and deforestation and wastefulness to consume the heritage which has come to us under the providence of God and through the heroic sacrifices of our forefathers, and we have disregarded the safety and welfare of our heritage.

That is my plea to you. I think there is nothing that affects the future of America more, and very few things that are of equal importance. Gentlemen, I hope it may be possible for us here to do that thing which is so necessary for our children and our children's children. Even though we may not personally suffer with our life time, let us do the thing that is obviously our duty, and protect America, and keep it worth while for other men in the future to live in and to admire and to love. I thank you, gentlemen.

I would not attempt to pose as a past master in the art of forestry, but will give you my own judgment of the thing, for what it may be worth. It seems to me that the all-important thing for us as a government is to buy up the cheap waste lands, millions of acres—according to this report, "81,000,000 acres so severely cut and burned as to become an unproductive waste"—and reforest that as a government project, and forever keep it under the government regulations as to methods of cutting.

I would like to bring out one other point in this connection: The thing that is robbing America of her heritage is the wasteful methods of lumbering. That is the thing that is doing the appalling damage. Lumbermen, in their eagerness to get rich quickly—and I suppose we are all more or less subject to that tendency—cut and slash without regard to the future. There was a lumberman in the State of Michigan made a remark to one of my brothers a few years ago which I think pretty nearly rang the bell. He said, "Mr. Davey, I have been in the lumber business for a good many years, and I have made a fortune out of it, and I have done a whole lot to hurt my country; I have resolved to spend the balance of my life in helping to undo the damage I have helped to do, in order to make my peace with God." The wasteful methods of lumbering are one of the gravest sources of menace to the future.

He was Wary.

Stage Hand—"Did you say these stage directions called for a window or a widow?" Manager—"I said 'window,' but they're much alike. When I get near either of them I always look out."—Good Hardware.

FARM NOTES.

—Don't stop the threshing machine to attend a family reunion or picnic. Every day counts in the battle of the wheat grower against the angoumois grain moth.

—The time for budding has arrived for the fruit men who grow their own seedlings and wish to propagate their stone fruit trees for next year. This method of securing your orchard stock is cheaper and gives you varieties that are "true" name.

—If you have experienced losses from grapes rotting in recent years, it is advisable to spray the grapes this summer regularly with Bordeaux mixture. The backyard vines or the small growings in farm gardens may be treated with the aid of a small hand sprayer.

—A five day course to train cow testers to take charge of cow testing associations in Pennsylvania was given by the dairy department of the Pennsylvania State College from August 11 to 16. Dairy experience and ability to handle figures were the requirements for entry.

—The pear slug and fall web-worm are doing considerable damage throughout the State. The control measure advised is to apply a spray of three pounds of arsenate of lead in 50 gallons of water. Apply at once for the web-worm when the caterpillars get large it is hard to control them.

—This has been a better season for greens such as spinach, lettuce, and early celery, than for the fruiting vegetables such as tomatoes, peppers and eggplants. Those who heeded the advice last spring to plant a succession of greens so as to have a continuous supply during the summer have had an abundance. Now is the time to sow fall endive, lettuce and cress.

—The tomato plants have had a hard time to set fruit during the continued period of excess rains and cool nights. The blooms drop off and nothing is left but the bare fruit spur. This means that in addition to the lateness of setting out into the garden and the slow growth made, that most plants have lost the first, and in some cases, the second cluster of fruit. Tomatoes will be very late this year.

—See if your brooder houses are crowded on warm nights. Birds will not get enough ventilation unless the house is comfortably filled. It is a better plan to have young stock roost in the trees than to try to confine them to an over-crowded brooder house. Germ life multiplies rapidly in filthy water vessels. Plan to change the water often and to disinfect the vessels. A fowl appreciates a clean, cool drink as much as any other animal.

—It is time to spray again for the oriental peach moth as most of the eggs have been laid or will be laid during the next week. Apply a spray of nicotine sulphate and self-boiled lime sulphur now, and again in two weeks. Cool weather has delayed the development of the first brood so that there is not going to be as many broods of the moth this year. At most, there will be only four broods even if the fall is unusually long and warm.

—Attention is again called to the damage being done throughout the State by aphids on truck crops. Melons and cucumbers are especially tasty to the plant lice this season. State College specialists recommend the use of a two per cent. nicotine dust. It can be made at home by thoroughly mixing ninety-five pounds of hydrated lime with five pounds of nicotine sulphate. Send to the School of Agriculture at State College, Pa., for Bulletin No. 186 which tells all about the "Control of Plant Lice on Vegetables."

—Pennsylvanians will have to import more Thanksgiving and Christmas turkeys this year than last, officials in the department of agriculture declare, basing their predictions on the cold, wet weather of the past spring, which is asserted to work hardships on young turkeys as many as were panned up as when allowed their freedom. By penning they are apt to develop leg weakness, it was declared.

It was asserted that while turkeys can be raised on a limited range more skill is required in managing them than if on a free range. The larger the range the less it costs to rear them, and the better the health of the fowl becomes. When young turkeys are penned up they should be moved at least once a week and never placed on ground which has been used as a fowl runway within a year.

—Pennsylvania's peach crop this year will be about 1,856,000 bushels, according to estimates compiled by the Federal State crop reporting service. Based on July 1 conditions, the peach crop will be 75 per cent. of a full crop, but it will fall below last year's production by about 50,000 bushels.

This forecast, issued by Paul L. Koenig, the joint agricultural statistician, indicated that the 1924 crop may be influenced by weather conditions during July so that it may actually exceed the production of last year. The outlook, he said, has been splendid so far this season. Last July there were prospects of a 72 per cent. crop, and the year average condition for the same date is 55 per cent. A survey of the prospects in the producing districts east of the Rocky Mountains shows that the 1924 peach crop will be the largest since 1915. The country-wide production is expected to be 50,701,000 bushels, 8,000,000 bushels more than the production last season.

The Georgia crop is being marketed at the present time, and it will amount to more than 7,500,000 bushels, fifty per cent. increase over last year. New Jersey's production will be about the same as last summer, it is predicted.