TAFT'S ADDRESS

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economic force shall exert itself along the lines of easiest and best increase of production. Of course the Government, by furnishing assistance in irrigation, increases the amount of tillable land, and the States, if they undertake the drainage of swamp lands, will do the same thing. The cost of such improvements will be considerable, and will affect the farming profit, but the result generally in such cases is to yield such great crops per acre that the farmer can well afford to pay interest on the increased investment.

Increased acreage from any other source is likely to be, however, in more stubborn land, calling for greater effort in tillage and producing less per acre. We may reasonably infer from the high prices of the decade immediately past that everything was done by those who owned the land to enlarge the acreage where that was easy or practical and that is what is yet to be brought in as tillable land presents greater difficulties and greater expense. The way in which the States can help to meet future increased demand is by investigation and research into the science of agriculture, and by giving to the farming community a knowledge which shall enable them better to develop the soil, and by educating those who are coming into the profession of farming. It is now almost a learned profession.

The first great step that has to be taken in reformed agriculture is the conservation of the soil. Under our present system the loss to the farms in this country by the erosion of the soil is hardly to be calculated. Engineers have shown us how much is carried down the great rivers of the country and is deposited as silt each year at their mouths. The number of cubic yards staggers the imagination. The question is how this can be prevented, as it must be, because the soil which is carried off by this erosion is generally the richest and the best soil of the farms which are thus denuded.

Of the rain or snow which falls on the land, a part evaporates into the air; a second part flows down the slopes to the streams, and is called the run-off. The third part soaks into the soil and sub-soil, and thence into underlying rocks, perhaps to reappear in springs or seepage into streams. This is called ground water. The fourth part is absorbed by organisms, chiefly by trees, grasses, and crop plants, either directly through the tissues or indirectly through the roots penetrating the moistened soil. Erosion is due to the run-off, and its quantity is dependent on the slope of the farm and also the nature of the soil and its products. Any reasonable slope, and any full cover of forest or grass with an abundant mulch, or a close crop on a deeply broken soil, or a friable slice kept loose by suitable cultivation, will absorb rain and curtail the run-off, or even reduce it to slow seepage through the surface soil, which is the ideal condition. Now, the ground water is the most essential constituent of the soil, because solution, circulation, and organic assimilation are dependent on water. All the organisms and tissues are made up of this solvent of water and it constitutes a large percentage of the bodies and food of men and animals. The question of the amount or ratio of ground water in the soil is a vital one. If it is excessive it makes a sodden mass, sticky when wet, but baked when dry, so that there is no possible absorption further into it, and it sends on the water that falls on it to erode easy slopes.

The erosion begins on the farm and should be remedied there. Deep cultivation tends to absorb the product of each rainfall and to reduce the run-off. Deep cutlivation brings up fresh earth salts to the shorter rootlets, but carries down the humus and mulch to thicken the soil and feed the deepest roots. In flat lying fields and tenacious soils tile drainage is the best method of relieving the farm from the danger of too great run-off. Deep drainage permits both soil and sub-soil to crumble and disintegrate and through mechanical and chemical changes to become friable and capable of taking on and holding the right amount of moisture for plant growth, while the water which runs out through the drain is clear without carrying the soil with it, and therefore without erosion. Certain farms require what is called contour cultivation, by which each furrow is to be run in such a way as to level and to hold the water. On hilly lands strips of grass land are grown called balks or breaks, separating zones of plow land, and they should curve with the slopes and the soil being carried by the water will be caught by them and constitute the making of terrace without effort. The use of forests, of course, in foothills and deeply broken country is essential and should be combined with grazing. They will prevent the formation of torrents by making the mulch and soil deep and spongy. Of course, over all mountain divides the rentention of forests greatly helps to prevent the carrying off of the good soil to the valleys below. The proper selection of crops has much to do with the stopping of erosion.

I gather these facts from the reports of the Secretary of Agriculture as to the best method to prevent erosion. They are simple and easily understood, but they need to be impressed upon the farmers by education and by reiteration. Then the productivity of the soil might very well be increased by more careful use of commercial fertilizers. In 1907 $100,000,000 was expended in fertilizers, but the Agricultural Department is of opinion that one-third of this was wasted for lack of knowledge how to use it.

Careful crop rotation is essential because it has been found that the remains of one crop have a poisonous effect upon the next crop if it is of the same plant, but such remains do not interfere with the normal production of a different plant. Then a kind of crop may and should be selected to follow which will renew that element in the soil which the first crop exhausted.

Then there is the organization of the farm on plain business principles by which the buildings and the machinery are so arranged as to make the movement of crops and food and animals as easy and economical as possible. A study as to the character of the soil and the crops best adapted to the soil—all these are questions that address themselves to a scientific and professonal agriculturist, and which all farmers are bound to know if the product per acre is to be properly increased. We have every reason to hope, from the forces now making towards the education and information of the farmer as to the latest results in scientific agriculture, that the country will have the advantage of improvement in our farming along the proper lines. Further agricultural development is to be found in the breeding of proper plants for the making of the best crops, while the growth of livestock is made much more profitable both to the owner and to the public by improving the breed and infusion of the blood of the best stock.

The improvement in agricultural education goes on apace. All the States are engaged in spending money to educate the coming farmer, and this system is being extended so that now we have the consolidated rural school, the farmers' high school, and the agricultural college, and one who intends to become a farmer is introduced to his profession soon after he learns to read and write, and he continues this study of it until he graduates from his college and applies for a place upon the farm.

The land-grant colleges established by the Federal Government have vindicated the policy in making the grant. Now the department employes 11,000 persons, many of whom are engaged in conducting experiment stations and spreading the information all over the country. The co-operation between the State agricultural school system and the Federal Government's publicity bureau and experimental work is as close and fine as we could ask. It is difficult to justify the expenditure of money for agricultural purposes in the Agricultural Department with a view to its publication for use of the farmers, or to make grants to schools for farmers, on any consitutional theory that will not justify the Government in spending money for any kind of education the country over; but the welfare of the people is so dependent on improved agricultural conditions that it seems wise to use the welfare clause of the Constitution to authorize the expenditure of money for improvement in agricultural education, and leave to the State and to private enterprise general and other vocational education. The attitude of the Government in all this matter must be merely advisory. It owns no land of sufficient importance to justify its maintenance of so large a department or of its sending into all States agents to carry the news of recent discoveries in the science of agriculture. The $50,000,000 which has been spent for research work in the department, however, has come back many fold to the people of the United States, and all parties unite in the necessity for maintaining those appropriations and increasing them as the demand shall increase.

It is now proposed to organize a force of 3,000 men, one to every county in the United States, who shall conduct experiments within the county for the edificaition and education of the present farmers and of the embryo farmers who are being educated. It is proposed that these men shall be paid partly by the county, partly by the State, and partly by the Federal Government, and it is hoped that the actual demonstration on farms in the county—not at agricultrual stations or schools somewhere in the State, but the county itself—will bring home to the farmers what it is possible to do with the very soil that they themselves are cultivating. I understand this to be the object of an association organized for the improvement of agriculture in the country, and I do not think we could have a more practical method than this. It is ordinary not only wise to unite administration between the county and State and Federal Govermets, but this subject is one so all-compelling, it is one in which all people are so much interested, that co-operation seems easy and the expenditure of money to good purpose so free from difficulty, that we may properly welcome the plan and try it.

On the whole, therefore, I think our agricultural future is hopeful. I do not share the pessimistic views of many gentlemen whose statistics differ somewhat from mine, and who look forward to a strong probability of failure of self-support in food within the lives of persons now living. It is true that we shall have to continue the improvement in agriculture so as to make our addition to the product per acre 1 per cent of the crop each year, or 10 per cent each decade; but considering what is done in Europe, this is not either impossible or improbable. The addition to the acreage in drainage and in irrigible lands will go on—must go on. The profit to the State or to the enterprise which irrigates or drains these lands will become sufficient to make it not only profitable but necessary to carry through the project, and we may look forward to the middle of this century, when 200,000,000 of people shall swear fealty to the starry flag, as a time when America will still continue to feed her millions and feed them well out of her own soil.

LARGE THINGS TOLD IN A BRIEF MANNER

Lebanon is soon to have an eight room hospital.

A Silverton man has raised a fine crop of peanuts.

At Corvallis, prunes are being given away for the picking.

A forty acre apple orchard has just been sold near Lebanon for $25,000.

Fresh homegrown strawberries were served to President Taft at Eugene.

Coal has been discovered in the mountains near Burns, Harney county.

Marion Butler was fined $52 50 for shooting a native quail near Independence.

A Woodland, Wash., farmer recently sold $600 worth of rubarb from one acre of ground.

Specimens of pertified fig leaves have been unearthed on the farm of W. G. Goudy, near Cottage Grove.

A shipment of 24,000 pounds of clover seed has just been sent from McMinville to Seattle at 20 cents per pound.

During the past nine months the Silverton creamery has bought $30,000 of butter fat from the farmers of that section.

Scarlet fever has become epidemic at Newbridge, in Baker county.

At Godendale, Wash., a farmer sold 81 hogs that weighed 250 pounds each.

Shipments of sheep to the number of 30,000 have left Huntington within the past few days.

While landing a fish in the Siuslaw River, Joe Morris lost a $20 pair of spectacles in the stream.

Evey director of the defunct State Bank of Commerce at Wallace, Idaho, has been placed under arrest.

A party of four persons who spent two months in the Big Pine Openings have just returned to Eugene with 1,000 fish.

The Booth-Kelly mill at Springfield, employing 250 men, which was recently consumed by fire, will be rebuilt at once.

The Willamette Valley exhibit for the Omaha Land Show, consisting of a carload of Oregon's prize products, has been started East.

Jonh W. Bergman, for 20 years captain of the life-saving crew at the mouth of the Umpqua River, has just retired after a splendid record.

Two letters threatening death to Dr. U. C. Coe, mayor of Bend, unless $500 should be deposited in a can by the Deschutes, have been received by him.

At Sherwood the other day Ira Smock drove his team into a 16-foot well. The team was taken out alive by the use of a windlass, but badly injured.

There are now between 300 and 400 men at work on the Oregon Electric grade and tresties between Albany and Santiam, and about 250 head of horses and mules.

Clare Baker, a switchman in the Southern Pacific yards at Albany, rescued the three-year-old son of F. F. McTimonds, who was playing on a trestle, by running ahead of the train and leaping into the canal with the child in his arms.

Plans Enlarged

For the third time, the plans for the San Deigo Panama-California International Exposition, 1915, have been recast and enlarged. This was made necessary by the constantly enlarging scope of the Exposition. Frank P. Allen, Jr., Director of Works, announces that work will begin on the buildings in November. It is predicted that this Exposition will be the most beautiful, unique and artistic ever held.

LA FOLLETTE HAS LOTS OF BACKERS

Chicago, Oct. 17.—Senator Robt. M. LaFollette's campaign for the republican nomination for president of the United States against President Taft was launched in Illinois today by the Cook County Progressive league with a noon luncheon at which Senator Moses E. Clapp of Minnesota was the principal speaker.

Senator Clapp appealed to the voters to exercise their rights as individuals and not to allow themselves to be influenced in favor of candidates controlled or dominated by corporations.

"We of the United States should be interested in the conduct of our government more than the citizens of any other country."

Amos Pinchot of New York gave assurance that the progressives of New York would aid the fight for LaFollette's nomination.

"We will start the work in the east at once," he said.

Meaning of Names

Siskiyou; county in California and mountains in Oregon. By some authorities it is said to be a corruption of the original name given the district in California by the French—six cailloux, meaning "six boulders;" others state that it is an Indian word meaning "bobtailed horse," the mountains between California and Oregon having been so named because a famous bobtailed race horse was lost on the trail.

The ladies of the Presbyterian church give the "Queen of Fame" at the Opera House Friday evening Oct 27.