

IMPORTANCE OF EXPERT SPEAKS FARMERS' WORK ON SOIL TOPICS

CONTEST FOR SCHOOLS OF OREGON

E. F. Carleton Tells of Importance of Industrial Training for Pupils, Especially in Making Good Farmers.

BY E. F. CARLETON
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(Written especially for The Bulletin)

The State Educational Department is endeavoring to arouse interest in agricultural work through a children's state industrial contest. At the State Fair next September the boys and girls are to have the place of honor, and are to exhibit products of their own making or growing.

Last November the State Bankers' Association wrote L. R. Alderman, Superintendent of Public Instruction, asking him what their organization could do to co-operate with the schools in helping to develop the resources of Oregon, and to arouse an interest among the young people in scientific farming.

The State Superintendent replied by outlining a plan of contests to be held in each county, the local prize winners to bring their exhibits to the State Fair for a final contest. A director or supervisor was needed to organize the work and the bankers approving the plan, offered to furnish a man for this purpose. The Commercial Club of Portland, and the Oregon Agricultural College both offered their services in aiding this work. Each county school superintendent also heartily endorsed the idea, and at once set about to organize a county contest for the school children, to be a part of a county or district fair. The Bankers' Association corresponded with all of the local banks, and the Portland Commercial Club sent letters to the leading clubs in each county. Thus for each county fair there are three different interests working together for the success of the children's fair: the commercial clubs, the banks, and the county superintendents.

All Children Eligible.

All children of school age are eligible to these contests. The State Fair Board has set aside one thousand dollars for prizes, and public spirited citizens have offered suitable commodities for prizes, amounting in value to more than two thousand dollars.

The prizes include Jersey, Durham and Hereford calves; Cotswold, Lincoln and Shropshire ewes, Poland China and Berkshire pigs; Angora goats, Airedale and Scotch Collie dogs. Enterprising merchants have contributed sets of tools for boys, and for girls cooking sets, fireless cookers, sewing machines, table linen and writing desks. For both boys and girls, the poultrymen have added trios of thoroughbred chickens of almost every breed.

50,000 Children Interested

The Oregon Agricultural College has published a bulletin and prize list in conjunction with this department, giving instructions for the raising of farm products, and suggestions for the making of various articles. These bulletins have been distributed throughout the schools so that a copy will reach every child in the work. From the reports of the field director, Mr. Calvin C. Thomason, it is estimated there will be 50,000 children preparing exhibits for the school fairs.

Crook, Grant, Yamhill, Marion and Lane counties have been holding children's fairs for a number of years and the great success that these counties have had proved beyond a doubt that our undertaking is sure to have good results. The greatest good in the whole enterprise is the pride it will create among the children of being able actually to do practical work.

Practical Work Lauded.

Little girls should be proud of the fact that they can wash dishes, bake bread, and make dresses, or of the outdoor work they can do, such as gardening and raising chickens. Boys should be proud of their productions, whether things made by hand or products grown in the field. The attitude of society in general has been wrong in regard to such work. People in even the smallest towns have assumed an air of superiority over the country folk. This attitude in some measure is passing away, but more needs to be done; and I know of no better way than to educate the children so they will consider it one of the greatest honors to be able to raise a choice flock of poultry, to grow a good home garden or to raise a fine calf or pig.

Enjoy life—get a kodak at Patterson's drug store.

The best and most up-to-date map of the county is the blueprint map which The Bulletin has for sale. It shows all the new roads and towns.

Township blanks, neatly bound in books, 25 cents at The Bulletin.

PROF. SMITH'S ADDRESS AT LA PINE

Some of the Valuable Suggestions Made by Agricultural Educator, Praising Southern Country Predicting Great Dairying Success.

On April 13th Professor C. L. Smith, agricultural expert of the O.-W. R. & N. railway, delivered an important address before the commercial club at La Pine, in which he made many valuable suggestions regarding agricultural methods in that section. As Prof. Smith's remarks apply, for the most part, to all sections of the country, a portion of them is published below, through the courtesy of the La Pine Inter-Mountain.

"Now here are some of the things I want to suggest to you. One is this, go very light on theories and experiments but go heavy on the things that are known to do well here. I want to tell you some things I know and I have been here only three days and if you do not know them you ought to. One is this, you have an ideal dairy country. When you travel from the Atlantic to the Pacific ocean, from Texas to the northernmost settlement in British Columbia an agricultural expert can look out of the car window and tell you whether or not dairying is the leading industry in the community by the signs of prosperity. You have here ideal conditions for successful dairying. Let us see why. You can grow good carrots here, can't you? I know that. You can grow rutabagas here. You can grow all of the tame grasses here successfully. There is not anything else that makes quite so good butter as good tame grass. You can grow all the clovers here successfully and clover is ideal cow feed. Now I believe that eventually you will succeed in growing quite a large variety of grain here successfully, but I have known hundreds and hundreds of men carrying good substantial bank accounts as the results of successful dairying with rutabagas and pea and oat hay for cow feed. You can grow these things here all right. Here we come to the combination. You have got to grow rutabagas in order to have them and that takes work. It takes work to plant them, it takes work to cultivate them and it takes work to feed them to the cows. You can grow your mixed clovers, you can grow your pea and oat hay, etc., but you have got to have your ground and you have got to put your seed in right, and then it will not always grow the first time, but you have to keep at it. These things will grow here because I have seen them growing here and under unfavorable conditions too. Within three miles of where I am standing I saw some of the finest samples of English rye grass I have ever seen. English rye grass is one of the best grasses I ever heard of. It is from English rye grass and turnips that some of the English gentlemen have retired just making beef for the London market. Of course, there is more and quicker money to be made in dairying than in beef raising and you have the stuff here to do both with. I went way up to the north end of Vancouver island and found there an old Scotchman doing successful dairying with 45 cows with peas and oat hay and timothy hay and rutabagas. He was growing them when they have about 19 cloudy days to your one and where the weather is so cold even in July that things grow very slowly, where they have frosts every month in the year. He took me in the house and showed me his books and I found that his 45 cows were returning him an income of over \$100.00 per cow per year. The second time I visited him he had returned from a visit to Scotland and said that thanks to what he had learned from me he had made a little over \$700.00 extra and he and his wife decided to spend it on a little trip. He usually raised 5 1/2 tons of pea and oat hay to the acre but he put four times 5 1/2 tons of manure on each acre of land and plowed it in deep and disced it thoroughly and then plowed in his peas six inches deep and then he looked at it every five or six days and saw that the peas were up and sprouted nicely and when they had sprouted 2 1/2 or 3 inches he drilled in white oats."

Combination of Grasses Better.
Prof. Smith spoke regarding a small bug called the aphid and stated there was no known remedy for it where the climatic condition was favorable. There seems to be some peculiar climatic condition that is favorable to them and that they will usually breed in a locality for two or three years and then leave, like the chinch bugs in the East. Prof. Smith stated that if this aphid attacked the pea and prevented the raising of pea and oat hay the best thing was to grow something it would not attack, and the nearest to pea and oat hay is winter wheat and vetch. "This makes admirable hay and is about the same in quality, only the cows have to learn to eat it, as it has a slightly bitter taste. Remember always that in feeding a dairy cow or a pig or a hen that the greater variety you feed in the ration the less pounds of feed it takes to produce a given result. Consequently pea and oat hay is much more valuable than straight pea hay or straight oat hay, therefore the winter wheat and vetch would be worth a great deal more as feed than either one of them alone. Sugar beets are a good fall feed, but in a

climate as mild as this sugar beets are not the best feed in other seasons as they are liable to sprout and when they sprout this reduces the amount of sugar. You had better grow carrots here. Mangos will produce a larger yield per acre than beets and grow better from December on. Back in Minnesota where beets do not sprout during the winter they make a good feed but I found when I came over the Rocky Mountains into the milder climate that the beets commence to sprout in the winter and this sprouting is done at the expense of the sugar in the beet, causing it to deteriorate in character."

There were a number of questions asked and in reply to them many interesting points were brought out. "Mangos," Prof. Smith said, "I have seen grown in the Pacific Northwest to the extent of from 10 to 100 tons per acre, according to how good a farmer it was that grew them. In this country if the proper cultivation were given them, ten loads of manure to the acre, plowed ten inches, mangos put in about this time of the year, thinned to about 20 or 30 inches, ought to yield 40 tons to the acre, 30 to 40 tons of carrots is entirely practical. It is easier to grow forty tons of carrots on one acre than it is on two acres, but all of these things are a matter of work. All kinds of roots I would plant in drills. Carrots will do very well drilled in about 14 inches; you can grow carrots thicker than any other vegetables. Beets should be about 16 to 18 inches and mangos 20 to 30 inches.

Fertilizing Lands.

"The very best way to handle manure is to put it out on the land as fast as it is made and disc it in so it is mixed with the surface soil. The next best thing is to get it out on the land as quick as you possibly can after it is made and disc it when you can, and then when you plow it plow it under just as deep as you can. That is the best way to use manure. The man who says that manure does harm to the land is a theorist. There is a way in which you can put manure on this land that makes it harmful and that is to dump it on in wagon load lots and let it lie there indefinitely and not disc and plow it in at once. When you are putting manure on the land spread it just as evenly as you can and you would be sur-

HELPS CENTRAL OREGON.



C. L. Smith.

prised how many loads of manure you can put on an acre of land to get it to an inch depth. The more evenly it is spread over the ground the more evenly it is mixed with the surface soil and the better the results will be, but get it mixed with the soil before it has had a chance to ferment or decay. Its principal value to this land will be its decomposing effect on the soil particles. Too much manure, as well as too much water, is injurious. Too much manure would do more harm than good.

"Through all the ages various experiments have been tried in fertilizing land to increase its productive capacity. The best agency known up to date is stable manure. After all the experiments by the scientists at the various experimental stations in this and other countries, the best known agency to increase the productive capacity of the soil is stable manure. The next best thing is plowing under a green crop, or what is known as green manure, and then there is the lazy man's way—the man who has plenty of money—which is to buy some chemical salts in a bag and sprinkle that over the land, and that sometimes will produce very satisfactory results, but it is like taking whisky for snake bites—every additional time you get a snake bite it takes more whisky to do the work. Every time you make the application of these chemical salts you have to increase the dose, while with stable manure the effects are lasting. Let me emphasize this again, first, stable manure, second, plowing under of a green crop, and third, commercial fertilizer.

Time to Seed.

"I would say that if the weather conditions are favorable and your moisture is within an inch of the surface of the ground the last of August or the first of September, I would consider that the best time to seed all kinds of grass or clover. The next best time would be about this time of the year (May 13, 1912.) I would not like to start out too early in the spring, because when the young plant is just coming out of the ground and until it has formed the third, or with alfalfa and clover the fifth leaf, it is quite sensitive to frost.

"If you are growing for pasture mix all the different kinds of grasses or clovers you can get and seed about 15 pounds to the acre. If you are seeding just for red clover somewhere in the neighborhood of ten pounds to the acre will be a plenty, provided always it is good seed and I would not advise anything but good seed. The way to see if you have good seed is to forward a sample to the Agricultural College and they will tell you its germinal qualities. I said ten pounds to the acre of good seed. Suppose you had seed that has only fifty per cent of the germinal qualities, then to make a good stand you would want 20 pounds to

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the acre. But with good seed, ten pounds will be enough if you are seeding to clover, and if mixed grasses then 15 pounds to the acre of the mixture.

"Always, if possible, have your ground plowed a considerable time before you are going to seed your grasses. When you plow it, if it is late in the fall and you are going to seed in the spring, let it lay. At any other season of the year disc it the day you plow it, work it down with a harrow, and roll it, make it an even surface all through and so solid that it is entirely practical to run a harrow over it without going over an inch into the ground. Have a firm seed bed. I approve of rolling most heartily but never under any circumstances leave a rolled surface even over night if you can avoid it—always finish with a fine tooth harrow. I saw a man today rolling some rye. I do not know whether he is going to leave it that way, but you would never have plenty of moisture under any circumstances. What we always want on the surface is a dust mulch. When the surface is left smooth it is liable to dry and form a crust and when grasses and tender plants like clovers and alfalfa sprout and come to that crust, no matter if it is no thicker than a sheet of paper, they will curl over, turn yellow and die. Roll the ground, crush or disc or anything to get your ground down firm, but have a dust mulch on the surface. You stir the ground up first to aerate it. Then you secure capillary attraction with the soil below. Thus your water rises up to where your dust mulch is on the surface and does not come over it. I have noticed that wherever I have found the dust along the roadside here that just underneath it is very wet. You want to keep that dust mulch on the surface.

Acidity of Soil.

"In answer to a question as to why clover in the river bottom land that is planted one year and apparently does well dies the next year, will say that it is undoubtedly due to the acidity of the soil. I have seen quite a little of the river land that is acid. If you have any doubt whether that is the case go to your drug store and get some litmus paper and test the soil. If it turns pink the soil is too acid. Then use 50 to 100 pounds to the acre of air slaked lime or ground lime stone to correct the acidity of the soil. But do not any of you be disappointed because a crop does not grow after one attempt. I remember 55 years ago when they were trying to start clover on the sand plains of southern Michigan and it was two or three years before they could get a stand. Up in Central Minnesota I tried three years to get a stand of clover. If you can correct the acidity of the soil so as to get a good stand of clover it will take care of itself after that.

"There is more in draining than in irrigating. There is never any good land that is irrigated that does not have to be drained afterwards. I have seen more land since I came down here that needed draining than needed irrigation.

Preparing for First Crop.

"In answer to a question as to how I would advise this land to be handled, will say I would first seed it to rye. I should plow it about this time of the year if I could or any

time until the middle of June. At the first plowing I do not think I would attempt to go over six or seven inches deep. Disc it thoroughly two or three times over, discing lengthwise, crosswise and then diagonally. Get it thoroughly settled down and then I would harrow it at least once in two weeks, about the 15th or 20th of August and, then if I could reach moist earth through that dust with my finger I would drill rye, just drill deep enough so that the seed would come in contact with that moist earth under the dust, and let it grow. You would undoubtedly get a fair stand. I would sow about 70 pounds to the acre and when that rye was about 18 to 20 inches high I would plow it under ten inches deep, and I would not plow any more in one day than I could disc thoroughly that day, and then I would follow that within four five days with a harrow and I would continue to harrow until about the middle of August and then you would undoubtedly have plenty of moisture so that you could seed it to clover. Preferably I should say clover, but here is someone who says he is a poor man and cannot afford to wait. To him I would say sow to winter wheat and vetch. Put it in as near the 15th of August as possible, provided he had moisture two inches from the surface. That would give you a hay crop for the next year. It is not practical for you to attempt to get a hay crop or crop of any other kind from this land until you have done something that will make available the fertility that is there. Your plant growth comes from the available plant food within reach of the feeding roots of your plant, and you cannot have that unless you have bacteria in your soil and you cannot have bacteria in your soil unless you have something for it to live on—that is something that has had life, some organic matter. You cannot have perfect plant growth without that and that is where a whole lot of you are going to get fooled when you get your irrigation ditch through. You will have very few bacteria in your soil and the few you will have there you will drown with water from the irrigation ditch before they get in their work, because they have to have air and when you have filled your soil full of water you have driven out the air. After you have grown a crop of rye and a crop of winter wheat and vetch or clover on your land then you can grow almost anything that you will not worry on your land, and after you have got a stand of clover on your land you will not have any difficulty in getting a stand any time. If you will follow up this winter wheat and vetch proposition and as soon as you have cut that for hay run over it with a roller and break that stubble right flat down on the ground then you can plow it and plow it good and deep. Never plow any more in one day than you can disc thoroughly. Remember your plant never takes anything out of the soil only what is soluble in water. It sweats it in.

Methods of Irrigation.

"As to the practice of flooding a field will say there are some varieties of wild grasses that would be benefited by such a process but there are fifty kinds of other things that would be killed by such a course. If some man wanted to farm as the Indians did I can understand that he might

want to use that method.

"Never let your irrigation water run over the top of the land. Air is just as necessary for proper plant growth as water and flooding drives out the air and you will have to get rid of that water to get air into the soil. I know a whole lot of people who treat their crops that way. Just as soon as a plant gets to growing nicely they turn on the water and stop its growth for a week. That is not proper irrigation. There is no other system that requires any more care and study and no other system of farming where brains count for so much as in the use of water on the land, and let me put this up to you and remember this always. The very best that anybody can say about irrigation water is that it is a substitute for deficient rainfall. Now it is not anything else. It is not fertility. It is not cultivation. It is just a substitute for deficient rainfall and never should be used unless it is needed.

Silage.

"In reply to a question concerning silage, will say that winter wheat and vetch makes excellent silage, and I do not know that you can raise corn, but I have seen good silage corn raised where they had frost every month and did not have land that is as well adapted to corn raising as your land here is. I have seen it grown successfully where conditions were more unfavorable than conditions are here. But I know you can grow vetch and winter wheat and that makes excellent silage, so does clover, alfalfa, sugar beets and mangos. You can put any green stuff into a silo. I had better give you a definition of what silage is. Silage is any green stuff canned up in an airtight receptacle, to be kept there until you are ready to feed it. It is any succulent and green stuff and it is one of the most valuable and profitable feeds for dairy stock and young growing animals that we know anything about. Where they grow sugar beets extensively they gather up the tops and put into the silo. Market gardeners growing vegetables on a large scale like cabbage, etc., trim off the leaves and put them in a silo. Canning factories do the same thing. There are some things to be observed in the matter of preparing material for a silo. The finer that stuff is chopped up before it is put in the better it will keep and the easier it is to feed it. But the silo does not add anything to the food you put in it. It is simply canned stuff. Your canned beans are just as good when you take them out of the can as they were when you put them up, but they are never any better, and so the stuff that you put into the silo is just as good when you take it out as when you put it in, provided your silo is air tight.

Growing Alfalfa.

"In regard to the growing of alfalfa, I would put my manure on in the fall of the year and I would mix it with the soil just as thoroughly as I could at the rate of about ten loads of manure to the acre, and I would plow the ground very deep and I would leave it rather rough during the winter and about this time of the year (May 13, 1912) or a week or two earlier, I would begin cultivating it, and I would cultivate it several times up to about about the

(Concluded on page eleven.)