

WHAT THE O. A. C. IS DOING FOR OREGON

Service to the state in all its needs; aid for the individual in his preparation for life, and for the community in its efforts in behalf of the citizens; in a word, material addition to the prosperity, the health and the happiness of all who come within the wide circle of its influence; this is the great aim of the Oregon Agricultural College in dignifying the industries of the state.

The home—the heart of the community—the business organizations and professions—the brains and sinews of civilization; and all the vast multitude of agricultural activities which fill the larders and coffers of the world, alike receive every year from the college gates hundreds of new recruits. These are girded with a knowledge bought by years of hard study, and eager to transmit it, through the alchemy of experience in practical application, into wisdom which will make their home, their farms and orchards, their towns and cities the best in the Northwest; and the Northwest the premier section of America, as America is the mecca of all the world.

This year 2883 persons have received special training in one or another of 20 different lines of instruction. Every county in Oregon, as well as 33 other states and eight foreign countries are represented in the enrollment of 1280 regular students on the campus, besides the 1603 in attendance during the short course and farmers' week lectures. If each of these carried away but one single suggestion which will lighten the burden of daily toil, and add to the yield of the field, or reduce the cost of production in the factory, there will be an appreciable advance in the well-being of American citizenship.

Many, however, reckon their gains from single lecture courses to be worth thousands of dollars to their business. One man saved over \$1000 in horse feed in a single year as a result of a course in scientific feeding, and at the same time improved the condition of his animals. Another estimates that more than \$5000 would have been saved him in losses on his fruit lands had he known earlier what he learned from the college division of horticulture. Years of expensive experiment and discouraging failures are saved to those who learn in advance the new gospel of the application of science to everyday affairs. Whether it be the planting of a new orchard or the establishment of an irrigation system; the raising of pedigreed swine or the management of timber lands; the survey of a new townsite or the assaying of the product of a mine, the man who neglects to prepare himself with the best possible mental equipment will fall behind.

Training for the business of life an annually increasing army of young men and women is a task calculated to test every resource, mental and material, of an institution even of the size and strength of the Oregon Agricultural College. And when there is added to this duty that of equipping newcomers to meet the exigencies of an unwanted environment and occupation, the undertaking is Herculean. But the big technical school which serves the state of Oregon is not content with even this broad field of activity. The regents have recently established the extension division which is to carry to every man, woman and child throughout the state the benefits of the college laboratories and their solution of living problems.

The recent progress of the railroads in Central and Eastern Oregon has opened vast possibilities to an immense territory hitherto too far from markets and large centers of population for any great development, agriculturally or otherwise. Rich lands which, under proper cultivation, can be made to contribute largely to the food supply of Oregon and to add to the exports of the state, are now being brought to the attention of those who are looking for opportunities to build up the commonwealth. The college has long had an eye on this section of the state, waiting and hoping for the time when transportation of crops would be sufficiently improved to warrant the establishment of experiment stations and demonstration farms in different sections.

Beginning with the branch experiment station at Union, for which 620 acres were set aside in 1901, there has grown up a series of experiment farms in various districts of the state—the Umatilla station at Hermiston and the Moro station in Sherman county established in 1909; the Talent station in Jackson county and the Burns station in Harney county last year; and this spring the Redmond and Metolius stations established in Crook county.

These are centers from which beneficent influence radiates over all the surrounding country. The problems of the particular neighborhood as to the climatic conditions, soils, crops, pests, tillage methods, transportation, roads, all things that touch the life of that particular community are studied with a view to solving the difficulties and showing on the demonstration tracts, just what can be done by the application of science to improve conditions and make the land more profitable and the life more pleasant.

This work is of immeasurable importance to Central and Eastern Oregon in many sections of which conditions are so unlike those of any other district that there are abso-

lutely new and untried paths to be trodden in the journey toward successful development of the resources of the various counties. The land is rich with promise, but it can not be conquered with the same weapons, the same methods of tillage, the same crops, as the pioneer districts won to civilization by the past generations in the East.

The work begun this year in Crook county is certain to have far-reaching results, although at present the funds provide for investigations for one year only. Even in so short a time, it is hoped that the demonstration farms at Redmond and Metolius will indicate to the farmers and ranchers of the county correct methods of irrigation tillage and crop rotation to meet the special problems of the district.

An ideal location of the irrigation work was found at Deschutes, but because it was necessary to locate the demonstration farms where they could be most quickly and easily reached by the largest number possible, it was decided that, for this year, the main farm for this work should be in a more populous district. Co-operative work is being carried on at Deschutes, however, as at La Pine and Hampton Buttes. The work is progressing well.

Frequent excursions of farmers to the stations are planned and demonstrations made of the handling of the peculiar soil conditions and of the choice and planting of crops, and like matters which may come to their attention as the season advances. Any farmer in the county who is not getting the results he desires, or things land might be made to produce heavier profits with different handling need but to write to the superintendent of the farm according as his land is in the dry farming or irrigated district, and the expert will at once give him the assistance he requires, visiting the farm if possible. Wherever a farmer is willing, his farm has been made an auxiliary demonstration farm, the director of the station planning the crop work, and the farmer carrying out the cultivation under his guidance, as an example to the neighborhood of what may be accomplished by the new methods.

In Central Oregon, as in almost every region of the state, the results of the corn breeding work of the college agronomy department are now beginning to be seen. The greatest advantage of the corn crop for the district is that it is a low moisture consumer, and because it will permit thorough cultivation and moisture conservation, it may be used as a substitute crop instead of the costly summer fallow. This will give a return for the handling of the land and at the same time get rid of the weeds and leave the ground in almost as good condition for the production of a crop of wheat the following season as though it had been merely worked over in summer fallow without a crop.

Grown in this way on the dry farm lands, the corn may be pastured off with pigs and bring as good profits, or better, than the wheat crop itself. The summer fallow can not be entirely dispensed with, but in the more favorable years and in those parts of the dry farming belt where the rainfall is higher, it may replace the summer fallow to a large extent. In the irrigated sections the corn can be replaced by no other plant in its use as a green feed in the late summer and also for silage throughout the winter.

It is these features of the corn crop that have led the college to push the development of the plant, following up the corn breeding work closely since the development of the agronomy department five years ago. In the second year of the work some excellent foundation stock to start the breeding work was found, and experiments were begun to develop two varieties. One kind is to be especially for forage for green feed or silage, for which there is great need in the dairy regions. The other is to be an early maturing ear, which will ripen and dry out sufficiently to be stored and used for early fall feeding or pastured off by pigs, yet which will give a yield of grain which may compare favorably with that of other grains.

In the variety trials foundation stocks for these two were developed by the introduction of a number of the hardest and earliest maturing kinds of corn from all over the American corn belt. The Minnesota 13 and 23 proved to be the best, and were planted in separate fields. For two years individual plant selections have been made and ear row planting tests carried out. The selections resulted in a very marked improvement in the quality of the varieties for Oregon conditions.

The scores of letters received by the department requesting seed from these two varieties at any price, attest the success of the experiments. In 1910 small samples of the best seed were sent out to various progressive farmers throughout the state for co-operative tests, and the results gave so large a demand last year and again this spring that he college can not meet it. Some growers have asked for as much as 10 to 20 bushels of seed, for which they offered \$5 a bushel. Because of the limited supply on hand and the necessity for distributing it as widely as possible through the state, but small amounts could be sent to any one farmer. Since the department hasn't funds for free work, it has been necessa-

ry to charge a round price for the seed, which has been hand selected by an expert, every ear, from the field, and then carefully cured and each ear tested for germination. Only those of good quality are sent out.

This is but one of a number of lines of work begun for the improvement of crop conditions in Central Oregon and elsewhere. Results are beginning to be seen from the barley breeding experiments. Practically no high yielding varieties, and, indeed, no pure named varieties can be procured in the state at the present time. For four years variety tests have been conducted and selections from the fields have been made. Prof. Hyslop has been making a special study of the crop, and hopes to be able to distribute seed as was done with the corn.

This year the first results of the co-operative trials will be secured from two varieties which have proven to be high yielders. Unfortunately the seed of these varieties could not be supplied by the college, but had to be imported from Wisconsin. The Southern Pacific Railway Company undertook to secure the seed and furnish it to the farmers, provided the agronomy department of the college supervised the growing of the succeeding crop. About 100 of the most progressive farmers of western Oregon were selected, and the seed distributed with special directions for growing the crop.

At the Moro experiment station, D. E. Stephens of the U. S. department at Washington, D. C., has taken charge as superintendent to have direction of the dry farming work there in place of H. Umberger, who resigned to accept another position. Mr. Stephens has been in the division of grain investigations for the government for a number of years, under Cerealist M. A. Carlton, and it is believed that he will prove eminently capable in supervising the field work at Moro.

The best results since the establishment of the station are expected this year, since the conditions of the soil are greatly improved. It was originally very weedy and in bad physical condition. Now there are over 500 plots of a tenth of an acre each laid out, to be permanently devoted to the various experiments. Every variety of grain and forage that could be secured from all parts of the dry farming world is being tested for Oregon conditions on certain of these plots. The different varieties of wheat, barley, oats, corn, sorghum, field peas, potatoes, grasses, alfalfa, and other forage plants now being tested and run into the hundreds, while a large number of plots are set aside for experiments in tillage methods best adapted to dry farming areas. Methods which have proven failures are also used on some plots, to demonstrate to farmers their futility, and new methods are also being tried in the hope that they will prove of great practical use in the Columbia basin area.

The date and rate of seeding of different dry farming crops and the effect upon the yield form the subjects of other experiments, while still another group of plots is devoted to the demonstration of some 20 different crop rotations adapted to the dry farming belt. These will be maintained for a long period of years so that final and conclusive results may be obtained on this important question.

This spring arrangements were made for a considerable planting of forest, shade and ornamental trees surrounding the buildings of the station at Moro, with an idea of determining not alone the possibility of the growing of timber and fuel, now so costly in dry farming districts, but to discover what varieties of ornamental trees will prosper and thus make the farmstead a more attractive home. It is hoped that funds will be available the coming year to permit a trial of some fruit varieties adapted to the conditions of the dry farming belt.

In a recent trip through the wheat producing areas of Eastern Oregon, Prof. Scudder found that everywhere the farmers were taking up the special tillage methods advocated by the college in the experiment station work and the demonstration trains and institutes conducted. On five large ranches visited there were seeded this spring from 10 to 40 acres each of alfalfa, field peas and corn of the Minnesota No. 23 variety, and all of these crops are being raised under the direction of Prof. Scudder. Several important changes have been made in the tillage methods used on the wheat crops as well, which, it is believed, will be beneficial.

The growing of alfalfa on dry land in cultivated rows for the production of seed is a special dry farming hobby of Prof. Scudder the past five years, and he has been delighted with the great number of letters from Central and Eastern Oregon requesting information on the subject. One of the largest wheat farmers in Gilliam county recently came to Corvallis to consult with the agronomy department, and as a result has seeded 1000 acres of alfalfa, although the experts advised against so large a planting at one time without prior experience. Near Arlington another rancher has converted 160 acres of wheat land into alfalfa fields, which he is growing under the special instructions from the college. Prof. Scudder believes it possible to get larger returns from wheat land in the shape of alfalfa seed than from the wheat itself and at the same time improve the fertility of the soil, diversify the production and reduce the amount of acreage necessary for the individual farmer. The introduction of this new crop idea marks the first great change for the better in

the dry farming agriculture of the state, the authorities believe.

The pasturing of poultry on the stubble fields to fatten them for market is an enterprise which Prof. Jas. Dryden believes might well be made a most profitable part of the Central Oregon farm schedule.

An experiment with 500 chickens in a colony of ten white canvas tents was conducted near Moro last fall, with satisfactory results.

Dr. James Withycombe, director of the Oregon Experiment Stations, estimates that, if all of the agricultural land in Central Oregon and in Eastern Oregon were under cultivation there would be in Crook county, 1,707,502 acres; in Lake county, 1,282,560; in Wheeler, 271,000; in

Harney, 1,695,040; in Klamath, 978,580; in Malheur, 1,669,360; in Grant, 574,912; in Wasco, 531,472; in Sherman, 384,960; in Gilliam, 439,466; in Morrow, 324,560; in Umatilla, 939,840; in Union, 721,066; in Wallowa, 1,071,360; and in Baker, 478,720. This means a total of 12,970,235 acres of agricultural land in Central Oregon and in Eastern Oregon, either under cultivation or about to be put under plow and harrow, which it is the hope of the college to bring to their highest point of production through the adoption of suitable crops, right tillage methods and wise rotations. The college experts will work hand in hand and shoulder to shoulder with the farmers of each district to this end.

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