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AGRICULTURAL

EXPERIMENT STATION,

Oregon
AGRICULTURAL COLLEGE

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History and Organization.

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History and Organization.

In accordance with a congressional act, commonly known as the "Agricultural College Act," the State Agricultural College of Oregon was temporarily located, in 1868, at Corvallis, Benton county, in connection with the Corvallis College.

By a subsequent act of the legislature, in 1870, the said Agricultural College was permanently located at Corvallis with the above-mentioned institution.

At that time there was but little interest manifested in scientific agriculture; and this lack of interest has, indeed, continued until very recently.

No provision has been made by the state for equipping the school with farm, buildings, apparatus, etc., but, in 1871, the citizens of Benton county purchased and gave to the college a farm of thirty-five acres, situated near Corvallis, for agricultural purposes. This is the present college farm.

From the time of its first location to the present the college has been carried on by an appropriation from the state, averaging a little over two thousand dollars annually, in addition to the interest accruing from the funds obtained by the sale of the college land donated by the state under the act of 1862. This has been consumed mostly from year to year in the current expenses of the college. The fund available for improvements, experiments and other work of such nature at no time had exceeded \$1400 up to July 1st, 1887. This decided lack of interest in scientific agriculture and insufficient appropriations for work, other than the work of instruction in the class-room, has been no doubt due to the newness of the country; its great fertility; exceptionally fine climate, in the farming portion of the state, giving cer-

tainty to crops; freedom from insect pests and the extensive tracts of grain and grazing lands to be occupied practically without cost.

In accordance with the act of the legislature of 1885 the State Agricultural College was relocated at Corvallis, Benton county, under certain provisions, the Corvallis College having first signified its intention and desire to relinquish the same to the state.

The provisions of relocation are contained in the following sections of the laws of Oregon:

SECTION 2678. That the permanent location of the State Agricultural College at Corvallis, Benton County, Oregon be, and the same is hereby ratified and confirmed; provided, however, that the citizens of said county shall, on or before the first day of January, 1889, have cause to be erected on the farm, containing thirty-five acres, in the immediate vicinity of said city, known as the agricultural College farm, brick buildings for the accommodations of the said State Agricultural College, at a cost of not less than \$20,000; and provided further, that the said farm and building shall be, on or before the said first day of January, 1889, free from all liens and encumbrances whatever.

SECTION 2687. The board of regents provided for by this act shall be appointed by the Governor during the present session of the legislature, but they shall not assume the government of said college until the building mentioned in the act shall have been completed, as aforesaid, and accepted by the Governor on behalf of the state.

All of the conditions of section 2678 had been fully complied with on July 2d, 1888, at which time the Governor duly accepted the college building provided for in said act.

The majority of the colleges endowed under the congressional act of 1862, including the Agricultural College of Oregon, did little or nothing by way of scientific investigation and experimentation respecting the principles and application of agricultural science. To supply a growing need, the act, commonly known as the "Hatch Act," provides for the establishment of Experiment Stations, was approved March 2, 1887, and reads as follows:

THE HATCH ACT.

An Act to establish agricultural experiment stations in connection with the colleges established in the several States under the provisions of an act approved July second, eighteen hundred and sixty-two, and of the acts supplementary thereto.

Be it enacted in the Senate and House of Representatives of the United States of America in Congress assembled, That in order to aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and applications of agricultural science, there shall be established, under direction of the college or colleges or agricultural department of colleges in each State or Territory established, or which may hereafter be established, in accordance with the provisions of an act approved July second, eighteen hundred and sixty-two, entitled "An act donating public lands to the several States and Territories which may provide colleges for the benefit of agriculture and the mechanic arts," or any of the supplements to said act, a department to be known and designated as an "agricultural experiment station:" *Provided*, that in any State or Territory in which two such colleges have been or may be so established the appropriation hereinafter made to such State or Territory shall be equally divided between such colleges, unless the Legislature of such State or Territory shall otherwise direct.

SEC. 2. That it shall be the object and duty of said experiment stations to conduct original researches or verify experiments on the physiology of plants and animals; the diseases to which they are severally subject, with the remedies for the same; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping as pursued under a varying series of crops; the capacity of new plants or trees for acclimation; the analysis of soils and water; the chemical composition of manures, natural or artificial, with experiments designed to test their comparative effects on crops of different kinds; the adaptation and value of grasses and forage plants; the composition and digestibility of the different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and cheese; and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varying conditions and needs of the respective States or Territories.

SEC. 3. That in order to secure, as far as practicable, uniformity of methods and results in the work of said stations, it shall be the duty of the United States Commissioner of agriculture to furnish forms, as far as practicable, for the tabulation of results of investigation or experiments; to indicate, from time to time, such lines of inquiry as to him shall seem most important;

and, in general, to furnish such advice and assistance as will best promote the purposes of this act. It shall be the duty of each of said stations, annually, on or before the first day of February, to make to the governor of the State or Territory in which it is located a full and detailed report of its operations, including a statement of receipts and expenditures, a copy of which report shall be sent to each of said stations, to the said Commissioner of Agriculture, and to the Secretary of the Treasury of the United States.

SEC. 4. That bulletins or reports of progress shall be published at said stations at least once in three months, one copy of which shall be sent to each newspaper in the States or Territories in which they are respectively located, and to such individuals actually engaged in farming as may request the same, and as far as the means of the station will permit. Such bulletins or reports and the annual reports of said stations shall be transmitted in the mails of the United States free of charge for postage, under such regulations as the Postmaster General may from time to time prescribe.

SEC. 5. That for the purpose of paying the necessary expenses of conducting investigations and experiments and printing and distributing the results as hereinbefore prescribed, the sum of fifteen thousand dollars per annum is hereby appropriated to each State, to be specially provided for by Congress in the appropriations from year to year, and to each Territory entitled under the provisions of section eight of this act, out of any money in the Treasury proceeding from the sales of public lands, to be paid in equal quarterly payments, on the first day of January, April, July and October in each year, to the treasurer or other officer duly appointed by the governing boards of said colleges to receive the same, the first payment to be made on the first day of October, eighteen hundred and eighty-seven: *Provided, however,* That out of the first annual appropriation so received by any station an amount not exceeding one-fifth may be expended in the erection, enlargement, or repair of a building or buildings necessary for carrying on the work of such station; and thereafter an amount not exceeding five per centum of such annual appropriation may be expended.

SEC. 6. That whenever it shall appear to the Secretary of the Treasury from the annual statement of receipts and expenditures of any of said stations that a portion of the preceeding annual appropriation remains unexpended, such amount shall be deducted from the next succeeding annual appropriation to such station, in order that the amount of money appropriated to any station shall not exceed the amount actually and necessarily required for its maintenance and support.

SEC. 7. That nothing in this act shall be construed to impair or modify the legal relation existing between any of the said colleges and the government of the States or Territories in which they are respectively located.

SEC. 8. That in States having colleges entitled under this section to the benefits of this act and having also agricultural

experiment stations established by law separate from said colleges, such States shall be authorized to apply such benefits to experiments at stations so established by such States; and in case any State shall have established, under the provisions of said act of July second aforesaid, an agricultural department or experimental station, in, connection with any university, college or institution not distinctly an agricultural college or school, and such State shall have established or shall hereafter establish a separate agricultural college or school, which shall have connected therewith an experimental farm or station, the Legislature of such State may apply in whole or in part the appropriation by this act made, to such separate agricultural college or school, and no Legislature shall by contract express or implied disable itself from so doing.

SEC. 9. That the grants of money authorized by this act are made subject to the legislative assent of the several States and Territories to the purposes of said grants: *Provided*, That payments of such instalments of the appropriation herein made as shall become due to any State before the adjournment of the regular session of its Legislature meeting next after the passage of this act shall be made upon the assent of the Governor thereof duly certified by the Secretary of the Treasury.

SEC. 10. Nothing in this act shall be held or construed as binding the United States to continue any payments from the Treasury to any or all the States or institutions mentioned in this act, but Congress may at any time amend, suspend, or repeal any or all the provisions of this act.

Approved, March 2, 1887.

It will be observed that the "Hatch Act" creates a department which is an integral part of, or co-ordinate with, the act of 1862, the latter creating a college of instruction, the former, that of experimentation.

Section 2 of the "Hatch Act" specifies the object and duty of the station which is so broad that it covers every department of agriculture; and therefore, every person engaged in agricultural pursuits of any sort, should consider that he has a just claim upon the work of the station.

Section 5 provides for the necessary expenses of conducting investigations and experiments; also for printing and distributing the results. It will be observed, on referring to said section, that no adequate provision is made for erection of buildings and purchase of suitable land for the work designed; hence it would seem to contemplate that these facilities would be furnished by the respective states. Since these are wanting, it becomes the plain duty of the state to

furnish them at its earliest convenience, as the lack of these greatly retards the effective use of the station funds at the present time.

In accordance with the provision of section 9, the Governor assented to the said grant in March 1888, and designated the board of regents of the State Agricultural College, as the Board of Control of the station.

At their first meeting, July 2d, 1888, the board appointed E. Grimm, B. S., Director of the station, and in August elected E. R. Lake, M. S., ~~Agriculturalist~~ *Horticulturalist*; P. H. Irish, Ph. D., Chemist.

Enforced delay in the organization of the Station Council made it impossible to enter into the experimental work this fall; but no time has been lost in the work of preparation for our future work. The farm had to be brought into suitable condition, quarters had to be provided and apparatus purchased before the active work of experimentation could be commenced. This work has been prosecuted with vigor. A portion of the farm has been tile-drained; soil thermometers planted over the field, as a first step toward a study of the physical properties of the land. The chemical laboratory is being equipped, and is nearly ready for active work. While this department is not as well equipped as might be desired, yet it is prepared to do valuable work for the station and will grow as the other departments and needs of the station may demand. In the department of horticulture, work is being rapidly pushed. A forcing house is nearing completion, and the ground is being prepared for spring planting.

The land for the use of the station is the old college farm before mentioned. This land is a fair type of a large portion of the Willamette valley lands, especially in the counties of Marion, Linn, Lane, Benton, and in portions of the other counties. It affords exceptional opportunities for experimental work of great importance to many of our farmers. The soil of the farm is varied in character, and is such as to give ample opportunity to study the physical properties of a very important class of soils. It can not be expected that a farm of thirty-five acres, not chosen with re-

gard to its particular fitness for the work of the station, will furnish land suitable for all the work of the station. While the land is suited for certain lines of important work, it is certainly unsuited for experimental work in orcharding, grape and peach growing; thus, while it may grow excellent grass, clover and the majority of our ordinary farm crops, it is positively unsuited for many other things. The extent of the station work must, therefore, be limited by the quantity and quality of our land.

This gift, to the state, of thirty-five acres ought to be supplemented by additional purchase for college and station use, in order that the work may be extended, as far as practicable, into the different fields of agriculture.

WORK OF THE STATION.

To state explicitly what will or can be done at this time is impossible. The act of congress providing for the work of the station gives a wide and varied field for its operations. Owing to the conditions above mentioned the work of the station for 1888 must be largely preparatory. The council recognize the fact that to attempt to cover too much ground at present must lead to failure; but an endeavor will be made to select such work as it is thought will prove of interest and practical value to the farmers.

The great variety of soil and climate of Oregon gives great diversity to our agricultural interests. Hence it will be manifestly impossible for the station at present to begin all the work that is needed in the different sections of the whole state. But as our facilities are increased, our lines of work will broaden.

The subjects which will receive the attention of the station at present are the following:

- I. Study of the Soils Found on the Farm, and in Different Parts of the State. This will include a study of their natural conditions, the effects of drainage, of different modes of tillage, etc., best methods of maintaining and increasing their fertility, and the use and value of fertilizers. Additional work is planned in experimentation with different varieties

and methods of cultivation of grains, grasses, roots and forage crops; on the sugar beet, with a view to increasing its sugar contents; with different varieties of apples, prunes and peaches, studying the conditions most favorable for their highest development; on old orchards, including cultivation, best methods of protecting from moss; with forest trees and native grasses and clovers.

In addition to this our chemist will make a thorough study of the chemical composition of our grains, from different parts of the state, of fodders and mineral waters. Thorough investigation of our insect pests and noxious weeds will be made; and of the diseases to which our plants are subject with remedies for the same.

As "climate affects the cultivation of the soil. limits the various crops and determines the nature of the live stock suited to a given place," we hope soon to make the study of climate an important part of the work of the station. It is well known that there are at least three distinct climatic conditions represented by the eastern, western and southern sections of our state, and to make the work of the station more effective we desire, as soon as possible, to establish branch stations in these sections to study the special problems suggested by the conditions found in these several localities. This seems to be more urgent at this time, from the fact that orcharding, which a few years ago was not profitable, on a large scale, is now the leading and growing industry of certain portions of our state, and this may be greatly benefited by judicious work at slight cost. Land suitable for this kind of work is offered, free of charge, to the station in Benton county, and we have no doubt but that in other portions of the state suitable lands can be secured for wider study of these very important branches of agriculture.

It will be seen that certain work of great importance to the state is not included in the above plan such, for example, as the investigation of the relative value of the various breeds of cattle for the purpose of the dairy or for beef; relative cost of producing milk, butter, cheese, etc., and the most economical method of feeding to secure the best results. These are not included in our scheme of work because it is

impossible, with our present equipment to do work of value upon them.

It therefore appears desirable that provisions be made at once for the erection of suitable buildings and purchase of land to render possible the carrying out of experiments in these lines. The station will have facilities for analyzing soils, dairy products, stock foods and the mineral waters of the state; for investigating all diseases of plants; for identification of insect pests, and study of best methods of protection against their ravages; for testing purity and vitality of seeds. Such work will be done free of charge for the citizens of Oregon, when of public interest. The station can not undertake private work.

The council desire to be in communication with the farmers of the state; correspondence is solicited from those interested in the work of the station, giving suggestions, experience and any information that may aid the station in its work.

Bulletins will be issued quarterly, and will be sent free of charge and postage to every newspaper of the state, and all persons engaged in farming who may desire them. Those desiring the future bulletins of the station will signify the same by postal card.

All communications should be addressed, Director, Oregon Experiment Station, Corvallis, Oregon.

E. GRIMM, Director.