NEW DRAFT.

# SEVENTY-SEVENTH LEGISLATURE

## HOUSE NO. 503

*In House of Representatives, March 4, 1915.*

*Reported by Mr. Peterson from Committee on Agriculture and ordered printed under joint rules.*

*C. C. HARVEY, Clerk.*

## STATE OF MAINE

IN THE YEAR OF OUR LORD ONE THOUSAND NINE HUNDRED AND FIFTEEN

AN ACT to Provide for Conducting Scientific Investigations bearing upon the Agriculture of Aroostook County.

*Be it enacted by the People of the State of Maine,* as follows:

Section 1. The Maine Agricultural Experiment Station in addition to investigations now conducted by it, shall conduct scientific investigations bearing upon the agriculture of Aroostook County for the purpose of making effective section 4 of chapter 190 of the Private and Special Laws of 1913.

Sect. 2. There shall be appropriated from the State Treasury the sum of five thousand dollars for the year nineteen hundred and fifteen, and the sum of five thousand dollars

for the year nineteen hundred and sixteen in favor of the Maine Agricultural Experiment Station, and the same shall be expended by the director of said station in executing the provisions of this act. The payment of said appropriation shall be made quarterly in advance on the order of the Governor and Council who shall draw up a warrant for that purpose.

## STATEMENT OF FACTS TO ACCOMPANY AN ACT TO PROVIDE FOR CONDUCTING SCIENTIFIC INVESTIGATIONS BEARING UPON THE AGRICULTURE OF AROOSTOOK COUNTY.

The Experiment Station at Orono is situated almost on parallel 45 degrees North latitude and hence is the northernmost experiment station in the East, as parallel 45 runs along the northern ends of New Hampshire and Vermont and north of the State of New York.

The chief agricultural parts of Aroostook County begin at about latitude 46 and run above latitude 47. The climate, soil and general conditions are very different in Aroostook County from other parts of Maine. The results that are obtained in plant investigations in other parts of Maine and the East are not strictly applicable to Aroostook County. There are possibilities of frost in each month of the year. It has a much shorter growing season; greater summer rainfall and other climatic and soil differences.

Varieties of potatoes fairly well adapted to Aroostook County have been worked out, and the studies which are being made by the United States Department of Agriculture in Aroostook County may give rise to varieties that are better adapted to the country than either the Cobbler or the Green Mountain, which are now so generally grown. There is, however, some field work with potatoes which should be done, as to the methods of applying fertilizer, the amount of fertilizer to apply, methods of culture, and in general the fertilizer requirements of the potato in Aroostook County under Aroostook soil conditions.

As long as potatoes are the chief industry there will of necessity be a very large acreage of small grains, grasses and clover grown annually. There is every reason to believe that a proper breeding and selection of oats and wheat would result in the development of strains and varieties far better adapted to Aroostook County, as regards frost resistance, shortness of

time of growth, rigidity of straw, and, most important of all, yield of grain, than any now in existence. Oat breeding conducted by the Maine Agricultural Experiment Station at Highmoor Farm since its purchase by the State indicates great possibilities in that section for the improvement in yield and quality of oats and straw. Several varieties which originated with the Mane Station which were tested out for the first time upon an at all adequate scale in 1914 showed a yield of over a hundred bushels per acre. While it is not supposed that it will be possible to bring the yield on general field crops up to anything like that amount, yet it is obvious that if the crop of oats could be increased five bushels per acre in Aroostook County that it would pay manifold the cost of the maintenance of the experimental farm in the sounty.

Aroostook County grew more wheat formerly than it does now, and wheat can be well grown, with large yields and of very good quality, but the trouble with the wheat that is grown in Aroostook County is that it is too soft—carries too much starch in proportion to its gluten content—and does not make what is known in the trade as a "strong" flour. Preliminary studies made by the Maine Agricultural Experiment Station some fifteen years ago indicate that it is impossible to correct this by bringing in to the county wheats which have been bred in other parts of the country. There is every reason to believe that by careful attention to breeding and selecting, and by cross-pollination of wheat already produced in the county, that new varieties could be produced that would not only give better yields than the present strains, but would also give wheat that would make a flour that is typical of the bread flours of commerce, which is now not possible with Aroostook grown wheats.

Clover and timothy also can be materially improved in their yields by breeding.

It is to be noted that these improvements and increased yields will be produced not by any added cost of labor or any added cost of fertilizer, but will be produced merely by developing new varieties better adapted to the climatic and soil conditions of the county than any that we now have.

The rate of seeding of small grains in Aroostook County varies, but it is generally excessive as compared with rates that have been found to be the best in other parts of the country.

It is possible, of course, that practice has developed the right method of seeding to get the maximum results. This is a matter that needs to be studied, and has already been begun upon Aroostook Farm. The studies would need to extend over a series of years, taking all sorts of climatic conditions into account and various varieties of oats in order to learn which amount of seeding is better adapted to Aroostook County conditions.

The question as to whether nitrate is necessary in Aroostook County fertilizers requires an investigation running over a series of years, and such studies have already been begun. The question of the potash supply, which has come so prominently to the front this year, suggests the necessity of finding out the minimum of potash that can be successfully used in crop production in the county.

The county is doing practically nothing in horticultural lines, and there is large need for work in developing varieties and strains of small fruits and vegetables adapted to the climatic and soil conditions of the county.

While Aroostook County will probably never be an apple producing county so far as a money crop is concerned, it is important that orcharding be studied and varieties found or produced that would be adapted to Aroostook. Early apples are fairly well taken care of. There is today no good winter apple produced in the county.

While plant production is the first thing to be taken up, there is little question but that some form of animal husbandry must be found that is adapted to the county in order to bring its agriculture to and maintain it at the highest point.

The investigations at the Maine Agricultural Experiment Station have developed poultry management more than perhaps all the other stations in the country put together. This needs to be studied in its relations to the climatic conditions of Aroostook County. There seems to be no special reason why Aroostook County should not produce the eggs and poultry which it eats.

The Maine Agricultural Experiment Station is the only scientific agent the State possesses that is qualified to undertake these scientific investigations needed to increase the value of Aroostook County's agriculture. The time element (Aroostook Farm

is seven hours from Orono) and the cost of transportation (nearly nine dollars a trip) make it impossible to handle the details of the studies directly from the home office of the Station. The impracticability of handling the work from Orono was demonstrated in 1914 when the gift of $2,500 from the Bangor and Aroostook Railroad and free railroad transportation (possible before the Public Utilities Act became law), made it possible to begin field studies at Aroostook Farm. What in practice would amount to something very much like a branch station will have to be maintained. To obtain the services of a man well enough trained to undertake the scientific breeding of plants needed to carry out this work will demand from $2500 to $3000 a year. To obtain competent scientific assistants will cost from $3000 to $4000 more. Clerical and other help in handling the statistical data will cost from $1500 to $2500 a year. Equipment, maintenance, farm foreman, labor and supplies will cost from $5000 to $8000 annually.

That is, the necessary cost of carrying out the investigations will be about $15,000 annually. A part of this could be expected to be received in returns from sale of produce. The experimental work cannot be conducted without hiring high-priced, well-trained specialists.

The kind of investigations needed for Aroostook County are expensive of time and effort. It may be necessary to breed thousands of strains before the best oat is found. But when found the returns will be many fold, and what is true of new varieties of oats is equally true for wheat, for barley, for clover, for timothy, for beans, for peas, for small fruits, and probably for the apple.