PUBLIC DOCUMENTS

OF THE

STATE OF MAINE

BEING THE

REPORTS

OF THE VARIOUS

PUBLIC OFFICERS
DEPARTMENTS AND
INSTITUTIONS

FOR THE TWO YEARS

JULY 1, 1924-JUNE 30, 1926

AGRICULTURE OF MAINE

TWENTY-SECOND REPORT

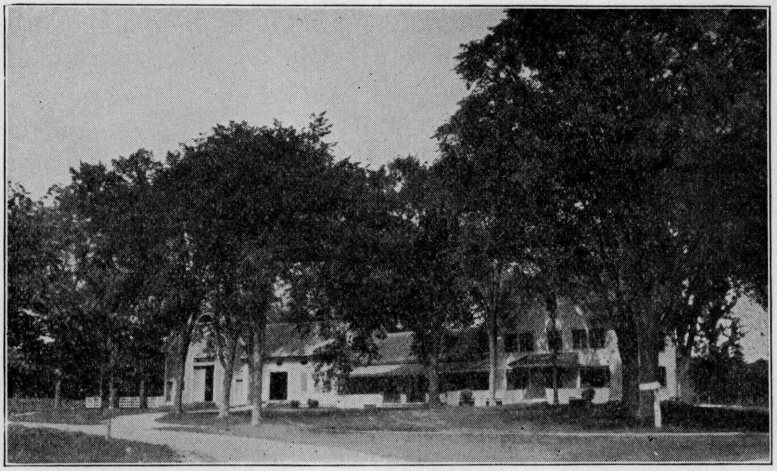
OF THE

Commissioner of Agriculture

OF THE

STATE OF MAINE

July 1, 1924 to June 30, 1926



A typical home of a successful Maine Farmer

Maine Farmers Make Good
on Maine's Fertile Farms,
Gold Mines of the East

DEPARTMENT OF AGRICULTURE

To His Excellency, Ralph O. Brewster, Governor of Maine, and Council:

In compliance with the provisions of our Statutes, I have the honor of submitting to you the accompanying Report of the Department of Agriculture for the period from July 1, 1924 to June 30, 1926.

Respectfully submitted,

F. P. WASHBURN,

Commissioner.

Augusta, Maine, June 30, 1926.

MAINE DEPARTMENT OF AGRICULTURE

Commissioner,	F. P. Washburn, Augusta
Deputy Commissioner,	*Vacant*

Staff

Chief, Division of Inspection,	A. M. G. Soule, Augusta
Chief, Division of Plant Industry,	E. L. Newdick, Augusta
Chief, Division of Animal Industry,	H. M. Tucker, Yarmouthville
Chief, Division of Markets,	C. M. White, Augusta
Dairy Inspector,	Clayton P. Osgood, Fryeburg
Assistant Dairy Inspector,	Gordon W. Drew, Portland
Sheep Specialist,	C. H. Crawford, Dexter
Horticulturist,	George A. Yeaton, Chelsea
Deputy Sealer of Weights and Measures,	Clarence O. Brown, Brewer
Field Agent, Division of Markets,	Fred C. Sturtevant, Hebron
Field Agent, Gypsy Moth Work,	M. H. McIntire, So. Berwick

Chief Clerk

Dorothy M. Lippincott, Augusta

Clerks and Stenographers

Blanche E. Yeaton,	Augusta
Ethel Quinn,	Hallowell
Viola A. Rice,	West Gardiner
Doris E. Cram,	Litchfield
Margaret E. Campbell,	Litchfield
Beatrice Roderick,	Augusta
Gertrude H. Grimes,	Chelsea

REPORT OF THE COMMISSIONER OF AGRICULTURE

Herewith is submitted the report of the Department of Agriculture for the period covered by the fiscal years 1925 and 1926. Detailed statements of the work performed and service rendered will be found in the reports of Division and Bureau heads and it is only necessary to present here, a brief outline of the achievements and policies of the Department and to set forth our Agricultural situation as it appears at the date of writing.

As has been frequently pointed out in previous reports, the activities of this Department are largely devoted to regulatory and police duty. However appreciative we may be of agricultural conditions and sympathetic toward our farmers in the problems they are everywhere encountering, yet it is true that a large proportion of our energies and funds are and must continue to be, by statutory requirements, devoted to safeguarding the interests, health and welfare of our people at large. This situation is not peculiar to Maine since it appears in the program laid down for the Agricultural Department of practically every Eastern State and it is believed that with the resources of our Experiment Station, College of Agriculture and Extension Service to fall back upon, and the cordial relations and understanding now existing between these institutions and this Department, a fairly adequate program of agricultural development, improvement and encouragement has been worked out.

Aside from and additional to our regulatory duties the efforts of this Department have been most cheerfully and faithfully devoted to the strengthening of the agricultural program of our State. Wherever assistance was requested, whenever advice was asked and wherever encouragement was needed, we have attempted to function along the lines contemplated by those who framed the original law creating a State Department of Agriculture.

The biennium just passed has brought many changes to the farmers of Maine, since it embraces one year of exceedingly low cash returns and one of the highest total crop values ever recorded.

And through all their vicissitudes, in rising or falling fortune, our husbandmen have given to their fellow-citizens much to be proud of and many assurances that they will work out their problems in their own time and that they are not waiting or hoping for relief through legislative nostrums or congressional panaceas. The complete history of industrial effort in our state does not afford a finer example of courage, determination and sacrifice than that given by our potato growers in the spring of 1925, when, after four years of high production costs and low returns, they marshalled their few remaining resources and such credit as they could command and made a practically normal plant. The result was a crop that sold for seventy millions of dollars and brought financial relief not only for themselves but to every town and every business concern in the state.

The total acreage of all crops for 1924 is given as one million, five hundred and seventy-six thousand with a total crop value, exclusive of livestock products, of forty-six million dollars, and in 1925 the acreage increased to one million, six hundred thousand and the value of products to ninety-six million, five hundred thousand dollars. These who so frequently express the fear that Maine agriculture is decadent and that our farms are not maintaining the production of former years will find comfort in a comparison of these figures with those of past periods. The average crop value for the two years just closed was seventy-one million, two hundred and fifty thousand dollars, while that for 1909 was thirty-three million, seven hundred and fifty thousand dollars and going back twenty-five years, to 1899, the total for all crops was nineteen million, three hundred thousand dollars. With all due allowance for a raised scale of prices and values it will be acknowledged that agriculture with us, is still a going business and that it will continue to be the chief resource of our people.

Animal husbandry in all its branches appears to be prospering and this Department has been able to strengthen the position of our dairy farmers by pushing the work of Tuberculosis Eradication with unprecedented force. Already an accredited area has been set up within the State and two large counties will be added to it this year. It is not too much to hope that, with the coming of the year 1932, the entire State will be declared disease free and with that event the expense of paying for reactors will cease and we shall have only to protect ourselves from infection from with-

out. In the meantime the reputation of the healthy herds of Maine is spreading and a steady demand for our surplus animals may be expected.

The fluid milk market in New England cities still continues to show at times a heavy surplus, and this has had its adverse effect upon the returns to our producers. This danger is augmented by the coming of the tank car and the threat of an invasion of western milk. Again, prices have been borne to a low level through the operations of the chain, or cash and carry stores which are said to supply themselves with cheap "outlaw" milk wherever it can be secured and to dispose of it at a very low profit or at no profit whatever, merely as a trade stimulant. Obviously milk producers all over New England should consider this situation carefully and be prepared, if the necessity should arise to turn a greater proportion of their product into butter, cheese, cream and ice-cream.

With the collapse of the Maine Potato Growers' Exchange in 1925, the Department of Agriculture found itself in a position to render a distinct help to the potato industry through its Shipping-point Inspection Service. The appropriation for this purpose, unused in 1924, was immediately in great demand and it was indeed fortunate that it was available. Two thousand seventy-three cars of potatoes were inspected and our cordial relations with the U. S. Department of Agriculture enabled us to supply a Federal as well as a State certificate of quality which has prevented many controversies and losses. I believe that this Shipping-point Inspection may be applied also to apples and, while carried on as a marketing project, strengthen the hand of apple law enforcement.

One other suggestion seems pertinent here, the tremendous influx of summer visitors to our State must necessarily bring an increased demand for farm products and many farmers who have been discouraged because of lack of outlet now find a market at their very doors. But while complaining of the cost of transportation and the inefficiency of our marketing system we are not taking full advantage of this new opportunity. Too many of our best farm locations are being perverted to such uses as the sale of gasoline and soft drinks while our country roadsides everywhere grow hideous with a multiplicity of signs calling attention to non-essentials. Our farmers will do well to study the needs of our

tourist traffic along the lines of fruit, vegetables, dairy and poultry products to be offered at attractive and appropriate roadside stands and at prices that offer some advantages to both consumer and producer.

The two past years have brought their discouragements and disappointments to those who look upon cooperative effort as a solution of some of the farmers' problems and we note with regret the passing of the Maine Potato Growers' Exchange, the largest cooperative effort ever undertaken in the Northeastern States, and the taking over of the Maine Farmers' Exchange by a private concern. The causes for these breakdowns are not difficult of determination and it must not be inferred that the spirit of cooperation is dead among our farmers or that we shall not, in due time, perfect other useful and lasting organizations. Much has been learned from these past experiences and over the ashes of our failures we shall build anew, guarding against the elements that have brought disaster in the past.

Certain lessons may be learned from the story of cooperation in Maine and certain principles laid down as essentials in successful cooperative effort. It may be said that organizations of farmers for either buying or selling can succeed only when promoted from within and backed by an insistent demand from those whose interests are most vitally affected. Few indeed, are the cooperatives that live when pushed from without or instigated by hatred, distrust or suspicion of existing agencies. A sufficient volume of business should be assured and an adequate plan of financing which should in all cases include the establishment of a reserve fund.

With the experiences of the past in view it is not surprising that many careful observers have come to look with doubt upon the value of the long time contract as a binding force among cooperatives, since only faithful, unswerving member-loyalty may be fully relied upon.

There are many valuable and active cooperatives now operating in our State and their success is a matter of moment to all classes since they strive for the attainment of two worthy objects, a better return to the farmer for his labor and a better product for the consumer. The Aroostook Federation of Farmers now does a large business in manufacturing and distributing fertilizers. Cooperative cheese factories are successful at Monroe and New-

burg. The Maine Poultry Producers' Association handles the product of two hundred thousand hens. Fruit associations abound, the most noteworthy being the Maine Fruit Growers' Exchange and the Winterport Fruit Growers' Ass'n. Several communities have cooperative canneries, while there are probably not less than sixty Farmers' Unions and Grange stores distributed over the State. The Turner Center System is now our largest cooperative since a majority of its stock has passed into the hands of farmer-producers. Its successful and satisfactory operation under the new management is earnestly hoped for.

The Maine Sheep and Wool Growers' Association has done much to encourage its members in the breeding of more and better sheep and to secure for themselves a profitable outlet for their wool. This Association receives, indirectly, some financial assistance from the State inasmuch as a part of its overhead is paid from Department funds, a situation not wholly in keeping with our general policy toward cooperatives. With the best interest of the organization closely at hand, I still believe that the time is near when the State should gradually withdraw its financial assistance leaving this Association self-supporting and self-reliant.

In many instances it has been necessary for this Department to discourage the organization of new cooperatives where it was evident that only failure and fresh discouragements could follow, but in every instance where assistance was asked for by any worthwhile organization either in membership campaigns, installation of bookkeeping systems or improving quality of output, such service has been cheerfully rendered.

The Department looks with satisfaction upon the development of the Maine Certified Seed Potato business, since to us has been given the administration of the laws and regulations covering this important product. Notwithstanding the active advertising campaign put on by other states, the fact remains that Maine seed is everywhere in demand and that one half of all the quality seed potatoes sold in the United States are produced here.

The educational or institute work of the Department is still largely carried out through the medium of the Grange and to this organization in all its branches, subordinate and pomona, all over the state, our thanks are due, for the opportunities given to present our lessons and recommendations, and for the cordial greetings we have received and the firm friendships formed.

Whatever measure of success may have attended our Departmental efforts is due fundamentally to the splendid service and loyal support rendered by my subordinates in field and office. Beyond question the enviable results we have achieved in enforcement of food laws, eradication of tuberculosis, in our winning of the seed potato business of the country and in setting up a high standard of quality for farm products, may be credited to the long experience and outstanding ability of my Division Chiefs, Bureau Heads and Field Workers. Such service is without price since it knows no limit of hours, thought, or of hardship and I am not entirely satisfied with the compensation now received of the State, by these men. The last Legislature provided a considerable increase in our salary appropriation for the definite purpose of substantially raising the level of salaries paid the men who are working with me, and a part of this increase has been so applied. I am hopeful of a still further recognition of the merit of these workers, believing such to be in the line of good policy and justice.

Following a precedent already established, there follows a brief statement of conditions surrounding some of the principal lines of agricultural production in Maine. The figures given are from the "Crop Review" an annual compilation worked out by the Maine Department of Agriculture and the New England Crop Report Service cooperating.

Potatoes

Two years ago, I discussed the serious financial difficulties facing many of our potato farmers at the close of the 1923 season, and this condition was only aggravated by the heavy overproduction and consequent low values of 1924. In this year, one hundred forty thousand acres of potatoes were planted in Maine with a total yield of forty-four million, one hundred thousand or a state wide average of three hundred five bushels per acre, establishing a new record for all states. The cost of handling the crop was correspondingly large and prices steadily declining throughout the year reduced our growers to a degree of discouragement which, had it prevailed in any industry except agriculture, would have suggested a complete suspension of production. With characteristic courage and tenacity, however, our growers planted in 1925 an acreage only six thousand below that of the preceeding year and the result makes up one of the

happiest chapters in the story of Maine Agriculture, for, with a decrease in production of ten million bushels or twenty-three per cent, there was an increase in returns of nearly four hundred per cent and many potato farmers were able to discharge obligations incurred during the proceeding years and in some instances to make substantial improvements upon plants and equipment. The crop of 1925 returned sixty-eight million dollars based upon December first values and was the largest in both volume and value produced in any state that year. We may also claim to have led the country in production in 1924 if comparison had been based upon quality and proportion of salable stock.

Six hundred, thirty-five thousand barrels of certified seed were sold in 1924 and four hundred and twenty thousand in 1925. Entries for certification have been considerably reduced in 1926 as was to be expected in a period of high values for table stock. It should be remembered, however, that much inferior seed has this year been used all over the country. The results will be unsatisfactory, and the reaction sharp. Maine growers will do well to plan for an increased demand for quality seed during the coming two years.

Corn

The production of sweet corn for canning has gained during the past few seasons. In 1923, eleven thousand ninety acres produced thirty-three thousand, two hundred and seventy tons; in 1924 we planted thirteen thousand, three hundred and ninety acres and harvested thirty-five thousand, eight hundred and fifty tons, and in 1925, fifteen thousand, six hundred and thirty acres yielded forty-four thousand, seventy-seven tons, and in general a fixed price of four cents per pound has prevailed. The season of 1926 has to date been unfavorable for corn and some reduction in yield may be looked for.

Apples

In considering apple yields and values for 1924, 1925, or any other year, one is struck with the startling disparity between figures of total production and those showing the quantity of salable or commercial apples. In 1924, for example, the total yield is given as three million, two hundred and forty-one thou-

sand bushels of which only six hundred and sixty thousand barrels, or slightly more than one half, are classed as commercial, and for 1925, the figures are three million, three hundred five thousand bushels and six hundred forty-five thousand barrels respectively. If these returns are correct, it is evident that too much unsalable fruit is being grown and that the campaign being constantly pushed by the Fruit Growers' Associations and by the Department of Agriculture and Extension Service for better varieties, greater care of orchards and more careful grading, is well directed.

The Associations alluded to have done much to improve the quality and grading of the product sent out and their work is to be commended. Indeed, we are almost at a point where we may look forward to a time when these organizations of fruit growers or some other agencies, may set up within the State, one or more packing and storage houses, large enough to hold and distribute apples at all seasons, to which retailers may look for a constant and regular supply. The chief reason for the constant appearance of western apples in our markets is found in the fact that the market man knows exactly where they may be bought at all times and is never certain of any regular supply of Maine grown fruit.

In general apple values have ruled low. During the two years and during 1925 at least, apple growers have not shared the prosperity attending other lines of production.

Hay

Production of hay in 1924 was slightly above normal or one million, four hundred thousand tons, and in 1925 we harvested another record breaking crop comparable with those of 1922 and 1923 which ranged above the one and one half million ton mark. Indications point to a considerable reduction for 1926 which may not be entirely to our disadvantage. For several years we have had a heavy carry-over of hay and a reduction that permits the cleaning up of surplus stock with a profitable return will not be looked upon as any calamity.

Grain

A normal production of oats in 1924 amounting to four and one half million bushels was followed by the unprecedented crop of six million, one hundred and sixty-five bushels harvested in 1925,

this being at the average rate of forty-five bushels per acre, seldom, if ever, equalled in this or any other state.

Wheat growing which had steadily declined with us after the war period was revived in 1925 and a total yield of two hundred eighty-six thousand bushels reported. Barley also gained some seventy thousand bushels over the five year average and buckwheat rose from two hundred eighty-eight thousand bushels in 1924 to four hundred and sixteen thousand bushels in 1925. Practically all of our cereal products are consumed within the state.

Live Stock and Live Stock Products

The number of cattle in Maine kept for milking purposes continues to decline. In this classification there were in 1923, two hundred and sixteen thousand head, in 1924, two hundred and ten thousand, and in 1925, two hundred and six thousand. This does not mean, however, any serious decline in production. It is usually the poorer cow, the "boarder" or "robber" that is removed from the herd in times of highly priced feed and labor and we note that production per cow advanced from 4,558 pounds in 1924 to 4,745 pounds in 1925.

The average milk price was at the low level of two dollars and seven cents per one hundred pounds in 1924, but had advanced to two dollars and seventeen cents by the middle of 1925 and is today, ten cents above last year's figure. With a small decline of feed prices, most dairymen are now able to operate at a profit.

Of horses and hogs, the population remains the same and it may be said that in the latter case, it is lamentably small, an average of one and twenty-five hundredths per farm.

The number of sheep showed for the first time in many years, a gratifying increase and we have today probably six thousand more than four years ago. Wool valued at three hundred thousand dollars was produced each year.

The total value of dairy products is fairly constant at from seventeen to nineteen million dollars annually.

Poultry husbandry is on the increase and in one or two counties eggs and poultry have taken the lead over all farm products in cash return. In 1925, one million, six hundred and eighty-seven thousand hens were found upon the farms of Maine and products aggregating nine million dollars sold from them.

Blueberries

In 1925, an appropriation of ten thousand dollars was made for the Study and Control of the Blueberry Fly, a minute insect that had seriously threatened the quality of our output of this important fruit, and while this Department did not seek this addition to its already extended line of activities, yet we have at the direction of the Legislature, expended a part of the funds provided in strengthening our inspection service at factories, locating points of most serious infestation, encouraged clean picking of berries with prompt delivery at canneries and also in seeking to restore confidence in the Maine products among buyers in other states. Because the United States Bureaus of Entomology and Chemistry were efficiently at work upon the same problem and our own Experiment Station had taken it up as a definite feature of its program, it was not thought wise to attempt any research work or any duplication of the efforts of these agencies. A considerable portion of the ten thousand dollars remains unexpended and this will be used during the season now opening for the purposes indicated above and in an effort to have our blueberries reach the market in a condition that will please and satisfy dealers and consumers.

I recommend a continuance of the appropriation made. Growers and pickers are learning the value of improved methods of growing and handling. Canners have made lavish expenditures in the perfection of their plants and equipment and the State may well afford a continuation of its encouragement and protection of this important Maine industry. We now pack seventy per cent of all the commercially prepared blueberries sold in the United States or in the World and this business affords the chief source of income to many hundreds of people.

Fairs

The number of Agricultural Fairs and Exhibitions continues to increase and there will be displays by at least fifty-five associations this year. This is a greater number than can be properly supported and the amount of attention given by many of the societies to the encouragement of agriculture is negligent. It is difficult, however, to suggest any change in our policy toward the fairs that would not work a hardship upon certain associations that are doing good and helpful work.

This Department has for the past three years required a detailed statement from each fair secretary, setting forth the number of exhibits in each class and the amount of premiums paid as well as an account of the financial condition of the society, and the figures so secured, are now ready for comparative analysis. Without taking valuable space for the pointing out of all the returns received, the following summaries appear to be of interest.

The most noticeable disclosure lies in the figures relating to attendance, indicating that there was a falling-off in attendance at all fairs from three hundred and eighty thousand in 1923 to three hundred and twenty thousand in 1925. It is noted that the number of exhibits of live-stock remained about the same, but that greater encouragement was given by the societies through increased premiums in the oxen and beef cattle classes and also upon sheep.

It is when we come to a consideration of the grain, fruit and root crops classes that the most noticeable improvement appears. In 1923, less than two thousand, six hundred exhibits of grain and root crops were reported and in 1925 the number had increased to more than five thousand, four hundred. Fruit and flower exhibits increased from two thousand, seven hundred and seventy to seven thousand, two hundred and seventy-two, greatly strengthening one of the weakest points in our fair programs. The number of displays of butter and dairy products remained at a very low point and it must continue a matter of regret that in a great diary State such as ours the total amount paid in premiums on the dairy products by all our fairs was only seven hundred and twenty-four dollars in 1923 and five hundred and sixty-six dollars in 1925. One thousand and seven hundred dollars were paid for prizes in pulling contests by horses and oxen. Miscellaneous exhibits drew two thousand and four hundred dollars; grange exhibits, nine hundred and thirty dollars, and Boys' and Girls' Club Work, one thousand, seven hundred and thirty-eight dollars, the latter being a material increase over 1923. The total of premiums and gratuities paid on all live-stock and farm and household products was seventy-five thousand, seven hundred and thirty-six dollars, an increase of approximately five thousand dollars during the two year period.

With regard to the property and equipment of our Agricultural Societies, our records give a total valuation of five hundred and eighty-five thousand dollars or about seventy thousand more than two years ago. The amount of indebtedness is now one hundred and eighty-eight thousand dollars and thirty-two thousand dollars have been spent during the year 1925 in permanent improvements.

It is with sincere satisfaction that I report that in 1925 no society violated, in so far as our observation went, any of the laws governing the distribution of the state stipend, and for the first time during my service as Commissioner, the allotted portion was paid to every Fair Association in the state.

European Corn Borer

The European Corn Borer continues to threaten the cornfields of Maine and if we are to accept the present situation in other states, where a spread of seventy-five towns is reported in Ohio and one hundred and fifty towns in New York, with an almost total destruction of countless acres of corn in the Province of Ontario, as any measure of the danger, it is indeed serious. Our State has wisely granted a small appropriation in each of the past three years for control work and such control has been exercised by this Department along four lines. First, the stopping of all green corn shipments into Maine from infested territory outside the State which has necessitated the stopping of two hundred thirty thousand, four hundred and ten automobiles in a single year, at the principal points of entry. Second, inspection of all products likely to carry the borer at the distributing markets of Portland and vicinity. Third, declaration of a quarantine effective upon those towns where borers have been found and prohibition of the movements of beans, beets, celery, etc., from those towns into the free area of the State and fourth, a campaign among farmers to encourage fall plowing of corn stubble, the best method of control now known.

The presence of the borer is known or suspected in forty-three towns and cities of York, Cumberland and Oxford counties, but it is with great satisfaction that I report only one new infestation in the past two years, Freeport having been added to the quarantine area in 1925. I am not entirely optimistic as to the future. The long flight of the moth and the evident determination of a

few of our summer visitors to supply themselves early sweet corn, no matter where grown, and the ease with which they may, by the use of either motor cars or boats, evade the law and our regulations, makes complete control impossible and a further spread may be looked for at any time. Our best course, it would seem, is to continue every effort toward control and restriction, hoping to hold serious infestation in check until such time as the Federal scientists who are at work upon this problem, shall bring forth an adequate method of control either by parasite attack or otherwise.

Legislation

Again I must call attention to the fact that each succeeding Legislature adds to the duties of the Department of Agriculture and that these additional charges are usually in the line of regulatory work and that very rarely do they provide for any direct assistance to Agriculture or its problems. At the last session, nine acts and resolves were passed, demanding increased activity on the part of the Department. Postage, telephone and other overhead charges were augmented thereby and traveling expenses of employees increased, but no provision was made for these contingencies in our regular departmental appropriations. It is to be hoped that the coming Legislature will very carefully consider any changes in or additions to our agricultural and regulatory laws. The Department will recommend only minor additions and amendments and no attempt will be made to extend our authority or increase our jurisdiction.

I realize, however, that the matter of the acceptance or rejection by the State of Maine, of the proposed Uniform Apple Packing Law for New England will force itself upon the attention of the eighty-third Legislature. Two New England States have already accepted its terms and Maine will be strongly urged to follow. The adoption of such uniform regulations is highly desirable, if it can be brought about without making too many concessions to those who do not realize that the future of the New England apple growing industry depends upon a raising rather than a lowering of the standard of quality, and if such regulations can be made practical from the enforcement angle. The Maine Apple Packing Law was rewritten in 1925 and as amended appears to be working out well. Into the fabric of this new law

were woven some rather high ideals as to grading and branding requirements and unquestionably the Legislature of 1927 will move cautiously in making the changes required for a ratification of the New England proposition.

Appropriations

In the matter of appropriations, the Department of Agriculture has been liberally considered by the Legislature in both 1923 and 1925, and it will not be necessary to request any general increases this year. With the single exception of the Division of Inspection, I believe our work could be carried forward successfully during 1928 and 1929 without increased financial support. It may be observed, however, that increased overhead expenses have so drawn upon our appropriation for General Office Expense, that all educational work such as the publication and distribution of bulletins has been forced out of our program. If this service is to be restored, the appropriation should be increased from twelve thousand to fifteen thousand dollars.

In the matter of support for the Division of Inspection, some rather plain statements and explanations may well be made. The present annual appropriation for this Division, which is charged with the enforcement of all pure food and drug laws, laws for safe-guarding the quality of fertilizers, feeds, seeds, insecticides and fungicides, and the accuracy of scales and measures, laws relating to the sale of oleomargarine, supervision of canning establishments and bottling works and the apple packing law, is eight thousand dollars or slightly more than one cent per inhabitant of our State. Out of the funds of this Division we must pay to the Experiment Station at Orono from ten to twelve thousand dollars annually, for analytical work, so that we face the opening of each year with a deficit and attempt to make this up and to carry on all the important activities listed from our receipts from fees, registrations and fines, always an uncertain source of income.

Obviously the pure food and similar regulations must be enforced and the health and safety of our people protected and always it is the apple packing law that must be neglected. To say that our present administration of the apple packing law is incomplete and inadequate is to express the situation mildly, but we may look for no improvement unless an increased appropriation for the Division of Inspection can be arranged and the

amount granted by the State made to at least cover the cost of analyses made at Orono. The alternative that suggests itself, which would be looked upon with satisfaction by this Department, is a straight appropriation by the State of thirty thousand dollars per year with all fees and registrations collected to be turned into the State Treasury.

Conclusion

It is a pleasure to add, in closing this report, a word of appreciation of the support and assistance rendered the Department by Your Excellency and Council. I have been compelled to bring to you an unusual number of requests and problems which have in every instance, been given sympathetic consideration. Your cooperation and suggestions have made our ways easier and our service more valuable to the people of the State.

My grateful acknowledgements are also extended to the Experiment Station and Extension Service for the cooperation extended to us and the many helpful favors granted. Our Granges have given to me and to my associates free use of their facilities for educational and demonstrative purposes. It may be truly said there is no State in which Executive, Departments and Institutions are so firmly and unselfishly allied in a common cause. Certainly such union of effort bespeaks a future for the industry we are all striving to serve.

REPORT OF CHIEF OF THE DIVISION OF INSPECTION

To the Hon. Frank P. Washburn, Commissioner of Agriculture:

I submit, herewith, my report covering the work done by the Division of Inspection from July, 1924 to July, 1926.

The work of the Division of Inspection, as outlined by the Statute, consists in the enforcement of the law regulating the sale of agricultural seeds, commercial feeding-stuffs, commercial fertilizers, drugs, foods, fungicides and insecticides, including the duties involved by the annual registration required for commercial feeding-stuffs, commercial fertilizers, fungicides and insecticides; also, the enforcement of the Weights and Measures law and the enforcement of the law regulating the packing and grading of apples.

The period from July, 1924 down to the time of submitting this report has been marked by definite legislation with direct bearing on inspection laws. The Legislature of 1925 passed an act regulating the manufacture and sale of soft drinks and granting authority for licensing bottling establishments, to the Commissioner of Agriculture. In the same session of the Legislature, the most definite and specific change has been made in the Apple Packing Law since its passage in 1911, was effected. These legislative acts have necessarily involved additional activities and changed methods of enforcement for the Division.

Cooperation between the Inspectors of the Division and the health officers of the various cities and towns has broadened the scope of the inspection work to a great extent.

The inspection and collection of samples of seeds, feeding-stuffs and fertilizers have been made as usual. The three largest cities of the State have been given almost constant inspection in food and drug matters, the inspectors of the Department cooperating with the health officers. At least 85% of the total population of 768,014 have been afforded protection by inspection of their food supply.

Seed Inspection

The inspection of seed for 1924-1926 was performed by our regular Inspectors, who covered practically the whole State and obtained many samples. The findings of the Inspectors and the results of analyses of the seeds collected were much improved over past years. The results of the analyses of the samples collected, together with samples from dealers, may be found in OFFICIAL INSPECTIONS NO. 118.

Feeding-Stuffs Inspection

The feeding-stuffs inspection for 1925-1926 has been marked by the registration of a great number of brands. In general, the samples collected have been found, upon analyses, to accord with the guaranties in the certificates and on the packages. It has been necessary to arrange numerous hearings on account of non-registration. If difficulties have arisen with products of interstate shipment and the cases warranted action, such cases have been referred to the Federal Department. The following table briefly outlines the scope of our work with relation to feeding-stuffs, and is understood to represent the calendar years:

	1925	1926
Number of brands registered	624	561
Number of samples drawn from Sept. 1924 to May 1925	244	
Number of samples drawn from Oct. 1925 to May 1926		277
Number of hearings arranged	25	6

The results of analyses of the samples taken may be found in OFFICIAL INSPECTIONS NO. 116.

Fungicides and Insecticides

In the inspection of fungicides and insecticides, the endeavor was made to obtain, during the spring months, such products as bordeaux mixture, arsenate of lead, paris green and any other products usually used for agricultural purposes for repelling and mitigating the attacks of insect pests. The following table

shows the extent of our work along this line, the figures representing the calendar years:

	1925	1926
Number of brands registered	223	236
Number of samples collected	24	23
Number of hearings arranged	6	6

The results of analyses of the samples collected may be found in OFFICIAL INSPECTIONS NO. 118.

Fertilizer Inspection

During the spring months of 1925 and 1926 our Inspectors were able to collect a large number of registered brands of fertilizers.

Official samples were obtained from storehouses and agents and also from the farmers having fertilizer on hand, and were for the most part properly registered. A few were found offered for sale for which registration had not been made and in these cases the agents were cited to hearings.

The following is a table outlining the work accomplished with relation to fertilizer. The various brands of fertilizers are registered for the calendar years:

	1925	1926
Brands registered	283	317
Samples collected	337*	204

*Many brands sampled in duplicate

The results of analyses of the samples collected may be found in OFFICIAL INSPECTIONS NO. 117.

Drug Inspection

The drug inspection work has been carried on in the usual manner. The samples collected consisting of the more common preparations manufactured usually by druggists themselves, such as peppermint, camphor, checkerberry, iodine and nitre. It is highly important that drugs, whether recognized by the U. S. P. or not, should, when administered, produce the desired therapeutic effect.

Food Inspection

As has been our custom, we have endeavored by different methods to effect the best results, that is, by education, inspection and prosecution. In the work of food inspection, the collection of samples represents only in a small way the amount of work accomplished.

Grocery Stores and Markets

The Deputies of this Department have made numerous inspections, reporting as to the general condition of the place, the cleanliness of the walls, floors, shelves and counters, the condition of meat rooms and refrigerators, and the general habits observed as to the proper labeling of lard, molasses, sausage and vinegar when sold in substitution for the real article.

Restaurants

The inspection of hotels, particularly the dining rooms, lunch rooms, restaurants and lunch carts has been carried on as fully as the funds available and the force of inspectors employed permitted. Particular attention has been paid to the condition of dishes and utensils used and the refrigerating facilities noted.

Bakeries

It is very important that care should be taken in handling bread, and we have attempted to investigate as fully as possible the methods used in dispensing this product, not only in bake shops, but on delivery teams and in stores. Bread, as it comes from the oven is in a sterilized condition. This is the last sterilizing process that bread receives before being consumed, as a very small amount of bread is subjected to any heating or toasting operation. It is obvious, therefore, that bread in order to be suitable for food should be at all times carefully protected. Inspectors have instructed drivers of bakery teams to be particularly cleanly in their habits in the matter of handling bread. It is gratifying to report that there has been a marked improvement in the general conditions of the bake shops throughout the State of Maine during 1925 and 1926.

Bottling Establishments

The Legislature of 1925 passed an act regulating the manufacture and sale of soft drinks, syrups and non-alcoholic beverages, whereby, no person, firm or corporation shall manufacture or bottle for sale at wholesale any drink product or other non-alcoholic beverage within this State without having first filed with the Commissioner of Agriculture an application for license accompanied with a fee of ten dollars upon receipt of which application the Commissioner of Agriculture shall issue to the person, firm or corporation making such application, a license to manufacture soft drinks or other non-alcoholic beverages. Under the provision of this act rather a complete inspection of bottling establishments has been made. Numerous samples have been collected and the license provisions enforced.

It is gratifying to report that the proprietors of bottling establishments have cooperated very definitely with officers of this Department.

	1925	1926 6 mo.
Number of bottling establishments licensed	60	56
Inspection of number of samples taken	378	106
Hearings, fines, etc.	0	15

Slaughter House Inspection

In the absence of definite statute providing for an ante-mortem and post-mortem examination of animals slaughtered for food it has been extremely difficult to carry on slaughter house inspection in a satisfactory manner. However, the work has been pursued as in the past by making inspections in slaughter houses and requiring as far as possible under the law, that the slaughtering be done under healthful conditions and that the establishments be properly maintained in a clean and sanitary manner.

Food Factories

The usual inspection in definite collaboration with Federal officials has been maintained in factories where sardines and corn have been packed and the work of inspection and supervision in blueberry factories has been more definite and complete than ever before in the history of food control work in the State of

Maine. During the season of 1924, under Chapter 36 of Section 25, providing for the installation of inspection, fourteen blueberry factories had inspection service throughout the canning season with an Inspector of the Department present in the plant throughout the packing season.

Again in 1925 eleven factories continued the same arrangement and in 1926 fourteen plants received inspection. By the installation of this service, it was possible to modify and adjust differences between blueberry growers and packers as to the quality of berries offered for packing and it is extremely gratifying to report that a marked improvement has been made in the general quality of the product packed. With a special appropriation made available by the Legislature of 1925 considerable field work has been done by officers of this Division. Inspectors of the Department operating on the barrens have made inspection of the berries before picking so that packers could be spared the expense of harvesting berries that were not of proper quality for packing. In collaboration with Dr. Lathrop of the U. S. Bureau of Entomology some very interesting and rather reliable information regarding the character of various areas where blueberries are grown, the amount of acreage burned over and the preparation of maps has been accumulated.

It is very gratifying to report that the majority of the blueberry packers in the State of Maine enthusiastically report the cooperation of the Federal and State authorities and have been very ready to express their belief that the work so far has resulted in a great improvement of their product.

Clams and Oysters

During the spring of 1926 a number of samples of clams and oysters were collected and analysed and with very disappointing results as a great number of samples showed adulteration, this adulteration consisting of an excessive amount of added fresh water. In all cases the guilty parties were cited to hearings and careful attention given to the settlement of these cases.

In the season of 1925 several conferences were held with officials of the U. S. Department of Public Health Service who advanced the idea of certifying to the quality and purity of shellfish taken in Maine. After carefully reviewing the situation, the

Chief of the Division of Inspection declined to accept this responsibility which seemed to be the best course to pursue.

Ice Cream

The usual work in 1925 and again in 1926 of collecting ice cream samples was carried on. In general the ice cream in the State of Maine is of good quality. Occasionally, a local manufacturer, through ignorance and sometimes by wilful violation, attempts to sell ice cream manufactured from evaporated milk which is found to be considerably below standard. In all cases, violators have been cited to hearings and settlements have been effected.

Bureau of Weights and Measures

As the activities and accomplishments of this bureau will be reported in detail by the Deputy Sealer of Weights and Measures, it hardly seems fitting that any statement regarding the work of this Bureau should be made a part of this report.

Bureau of Apple Inspection

In the fall of 1924 with the Apple Packing Law in effect for fourteen years, it seemed entirely proper to call to account numerous packers found violating the Statute providing for the proper grading and shipping of apples, and probably more work was done along this line than at any time since the passage of the law. Numerous hearings were held and fines paid by violators.

The Legislature of 1925 made definite changes in the names of grades and established a tolerance, apparently without weakening the provisions of the Statute, and with this new regulation in effect, the work of the season of 1925 was made largely educational without adopting any drastic measures of enforcement.

Federal Cooperative Work

All through these eighteen months the cooperative work carried on with the Federal Bureau of Chemistry, especially with the officers of the Boston Station, has been of decided advantage in the accomplishment of our inspection work and the splendid support given us has been greatly appreciated.

Summary and Recommendations

To briefly summarize the work of the Division of Inspection it has been our duty, as outlined by the Statute, to safeguard the food and drug supply, to investigate the quality and purity of feeds, seeds, fertilizers and spraying materials, and to insure just weights and measures of those commodities used by the people of the State of Maine.

There are many conditions that need remedying. The country slaughter house and the lack of inspection therein is to be greatly deplored. Before the ideal can be realized, it is our belief that more legislation is necessary.

The food standards for the State of Maine have in no way been altered since 1913 although from time to time they have been republished. With much information at hand resulting from investigations by the U. S. Bureau of Chemistry, new food standards should be established. It is recommended, therefore, that a new printing of these regulations should be made at the earliest opportunity.

Some investigation should also be made of the subject of selling ice cream by weight. This could probably be taken care of under regulations and it is not thought desirable at this time to recommend any legislation.

In conclusion please accept my thanks for your kind advice, wise counsel, and hearty cooperation in the administration of the affairs assigned to me. I also wish at this time to express my appreciation of the valued assistance of my associates in the performance of our duties, and to thank the Clerks and Deputies who have labored with me. The cooperation of the other Departments of the State House and of the Federal Government has been of great value to me, and my gratitude to them is hereby acknowledged.

Respectfully submitted,

A. M. G. SOULE,

Chief, Division of Inspection.

REPORT OF THE DEPUTY STATE SEALER OF WEIGHTS AND MEASURES

To A. M. G. Soule, Chief, Division of Inspection:

As State Deputy Sealer of Weights and Measures, I respectfully submit to you a report of the work done by this Bureau covering the period from July 1, 1924 to July 1, 1925.

During the summer of 1924 particular attention was paid to the testing of gasoline pumps. I personally tested five hundred and thirty, finding a great many pumps that were not delivering full quantity while very few were found to be over-running. There were probably two reasons why so many pumps were found short. One reason was, that in installing the pumps service cans were used to test and adjust them and in many instances these cans showed several dents on the sides which naturally shortened the measure. The other, proper attention was not given by the operators in occasionally testing the pumps to see if they were mechanically correct.

During the month of June, 1925, I tested three hundred and twenty-five gasoline pumps and a great improvement was noted in the results obtained over those found during the season of 1924, probably due to the fact that better equipment was being used and better supervision was given to it.

I have always found the oil companies ready and willing to make the necessary repairs and adjustments. In cases where new pumps were needed to take the place of those that could not be adjusted or repaired, the companies complied with my wishes and installed new pumps.

As this Department allows a tolerance given in cubic inches, a testing measure with cubic inch calibration should be used in testing the pumps when they are installed.

Every operator of a pump should have accurate measures and test the pumps often.

Every purchaser of gasoline should demand and know that he gets the number of gallons asked and paid for.

As it is impossible to get correct measure from a gasoline pump when the storage tank is low, every operator should see to it that he has a sufficient quantity in the storage tank at all times.

The "household" or "family" type of scale has been found occasionally being used in stores. During the past month five of these were tested and condemned by me. One man protested saying that he would not use the scale again but would sell it to a fish peddler. Neither he nor the fish peddler will ever have the chance to use this scale in their business. Scales of this type were never manufactured for the use of buying or selling commodities. They were only intended for household use. They are made of cheap material and their accuracy can only be depended upon for a short time. It is not safe for a sealer to seal one, even though it may be correct when tested, for by the time of his next visit, when generally a year's time has elapsed, this scale might have been giving short weight for half this period. No good business man will ever attempt to use this cheap type of scale in his store.

During the past two years several complaints have been received regarding the purchase of short measure fire wood. These complaints have been investigated and in most cases the dealers were found to be selling wood by the load instead of by measure. A load of wood does not mean anything definite, it might be a cord or might be a wheelbarrow load. When a dealer specifies a load of wood at so many dollars and does not state how many cubic feet he is offering the purchaser receives whatever the dealer desires to give him. The present statute covering the sale of this commodity regulates the sale in terms of cord wood. A new law should be passed whereby all firewood should be sold by measure only.

We still have the same old trouble in regard to the appointment of Local Sealers. Many cities and towns do not see fit to pay a reasonable compensation and the fees set by Statute are too small to attract anyone to accept this position. Therefore, every year a few towns fail to have this important work done.

One dealer in Bangor was brought before the court by this Department for selling short weight confectionery and fruit. Seven out of nine packages purchased by two of our Inspectors

were found to be short. The respondent was found guilty. A fine was imposed and the scales, a set of "family" type scale with the legend typed across the dial "not legal for use in trade," was forfeited to the State.

I hope the time is not far distant when the weights and measures law will be changed by the Legislature giving the Local Sealers a reasonable compensation for their work.

I wish to thank the members of this Department for their hearty cooperation during the past two years.

Respectfully submitted,

CLARENCE O. BROWN,

State Deputy Sealer of Weights and Measures.

NOTE—A summary of the work done during the years 1924 and 1925 by the Local Sealers is appended.

State Report of Weights and Measures for the Year of 1924

Counties	NUMBER TESTED							NUMBER CONDEMNED						
1924	Scales	Weights	Dry Measures	Liquid Measures	Yard Sticks	Automatic Pumps	Milk Jars	Scales	Weights	Dry Measures	Liquid Measures	Yard Sticks	Automatic Pumps	Milk Jars
Androscoggin	1,770	1,680	58	514	36	455	109	53	7	11	5	30	–	–
Aroostook	1,044	1,084	18	362	56	274	302	7	–	–	5	3	–	–
Cumberland	3,550	3,095	336	1,410	296	695	1,150	273	11	27	6	–	50	–
Franklin	395	537	18	203	37	142	2	4	–	–	1	–	–	–
Hancock	689	754	60	294	78	224	242	16	8	–	6	1	6	–
Kennebec	610	739	55	460	25	125	–	10	18	3	9	–	1	–
Knox	926	1,595	109	719	103	180	585	29	–	–	9	1	4	–
Lincoln	420	549	33	151	28	119	–	3	–	–	4	1	–	–
Oxford	689	390	25	274	90	245	247	4	–	–	1	4	1	–
Penobscot	1,432	2,192	87	818	270	533	–	21	6	2	20	12	7	–
Piscataquis	350	531	5	156	36	122	–	2	–	–	–	–	–	–
Sagadahoc	429	444	13	171	31	115	14	14	1	–	13	–	6	–
Somerset	724	671	84	410	55	295	15	30	30	2	20	–	33	–
Waldo	409	764	8	262	13	148	100	1	1	–	–	–	1	–
Washington	870	835	135	442	77	265	215	6	1	–	–	2	2	–
York	1,270	1,377	232	525	91	444	1,502	18	1	2	6	4	7	–
Totals	15,577	17,237	1,276	7,171	1,322	4,381	4,483	491	84	47	105	58	118	

State Report of Weights and Measures for the Year of 1925

Counties	NUMBER TESTED									NUMBER CONDEMNED								
1925	Scales	Weights	Dry Measures	Liquid Measures	Yard Sticks	Automatic Pumps	Milk Jars	Taximeters	Measuregraphs	Scales	Weights	Dry Measures	Liquid Measures	Yard Sticks	Automatic Pumps	Milk Jars	Taximeters	Measuregraphs
Androscoggin	2,204	1,613	91	346	30	598	5	–	–	34	6	8	2	–	3	–	–	–
Aroostook	1,054	1,268	3	378	71	297	312	–	–	17	–	–	–	1	22	–	–	–
Cumberland	3,495	3,844	280	1,499	274	1,040	1,822	27	22	205	19	29	14	4	66	14	6	1
Franklin	529	600	38	238	57	141	5	–	–	3	–	1	–	–	1	–	–	–
Hancock	627	945	88	492	88	177	948	–	–	17	11	1	7	2	3	–	–	–
Kennebec	512	707	27	432	21	227	–	–	6	6	14	4	18	–	2	–	–	–
Knox	903	1,477	96	875	112	403	1,868	–	–	23	50	3	12	1	2	28	–	–
Lincoln	328	616	49	158	26	142	5	–	–	2	–	–	1	–	–	–	–	–
Oxford	530	305	27	209	83	225	241	–	–	4	–	3	–	2	–	–	–	–
Penobscot	1,553	2,217	43	740	224	598	600	–	–	12	5	2	5	1	4	–	–	–
Piscataquis	360	368	4	124	48	159	–	–	–	1	–	–	–	–	–	–	–	–
Sagadahoc	409	569	39	167	37	145	–	–	3	9	–	–	9	1	3	–	–	–
Somerset	686	702	74	257	44	264	1	–	–	43	40	–	13	4	22	1	–	–
Waldo	571	1,461	48	290	13	224	135	–	–	3	–	–	3	–	1	–	–	–
Washington	874	1,127	98	512	72	309	125	–	–	8	3	–	–	–	1	–	–	–
York	1,335	407	38	330	55	467	4,270	–	–	8	3	2	3	–	3	39	–	–
Totals	15,970	18,226	1,043	7,047	1,255	5,416	10,337	27	31	395	151	53	87	16	133	82	6	1

REPORT OF THE CHIEF OF THE DIVISION OF PLANT INDUSTRY

To the Hon. F. P. Washburn, Commissioner of Agriculture:

I respectfully submit the following as a report of the activities of the Division of Plant Industry without attempting to go into detail. The work of the Division is subdivided into three distinct Bureaus; namely, horticulture, insect control work and seed improvement work.

In keeping with the policy of the Department, there has been no attempt to branch out in our activities. The thought has been rather to do well what we were already working on and to make real progress along those lines. It is sometimes hard not to take hold of new lines when they seem to present themselves; but rather than be grasping, we have from time to time taken our problems to other branches of agricultural work such as the Experiment Station and the Extension Service, and turned over to them what we believed to be research or educational and attempted to watch the regulatory work which belonged to our Division.

The insect control and the horticultural work each has a man in charge of that particular line. The seed certification, I have handled myself, and the following is offered in detail as the report for this particular Bureau.

Seed Inspection and Certification

At the beginning of this report on July 1st. 1924, we were starting on the inspection of the largest acreage of potatoes which had ever been offered us up to that time; the total entries for that season being more than 25,000 acres, of which 14,700 passed the second inspection. This particular season was a difficult one because for the first time, our inspectors did not do the roguing, but supervised this part of the work which was done by the farmers. It required nearly forty men to do the field inspection in

the time which we were allowed. This was a very good growing season and the largest crop of potatoes grown for a great many years was harvested.

Several inspectors were kept on during the entire shipping season from October until the spring of 1925. The total shipped under the blue tag of the Department was 604,079 barrels. These went to twenty-five states and one foreign country. The leading variety was the Irish Cobbler; second in importance, the Green Mountain; third, the Spaulding Rose. This was the best year's shipment that the inspection service had been through. It showed an increase of more than 100% over the previous season. The large shipment of certified seed was due to several factors—the principal one being the low price of both table and seed stock and the fact that certified seed could be bought at such a low price naturally caused the southern buyers to ask for the best. To add to this, certified seed had been making good all the time in the southern states where it was being tried out. Another factor was the large total crop in the country which enhanced the value of all stock which did not have some special value to get it before the buyers. The best that could be said about certified seed this particular season was that the blue tag helped to sell a good many thousand barrels which never would have reached the market had they not had the recommendation of having passed certification. The season from the standpoint of the general potato grower, was a very unfavorable one and our total crop went out for much less than the cost of production. With these thoughts in mind and the fact that a low price was received for certified seed, it brought us up to the 1925 season with a decreased interest in certification work. In other words, the saturation point of interest on the part of our farmers and a healthy market for the product seemed to have been reached. There is an old saying, and it has its merits, that we here in America go to extremes and then soon work back to what is a normal condition, and this seems to apply well in this case. Certification over a period of years had worked well and a great many had gone into it, and now we are on our way to that normal condition which we will eventually arrive at.

In 1925, there were entered for inspection 18,311 acres, of which only 7,065 passed the second inspection. A word of explanation seems necessary at this point to show why so many acres failed to pass. The better and more conservative of our

seed growers felt that a time had arrived when a tightening up of our regulations would help everyone connected with this work. With this in mind, the Commissioner of Agriculture, by authority granted him, issued regulations reducing the per cent of diseases allowed and also charged this Division with a strict enforcement of what is known as the 250 ft. distance rule. This seemed to work a hardship on a great many growers with the result referred to above, but it is the opinion of the writer that this was a good move on the part of the Department as will be shown in the future of seed certification work. The acres passing inspection by varieties were as follows: Mountains, 2,346; Cobbler, 3,057; Spaulding Rose, 1,437; Bliss, 18; Delawares, 184; Early Rose, 1; other varieties, 22. It will be noticed that the total acreage passing was about one-half that of the previous year, but comparisons should not be made with the acreage but with the number of barrels which are sold as certified seed from each crop. Allowing 80 barrels of racked potatoes to the acre, there would be nearly enough certified seed to supply the previous year's sale.

In brief, the Division was able to hire men who had worked in previous seasons and the reports are believed to have been very accurate when the detail of the subject was considered. For the first time, we were enforcing a 3% Mosaic on the first inspection, were very rigidly carrying out the 250 ft. rule and had also adopted a 5% Spindle Tuber ruling for the second inspection. The enforcing of the old rule and the carrying out of the new brought many burdens to bear on the inspectors. The task of reading Spindle Tuber in the plant is a difficult one even by those trained in the work. Our inspectors were instructed to very carefully see to it that they could check the symptoms of Spindle Tuber in the plant with the type of tuber in the ground, and not depend on either factor singly. We believe that the value of adopting this ruling will be made very clear in the future in helping to build up the type of our varieties. Bin inspection had failed to correct the error in Spindle Tubers and we are fully convinced that by plant inspection alone can a correct analysis of this disease be made. This is true because there are so many factors involved which cause Spindle Tuber type.

In passing, it must be said that once more the problem of foundation stock in Mountains seems to come to the front. Dur-

ing this particular season, we were unable to detect plant diseases very early and think that we got as good results as could be expected. Mosaic showed plainly when the plants were only six inches high and those growers who did conscientious work in seed plots this year must have made some progress. It remains for another season's inspection work to show just what has been done.

Shipping Season

At the time the certified crop was dug in the fall of 1925, the price of potatoes was not high. The crop of the country was below normal and we were warned by many buyers that they had not paid a very high price for their seed and they would depend upon us to see to it that in spite of this fact they should receive just the same type of shipping inspection as the man who later in the season paid a higher price for certified stock. This word from seed buyers was unnecessary. The policy of this Division remains the same whether seed potatoes are being sold for $2.00 per barrel or $10.00. It is our job to meddle neither with price nor the effect which price has on a deal. It is our job to see to it that the southern buyers receive a good product after we treat our own growers fairly here and this principle need not be governed by price at all. Starting our shipping season early, we were obliged, at various times during the season, to keep from seven to nine inspectors to do the work. Our men were kept very busy due to the fact that we helped the Division of Markets more or less in introducing what is known as "Shipping Point Inspection"; aiding that Division in every way possible by letting them have some of our experienced men which helped in a financial way, both Divisions, because the expense could be divided the same as the work. We were very glad to cooperate with Mr. White of the Division of Markets and shall plan to work our men on this same basis in the future as much as possible.

At the close of this shipping season, the figures will show that there had been moved under the blue tag 419,397 barrels of seed, by varieties as follows: Irish Cobblers, 209,227; Green Mountains, 115,877; Spaulding Rose, 85,176; Delawares, 8,213; Bliss, 813; Early Rose, 91. This showed 1,677 cars or approximately 187,000 barrels less than the year before. An analysis of the shipping season will show that the Maine potato crop went out with a

value of $68,000,000 compared with $18,000,000 for the previous crop, showing that for the first time in several years our potato farmers went through a very prosperous season.

It naturally follows that much of the certified seed went for table stock; the reason being that there was not margin enough between table stock and seed to pay the grower for racking out seed stock, and taking a lower price for the culls. Then too, there are many growers who had rather take a little less a barrel if the price is high than to put in the extra time required for the handling of seed stock. Out of the experience of several years, this fact seems to stand out that in seasons when potatoes are sold for a low price, the seed man has a better chance for getting out whole, and there seems to be more real object in having good seed for sale in a low price year than in a year when prices are good and anyone can sell at a good profit. The fact that many of our growers sold their certified seed early and when it was shipped the price was lower than table stock, left a bad feeling in many farmers' minds toward seed certification. The question most commonly asked was, "Why should I take any interest in seed certification when I can get more for my table stock or just as much?", and with that thought in mind, the entry for the 1926 inspection season was only slightly more than 11,000 acres. This was a decrease of 7,000 acres over the previous year's entry. It is not believed, however, that the end of the 1926 season will show very much of a decrease in the total number of acres passed over the previous year.

Summary

Certification of seed potatoes has reached a point that we have been working for over a period of years. The farmers of the south are demanding this type of seed and the better buyers are falling into line and furnishing their growers with this blue label stock. Our own growers here at home who are in the seed certification work are our best type of growers who realize the value of seed certification from two angles—that of having a good seed trade and also from the standpoint of keeping up their own stock. In 1924, the year of the large entry, several men came in who were interested just temporarily, but these have been automatically eliminated and now only the more interested growers have remained. From the standpoint of the Department, when

seed certification was first attempted there were two objects in view—to put a guarantee on our seed for out-of-state buyers and to build up the general tone of our potato crop which was in bad repute, the latter of much more importance than the former because it involved the product of so many more acres. The last three years in succession the State of Maine has produced large crops of potatoes of good quality and those very close to the situation believe that improved seed has been the one factor which has brought this about. A survey of recent statistics will show that the average yield per acre of potatoes in the United States has been increased 39% in the last twenty years. Fertilization and cultivation had their day and then came seed improvement work and for the money involved, there has never been a factor which has given the results that seed certification has given in all the states where it has been tried. This Division expects that 7,065 acres does not represent the maximum which this State can sell as certified seed. No advertising has been done except in rare instances and it will take a great many years for the farmers of our southern states to realize just what certified seed means.

The rules under which the certification of seed was done in 1925 will not be changed in any item for 1926. It is believed we have passed through the primary stages of this work and that from now on, we can watch very closely the details and not make any radical changes.

The work is entirely self-supporting as reference to the Auditor's office will show, and the seed growers are bearing the burden which should be passed along to the seed buyers and undoubtedly is. This Division occupies the position of a disinterested party trying to see that justice is done by both without showing any favoritism to either.

Without attempting to sound any alarm or cause undue notice to be paid to this phase of the work, we would be amiss in our duty if we did not call attention to the apparent lack of resistance which the Green Mountain variety of potatoes has toward some of the more common of the degenerative diseases, such as Mosaic, Leafroll, Spindle Tuber and others. The important question in seed certification is to locate foundation stock which will pass inspection the following season. The Cobblers and the Spaulding Rose seem to be more resistant and these varieties

as planted in our State now are of a very high grade. The Green Mountain, however, seems to be more susceptible to all troubles and it is to be hoped that the research workers and the Extension Service in their demonstration plot work will give a great deal of thought to this particular variety because its value to the State of Maine runs into more dollars than I would care to estimate. I am writing strictly from the standpoint of seed certification. I realize that the Mountains in general throughout the State are much better than they were six years ago, but it is hard to hold them down to the minimum of plant disease necessary to certify as high grade seed.

There is no need for any acres of potatoes in Maine to be planted with anything but good seed. The greater part of our growers realize this. There are still some, however, who insist on planting something not as good as that which is available. We will not always have such a successful season as that through which we have just passed and as a final analysis of this seed situation, it is believed that our hope in the future is to plant the very best seed obtainable so that we can land our potatoes at the primary markets of the east at a figure with which the other states cannot compete. In other words, we are a natural potato growing State and we ought to do our business in such a way that no one can take away from us that which belongs to us. On the other hand, by vigorous methods of production and marketing, we ought to be able to hold our own with anyone in the growing of this particular crop, and this Division will keep this thought in mind in framing its future policies.

In this particular work of seed certification, the Department has alone done the inspection and certification, but we want to give full credit to the Experiment Station, Extension Service and the U. S. Department of Agriculture for the work which they have done in helping to make available better seed stocks for us to inspect and certify. All these organizations have cooperated and the writer makes no hesitancy in giving full credit to them for what they have done. These agencies cannot stop now, but have a whole lot more to do to tell us the origin of these diseases and how they can be controlled, and while this is going on to also keep us supplied with the best foundation stock available.

REPORT OF FIELD AGENT, GYPSY MOTH WORK

Insect Control Work

This Division is charged with the administration of that portion of the law relating to the control of the Gypsy and Brown Tail Moths; and has adopted a program consistent with the habits of these two pests, being in close cooperation with the Federal laboratory at Melrose Highlands, Massachusetts, and one of our men, Mr. Trafton, is constantly in the field either making parasite plantings or recoveries for laboratory work.

In May of 1925, there were liberated in the towns of Fryeburg, Denmark, Bridgton, Harrison, Otisfield, Oxford, Hebron, South Paris, Norway, Buckfield, Livermore, East Livermore, Fayette and Readfield more than 500,000 Anastatus parasites. In the spring of 1926, this work was continued and nearly 400,000 parasites of this same nature were liberated in towns adjoining those above mentioned in an attempt to make a complete line of towns where the parasites would operate. This is a tiny fly parasite which works on the Gipsy Moth egg cluster. The effectiveness of the parasite work has been demonstrated to a certain extent. Our towns which were the more heavily infested have not shown a material increase in the larger colonies. There has been, however, an increase in the outlying towns where the colonies are smaller and more scattered. In a report issued by this Division in 1921, it was suggested that the known methods of combating the Gipsy and Brown Tail Moths were of such a nature that it would not be to any advantage to have a large sum of money to spend. In other words, the old time method of painting out egg clusters with creosote proved ineffective and the real results to be expected are from the parasite work which is being done in cooperation with the Federal officials.

Spraying

During the two seasons covered by this report, this Division has kept continually in action during the spraying season two machines—one a large power sprayer, capable of spraying the largest trees and the other a small machine for trees not so high and to spray such places as camp sites and small roadside infestations having great danger of a spread. The towns that have been sprayed each year are Kittery, Eliot, South Berwick, San-

ford, Saco, Biddeford and York Harbor, and Augusta the present season. These towns were selected for spraying for the reason that they were badly infested and were on the main travelled highways toward the interior of the State. The City of Augusta was sprayed in an attempt to cooperate with its officials to determine just what could be done in controlling the Elm Leaf Beetle on extremely large shade trees within the city limits as well as to control the Gipsy Moth which has apparently gained a foothold in this section.

As to the value of spraying, there is no doubt about it where it is practical, but it is impracticable in large forest areas and in sections away from the highway. As far as the orchards of the State are concerned, there is no cause for worry in those that are being taken care of and sprayed because insects cannot live under these conditions. It is the neglected trees that cause the spread of all types of insect life.

Applications are continually coming to the Division for assistance from towns in the matter of spraying, but with the equipment at hand, it will be impossible for us to branch out and we will be obliged to confine our efforts to those towns which seem to carry the greatest danger of spread to the central part of the State.

Elm Leaf Beetle

Judging from the inspection work which our men have done in the various towns and the reports submitted by them and by personal observation, I would call special attention to the damage which is being done throughout southern and central Maine each season by the Elm Leaf Beetle. This is especially noticeable in all our towns which have large Elm trees, the value of which cannot be estimated in dollars and cents. There has been a time during the summer in recent years when the foliage on the trees, owing to the feeding of this insect, assumes a brown dead-lookng appearance. This detracts from the looks of the tree as well as sapping its vitality. If the town officials and the people living in these towns realized the seriousness of the situation, it is believed that there would be more cooperative effort towards a small group of towns owning a spraying machine of sufficient power to spray the largest trees and keep them in good condition. In the past, there have been towns owning machines, but their handling was turned over to some novice who

had no personal interest and the results were not what they should have been. Just like everything else, this work ought to be done by someone with vigor enough to do it right and take care of the equipment by having it ready for work at any time. Our recommendation is that the towns heavily infested with the Elm Leaf Beetle and other insect pests procure a spraying machine and do some work to their trees before it is too late.

Besides the two lines of effort mentioned above, the Division has given away thousands of gallons of creosote to individuals who wished to destroy egg clusters on their own property. We have visited numerous infestations and given advice as to what can best be done under the circumstances of each individual case. Many inquiries are received from those owning lake shore property and who want to keep their trees in the best of condition. We have tried in every case to make parasite plantings that would give reasonable protection in time, but we are not yet definitely assured of just what is to be expected from this type of work. I can only repeat that herein lies our hope and every effort to cooperate with the Federal officials will be continued.

Brown Tail Moth

A careful survey of the Gypsy and Brown Tail Moth situation last winter gave us definite information as to the spread which has taken place the last two years and without any attempt to alarm our inhabitants, we feel it only fair to say that in practically every town in York County and the southern part of Cumberland, the Brown Tail Moth webs were found in great numbers, varying in number, but decreasing as the inspectors came east. In Eliot, the report showed that there were thousands of webs in each orchard in the town. The roadside trees and bushes were also badly infested. This same report would hold true for the towns of Kittery and York, and decrease as the more interior towns in Maine were scouted.

The winter of 1925-26 was not, as we in Maine understand it, a severe winter. Insect life of all types came through in an unusually healthy condition compared with the standpoint of normal years. Apparently, all the Gypsy Moth egg clusters have hatched, and there has been no apparent winter injury to the Brown Tail nests. Observations made of other insect pests common in our State lead to the general statement that we

are having a lot of insect injury to date and may expect it all summer as the various insects get in their work. This can only lead to the belief that our Gypsy Moth spread will be great and later in the season, reports of a general spread may be expected.

Summary

The number of men employed in this work has been reduced to a minimum and the work has been so planned that the men can be released for duty on the Corn Borer work and in other lines of the Division activities.

There has been no attempt to overstate the conditions as regard insect life, but we would not be doing our duty if we did not bring the facts to the people of the State just as they are. We believe that an appropriation sufficient to conduct the parasite work properly and to spray where it will be of value, to be able to distribute creosote and give any advice that we are called upon to give is about the only program which we would care to recommend at this time.

REPORT OF HORTICULTURE

The following brief report was submitted by G. A. Yeaton, State Horticulturist:

"An outline of the work which we hoped to accomplish was prepared and we have endeavored to carry out the program as nearly as possible. Our major project has been the orchards and we are proud to say that they are better cared for and as a result, better fruit is being produced at a smaller cost per barrel. More careful spraying and dusting is done and with more suitable equipment, much time is being saved and a greater control of insect and fungus diseases is secured. Quite a number of new orchards have been set since the last report was made and nearly all of them are being well cared for.

An encouraging thing about the new orchards is the fact that most of them have but few varieties and those are of the best commercial sorts. We believe that what the eye sees makes a much more lasting impression than does the spoken word, so we have held many demonstrations, to wit: 47 spraying and dusting, 69 pruning and 7 in grading and packing. These demonstra-

tions have been well attended and the quality as well as quantity has been raised. The increased price that the fruit has sold for has paid all the expenses many times over in cold dollars and cents, and has taught the growers a lesson that could not have been brought home to them in any other way.

We have endeavored at all of these meetings to impress the importance of cultivation and fertilization of the orchards by comparing those that have been properly handled with those that have not. The results are so marked that there can be no room for doubt even in the most skeptical minds. We have demonstrated that the use of quick acting nitrogenous fertilizers has brought many old and apparently gone-by orchards back to productivity and is putting new life into them, and they will assist in handling the expense of growing the new orchard. Many of the farms of Maine that are paying but little can be made veritable gold mines, provided the soil is right, by setting them to apple orchards and properly caring for them.

We have given the branch of small fruit growing considerable attention as that is a line of work that will give the grower the quickest returns, and at a small outlay one can get started in growing strawberries and raspberries and these two fruits will return the greatest profit per man hour of any of the farm activities. We have also assisted in developing the blueberry as a home fruit, as well as a market product. There is always a ready sale for the surplus, and for strictly fancy berries the price is very attractive.

So many inquiries have come to the office about beautifying the home grounds that we have felt justified in responding to the calls and to this end have worked out suggestions that have been adopted by many home owners in the rural sections of our State. This has meant in some instances moving unsightly buildings, changing the walks and driveways, planting some of our native trees and rearranging the flower beds, all of which has meant but small cash outlay.

We have 110 nurseries in the State that must be inspected each year and it is necessary to visit some of them from two to three times in the season. Much of the nursery stock coming into the State has to be looked over to guard against inferior stock, insects or diseases being shipped in. We have been called to

assist in adjusting quite a few claims where the stock was not up to the standard.

Last but not least, we have spoken at 129 meetings with an aggregate attendance of 11,539 people and have traveled 7,547 miles to attend these gatherings. We have used the sterioptican at many of the meetings to drive home the truths that we wished to impress upon the audience.

This in a very brief way tells the most important activities, but in no way the whole."

Division Summary

This report has purposely been made brief. The records are on file, however, giving in detail the daily routine as performed by the men employed and can be had by anyone who wishes them.

As head of this particular Division, I wish to express my thanks to you for the advice which you have so kindly given me from time to time. To my associates, I owe a great deal because they have been loyal and put their work ahead of their personal selves. To the Maine Agricultural Experiment Station, to the Extension Service of the College of Agriculture and to the U.S. Department of Agriculture, we owe a measure of thanks. Our work with all of these groups has been just as close as it possibly could be and our relations pleasant at all times. As near as I can learn, those engaged in agriculture in our State are cooperating in close harmony toward the betterment of conditions for our rural population.

Respectfully submitted,

E. L. NEWDICK,

Chief, Division of Plant Industry.

REPORT OF CHIEF OF THE DIVISION OF ANIMAL INDUSTRY

To Honorable F. P. Washburn, Commissioner of Agriculture:

I herewith submit my report covering the two year period from July 1, 1924 to July 1, 1926.

There has been no radical change in the live stock situation in Maine during this period. The following figures give in a comprehensive form the situation as it stands at the present time.

Number of cows	1923	147,753
" " "	1924	144.516
" " "	1925	139.823
Decrease in two years		7,930
Number of oxen	1923	4,537
" " "	1924	3,636
" " "	1925	3,119
Decrease in two years		1,418
Number of three year olds	1923	17,130
" " " " "	1924	16,034
" " " " "	1925	15,573
Decrease in two years		1,557
Number of two year olds	1923	25,509
" " " " "	1924	24,993
" " " " "	1925	25,335
Decrease in two years		174
Number of one year olds	1923	32,350
" " " " "	1924	35,464
" " " " "	1925	34,017
Increase in two years		1,667
Total number of all cattle	1923	227,279
" " " " "	1924	224,643
" " " " "	1925	217,867
Total decrease in cattle in two years		9,412

Total number of sheep	1923	72,998
" " " "	1924	74,075
" " " "	1925	78,641
Total increase in two years		5,643
Total number of horses	1923	101,310
" " " "	1924	97,207
" " " "	1925	91,806
Total decrease in two years		9,504
Total number of colts	1923	2,799
" " " "	1924	2,075
" " " "	1925	1,532
Total decrease in two years		1,267

This is not as discouraging a report as I was obliged to make two years ago when like figures showed a total decrease of 28,691 head of cattle, a decrease of 13,979 sheep and 9,394 horses and colts. This report cuts down the decrease in cows from 12,673 two years ago to 7,930, the decrease in two year olds is only 174, while one year olds show an increase of 1667.

The figures on sheep are particularly encouraging and show a steady increase since 1923. A decrease in number of oxen, horses and colts must be expected. The increase in young cattle would seem to indicate that the tide is turning and that some farmers, at least, are beginning to realize that at the present price of good grade dairy cows there is a margin of profit in raising those from good sires and of dams that have good size, shape and dairy quality. The demand for this class of cows is on the increase and the demand far exceeds the supply. Out of state buyers are constantly inquiring where in Maine they can procure good grade dairy cows, and cattle dealers all over the State tell me that it is impossible to find cattle of this class in sufficient quantity to satisfy the demand. Buyers in southern New England prefer to buy in Maine because they are pretty sure to get cows that are not only free from tuberculosis at time of shipment, but because they come from disease-free herds and in most cases do not develop the disease soon after arrival, as is often the case if the herd from which they come is tuberculous. In very many instances out of state buyers come to Maine for their replacements after having their herds tested and a goodly percentage condemned, and because of this they are willing and, in most cases, do pay a premium for Maine cows, especially those from an ac-

credited herd or a herd under State and Federal supervision in which no reactors were found on last test. I have been told by dealers that ten dollars per head extra on a lot of this class would gladly be paid by most out of state buyers, thus the lead in bovine tuberculosis eradication that Maine is able to maintain, is resulting in a direct money benefit to Maine farmers.

Milk and Dairy Inspection

Mr. Forrest A. Barbour, who for several years was State Dairy Inspector, resigned his office on March 1, 1925 to engage in the milk business for himself. Clayton P. Osgood was then Assistant Inspector and carried on the work as best he could. The latter part of September of the same year Mr. Osgood was appointed Dairy Inspector and on June 21, 1926 Mr. Gordon W. Drew was appointed Assistant, so that now we have two men on this important work and shall strive in the future to give the dairymen and the public better service along this line than we have been able to do during the past year.

Mr. Osgood's report will be found following this.

Sheep Husbandry

It is with extreme satisfaction that I can note an increase during the past two years of 5,643 sheep. This is not a wonderful increase, to be sure, but does show a good healthy growth. I believe this increase is due to the fact that sheep raising is proving to be a profitable business and I further believe that it is proving profitable here in Maine because of the activities of the Sheep and Wool Growers' Association. Through its method of handling the wool the price returned to the members has been very satisfactory, especially when compared with prices farmers have received in other states. It is also with pleasure that the writer notes the healthy condition and general appearance of the flocks of sheep as seen along the highway in comparison to those of ten or fifteen years ago.

Mr. Crawford, whose report is appended to this, will go more into detail on this subject.

Live Stock Sanitary Work

The close of this fiscal year, July 1, 1926, marks the fifth year since this work was incorporated in the duties of the Division of

Animal Industry. The past two years have seen no marked change in contagious or infectious diseases of animals. Bovine tuberculosis is being slowly but surely eradicated as the following figures covering the five years show.

July 1, 1921 to July 1, 1922:	Total cattle tested	50,727
	Number of reactors	1,288
	Percentage of reactors	2.53%
July 1, 1922 to July 1, 1923:		
	Total cattle tested	64,749
	Number of reactors	1,197
	Percentage of reactors	1.84%
July 1, 1923 to July 1, 1924:		
	Total cattle tested	71,624
	Number of reactors	1,074
	Percentage of reactors	1.47%
July 1, 1924 to July 1, 1925:		
	Total cattle tested	75,695
	Number of reactors	1,122
	Percentage of reactors	1.48%
July 1, 1925 to July 1, 1926:		
	Total cattle tested	90,535
	Number of reactors	1,011
	Percentage of reactors	1.11%

It will be seen from the above figures that the number of cattle tested has increased from year to year. In the year ending July 1, 1922, 50,727 cattle were tested while during the year ending July 1, 1926, 90,535 cattle were tested. There are two reasons for this increase. In the first place much work has been turned over to accredited Veterinaries, both area work and private accredited herds, and the other reason, that each year I have been able to group the work more so that the greatest number of cattle could be tested with the least expenditure of time, labor and expense. The time is well past when the State can send a Veterinary to test one or two herds in a place unless, of course, there is evidence that the herd is diseased.

The following table shows the number of cattle tested for farmers, number of reactors, percentage of disease found and the amount the State has paid in indemnities in each county. (These figures do not include cattle tested for dealers for interstate shipment.)

County	No. Tested	No. Reactors	Percent.	Amount
Androscoggin	9,648	83	.86%	$4,476 00
Aroostook	2,798	31	1.10%	1,341 00
Cumberland	8,346	99	1.06%	6,075 00
Franklin	3,875	37	.95%	2,755 00
Hancock	2,565	13	.5%	790 00
Kennebec	6,851	40	.58%	2,905 00
Knox	1,483	2	.13%	100 00
Lincoln	917	12	1.31%	525 00
Oxford	4,528	27	.59%	1,385 00
Penobscot	17,338	154	.89%	7,902 00
Piscataquis	7,744	39	.5%	1,782 00
Sagadahoc	1,329	12	.9%	800 00
Somerset	3,923	20	.51%	1,040 00
Waldo	3,692	19	.51%	970 00
Washington	557			
York	6,681	306	4.58%	18,390 00

Modified Accredited Areas

In my report two years ago I described the area work then being done in cooperation with farm bureaus, town officials and health officers. This work was a step forward from the former method of testing a herd here and another there all over the State, but, except in a very few areas this method did not reach every one. A certain percentage of cattle owners would have some excuse for not having their herds tested, either they were prejudiced against it or did not have time to bother with it at the time our inspector called, so that the area would not be 100% tested. Realizing this and feeling that Maine was ready for another step forward, Commissioner Washburn and myself drew up a bill that was presented to the last Legislature with the full approval of the Agricultural Committee and it was passed with no opposition. Briefly, this bill provides that, for the purpose of eradicating disease, we can quarantine any area (from a single farm to a county) for the purpose of applying the test to all cattle within that area and when such area is quarantined no cattle can be brought into it that have not been tested within one year and proof of such test and a permit issued by this Division must ac-

company the cattle when brought in. If a dealer wishes to, he can get a permit to have his premises declared a quarantine station to which he can bring untested cattle, but he must have them all tested by an approved Veterinary before they leave his premises.

When an area has been tested in accordance with this law and less than one half of one per cent (.05%) disease is found it will be declared by the Federal Bureau a Modified Accredited Area. Areas in which more than one half of one per cent and less than one per cent disease is found will not have to be retested as a whole, but all herds where disease is found will have to be retested after the expiration of sixty days. If this retest of diseased herds brings the percentage of disease below the one half of one per cent limit the area will then become a Modified Accredited Area. If more than one per cent disease is found on first test the whole area will have to be retested. We started area work under this new law in September 1925 by quarantining Piscataquis County and this county was declared a Modified Accredited Area by the Federal Bureau of Animal Industry December 1, 1925. The actual percentage of tuberculosis found on first test under quarantine was .04%. Since then all herds in which reactors were found have been retested and, with one exception, all tested clean. On February 22, 1926 Penobscot County was quarantined for the same purpose and a few towns were covered before the snow left, but no extensive drive was made until the inspectors could get around with cars. This is one of the largest counties in the State and one of the hardest to cover as there are over 25,000 cattle in it to test. At this date (August 10) the work is nearly completed and so far shows slightly less than one per cent reactors. A few bad places have been found where all, or nearly all, the animals in the herd have reacted to the test and have been removed. This emphasizes the necessity of the compulsory test if the State of Maine is ever to be free from this disease. Somerset County will be quarantined in the immediate future and test work will be started there at once. The Veterinary Inspectors will be assigned territory there as fast as they complete their work in Penobscot County and I am in hopes to add both Penobscot and Somerset Counties to Maine's Accredited Area before 1927.

The following is a summary of the live stock sanitary work for the two years since the last report was published.

WORK ACCOMPLISHED FROM JULY 1, 1924 TO July 1, 1925.

Cattle tested by six cooperative inspectors	52,524
Reactors found	856
Percentage of reactors	1.62%
Cattle tested by veterinary practitioners	15,913
Reactors found	168
Percentage of reactors	1.05%
Cattle tested for interstate shipment	7,258
Reactors found	98
Percentage of reactors	1.35%
Outbreaks of hog cholera reported	12
Hogs treated	306
Hogs sick	108
Hogs died	61

TOTAL WORK.

Cattle tested	75,695
Reactors found	1,122
Percentage of reactors	1.48%
Paid for condemned cattle	$62,835.21
Maine cattle tested and condemned at Brighton	16
Amount paid for Brighton reactors	$893.19
Received and turned into State Treasury for salvage on condemned cattle	$12,485.64
Horses brought in on permit and examined for glanders	1,948
Horses mallein tested	78
Horses condemned for glanders	8
Amount paid for horses condemned, including disinfection of stables	$462.50
Number of cattle brought in from other states on permit	479
Number of cattle permits issued	132

WORK ACCOMPLISHED FROM JULY 1, 1925 TO JULY 1, 1926.

Cattle tested by six cooperative inspectors	59,162
Reactors found	709
Percentage of reactors	1.19%
Cattle tested by extra inspectors employed in Piscataquis and Penobscot Counties	6,151
Reactors found	46
Percentage of reactors	0.71%
Cattle tested by veterinary practitioners	16,962
Reactors found	139
Percentage of reactors	0.82%
Cattle tested for interstate shipment	8,260
Reactors found	117
Percentage of reactors	1.41%
Outbreaks of hog cholera reported	5
Hogs treated	104
Hogs sick	58
Hogs died	15
Swine brought in on permit	3,602
Permits issued	1,280

TOTAL WORK.

Cattle tested	90,535
Reactors found	1,011
Percentage of reactors	1.11%
Paid for condemned cattle	$51,236.00
Maine cattle tested and condemned at Brighton	23
Amount paid for Brighton reactors	$959.92
Received and turned into State Treasury for salvage on condemned cattle	$12,017.31
Horses brought in on permit and examined for glanders	4,118
Horses mallein tested	4
Horses condemned for glanders	1
Amount paid for horses condemned, including disinfection of stables	$52.50
Number of cattle brought in from other states on permit	590
Number of permits issued	151

The personnel of our force of Veterinary Inspectors remains the same as last year. The live stock sanitary work has constantly increased from year to year. On July 22, 1925 a new regulation went into effect requiring that a permit from this office and a health certificate from a Veterinary approved for interstate inspection accompany all consignments of swine entering the State and the figures giving number of permits issued and the number of swine, mostly pigs, that have been brought into Maine, found in this report, are most interesting and show that Maine farmers come far short of raising a sufficient number of pigs for home requirements. This regulation has added considerably to the work of the office. We are also adding new features in filing so that we can more readily supply information regarding any herd in any part of the State on short notice. Notwithstanding all this extra work the clerical force of the office still consists of one girl and she is working at the same salary that she received five years ago. This may be the right way to reward faithful service, but I cannot agree with that sentiment, especially in the face of the fact that the work has nearly doubled during this time. I am in hopes that this matter will be adjusted satisfactorily in the near future. The salary of the Veterinary Inspectors has been increased during the past year from fifteen hundred to eighteen hundred dollars. This is certainly a much needed help, but the salary is still four hundred and fifty dollars under that of the Federal inspectors that work cooperatively with the State Inspectors.

In closing I wish to express my sincere appreciation for the assistance given me by all parties concerned in the work assigned

to my Division and the hearty cooperation and good feeling that has been extended by other organizations and, especially the friendly relations that have existed in our family, the Department of Agriculture and, last but not least, the evidence of good will and helpfulness shown in the assistance given us by His Excellency, Governor Brewster.

Respectfully submitted,

H. M. TUCKER,

Chief, Division of Animal Industry.

REPORT OF STATE DAIRY INSPECTOR

To Herbert M. Tucker, Chief of the Division of Animal Industry:

I respectfully submit my report for the two years ending July 1, 1926. The work has been carried on about the same as usual, although I have been hampered somewhat owing to the fact that I have worked alone since Mr. Barbour resigned in March, 1925, until June 21, 1926.

The sanitary conditions under which milk and cream are produced in this State are constantly improving. This is due to the fact that the dairymen are realizing the need of offering clean milk for sale, and we may also contribute part of this to the keen competition which exists in the retail milk business today. Again much credit must be given to the local milk inspectors who have cooperated at all times with this Bureau.

The work of this Bureau has been divided into three phases: first, creamery inspection; second, collecting milk and cream samples for analysis; and third, the inspection of dairies.

Creamery Inspection

In the last two years I have endeavored to give as much time as possible to creamery inspection, and over one thousand composite samples have been tested in the different creameries. I have been very gratified with the results as in nearly all cases I found their work to check very well with mine. Only two cases were found where adjustment was necessary and I received the hearty cooperation of the creamery managers in making a settlement agreeable to both parties.

In several instances the creamery managers have been asked to have their scales adjusted and glassware marked in accordance with Chapter 37, Revised Statutes. I have found them willing at all times to carry out any suggestions made to them.

In connection with this, twenty-five patrons whose product had been rejected from the Boston Market have been reinstated by this Bureau.

In cooperation with the Dairy Division of the College of Agriculture of the University of Maine, we have given fourteen men an examination to determine their ability to operate the Babcock test.

Milk and Cream Analysis

This part of the work seems to be rather important and as much time as possible has been given over to it. More samples have been collected from the smaller towns, as, in the larger towns and cities, the local milk inspectors have been giving close attention to the analysis of samples representing their milk supply. Most of my time with the local inspectors has been devoted to checking up their work and giving them whatever assistance needed.

One thousand, one hundred and fifty-three samples of milk and cream for analysis have been collected from dealers in nearly one hundred towns. Sixty-eight of these were found to be below the legal standard. Five milkmen have paid fines and one dealer who persisted in watering his milk has paid two fines, the second being fifty dollars.

In cases where it was found that dirty milk was being sold, the places were visited or a letter was sent, asking that changes be made at once.

Restaurant Samples

It seems to be the general tendency for restaurants to use one-half pint bottles in which to serve milk as this gives the consumer greater assurance of obtaining milk of a standard quality, but as many of the restuarants still receive their milk in cans, we have had the milk from one hundred and forty of them analyzed.

Thirty restaurant owners have been prosecuted and paid fines for selling adulterated milk. I wish to thank Mr. A. M. G. Soule for his kind assistance and wise counsel given me in connection with this part of my work.

Dairy Inspection

With the help of the local inspectors, one thousand and forty-three dairies and milk depots in two hundred and four towns have been inspected. Special attention has been given to the milk supply of summer camps each year, as it seems rather important that people coming into this State should be assured of a safe milk supply or as nearly that as possible.

The dairymen are realizing more and more each year, the importance of producing milk under sanitary conditions. There are still a number of places that are not what they should be. In twenty-eight cases dairymen have been ordered to make changes within a certain time. With the exception of a few cases which are still pending, all suggestions have been complied with.

Local Milk Inspectiors

At the present time there are over fifty local milk inspectors in the State. Many of these inspectors are hampered a great deal by the lack of appropriations by the different towns. They are willing to do as much as possible, however, and they have accomplished a great deal of work. All of the cities and many of the towns have local milk ordinances stating that all raw milk sold must be from herds free from tuberculosis.

All of my work with the different inspectors has been very pleasant and I wish to thank them for their hearty spirit of cooperation.

Exhibits

I have had charge of the Department dairy exhibits at the Eastern States Exposition at Springfield, Massachusetts, for the past two years. Have also assisted in judging the Community Milk Exhibit held in connection with the Maine Dairymen's Association. Several requests to act as judge at fairs were received and we were able to attend Central Maine, Skowhegan and Topsham Fairs.

To Mr. Forrest Barbour, whom I succeeded as State Dairy Inspector, I wish to express my gratitude for the assistance he has given me from time to time.

To my co-workers in the Department, I wish to express my thanks for their help and assure you that it has been a pleasure to work in this Division and to try and carry out my duties as State Dairy Inspector.

Respectfully submitted,

CLAYTON P. OSGOOD,

State Dairy Inspector.

REPORT OF SHEEP SPECIALIST

To H. M. Tucker, Chief of the Division of Animal Industry:

I herewith submit my report for the twenty-four months ending June 30, 1926.

The program of work carried out during the past two years has been similar to that of previous years.

During the years 1924-1925 considerable work was done among farmers remote from the larger centers of activity. Meetings were held with as many small groups as was possible where larger and better flocks were considered, much of the work being along the line of elimination of ewes of inferior type, and scoring for points indicating the highest possible production.

Selection of pure bred rams of correct type and conformation has also been one of the outstanding features and it is very gratifying to observe the great change from the use of scrub rams which was formerly so commonly practiced throughout the State. At present, carefully selected pure bred sires are to be found in a large majority of flocks, and their numbers are increasing rapidly each year. This line of work must be continued until every scrub ram is eliminated. Breeders of high quality rams can assist materially in this work by culling their stock until none remain except those possessing the greatest conformation to the breed, and also establishing prices within the reach of all.

There is still a wide field for educational work along this line.

The acreage of rape has been considerably increased and should be grown in a still larger territory. It is produced at a very low cost and is very valuable in fattening lambs for the market. The production of root crops for winter succulence is gaining popularity fast and should be practiced to a greater extent. Much of the expense of grain feeding is eliminated by the use of root crops, and the physical condition of the bred ewes is greatly improved.

Necessity of early cut hay has been one of the features given consideration and the results of those adopting the plan have been

most gratifying. More work along this line should be done at once.

Results from information given concerning the comparative values of different grades of wool are extremely encouraging as is well exemplified through records which show that the shrinkage, or loss in weight resulting from scouring out the natural grease and vegetable matter, has been reduced from three to four per cent during the past five or six years. There has also been a very satisfactory improvement in the more desirable grades of wool, which undoubtedly is the result of grading demonstrations given at receiving stations and personal work done in smaller communities. The two grades most desired—quarter and three-eighths blood—have increased since 1920 from about sixty to ninety per cent. This line of work certainly must be continued; a still higher percentage of these grades and a still higher quality can result only in an increase in price.

Parasitic troubles during 1924 were very slight and required less attention than in previous years, but the extremely rainy summer of 1925 was more favorable for their development and it also caused quantities of late cut hay. This is a combination which is very bad for the highest possible production.

The greatest and most discouraging element in sheep raising and one which is driving many out of the business, is the unrestricted dogs and bears. At every grange or sheep meeting where a better and larger sheep industry is discussed we are confronted with this question: "After encouraging and assisting farmers to larger flocks and the investment of more money in better rams and ewes, why does the State allow thousands of sheep and lambs to be ravaged and destroyed by dogs and nearly as many more fed to bears at a cost to the tax-payers of twelve to twenty dollars per head?" Surely it seems only fair and just to both tax-payer and sheep owner that some legislation be enacted to prevent such tremendous losses.

The Maine Sheep and Wool Growers' Association continues to grow in membership and it handles an increased amount of wool each year. The following records seem to warrant the continuation of the organization:

Year	Members	Gain
1920	218	
1921	420	202
1922	528	108
1923	579	51
1924	635	56
1925	694	59

Year	Pounds of Wool Pooled	Gain
1920	31,040	
1921	53,000	21,960
1922	68,443	15,443
1923	59,969	8,478
1924	65,218	5,249
1925	74,868	9,650

Year	Av. Price Paid by Local Buyers	Price Paid By Assn.	Gain Per Lb. To Members
1920	13c	35c	22c
1921	17c	35c	18c
1922	27c	40c	13c
1923	37c	50c	13c
1924	40c	50c	10c
1925	40c	50c	10c

Year	Return On Members' Investment	Total Gain On Pool
1920	169%	$ 6,828.80
1921	106%	9,540.00
1922	48%	8,897.59
1923	36%	7,901.89
1924	26%	6,661.40
1925	25%	7,486.80
	Total Gain	$47,316.48

Respectfully submitted,

C. H. CRAWFORD,

Sheep Specialist.

REPORT OF CHIEF OF THE DIVISION OF MARKETS

Hon. F. P. Washburn, Commissioner of Agriculture:

Herewith is submitted the biennial report of the Division of Markets for the period, July 1, 1924 to July 1, 1926. The routine work has demanded the full time of the Chief and one Assistant. During the potato shipping season of 1925-1926 one Supervisor and from three to eight Inspectors have been employed in Shipping Point Inspection of table stock potatoes.

Statistics

With the steadily increasing appreciation of the effect which even distant supplies of fruits vegetables and other farm products have on market prices, has come an insistent demand for accurate crop estimates. Five years ago the six New England States arranged a working plan with the United States Crop Reporting Service whereby all information on crops and livestock would be pooled. Each state has also contributed financially to this common service. Under the able leadership of V. A. Sanders, Statistician of Wakefield, Mass., steady progress has been made every year. Seasonable reports are made on crop progress throughout the growing season and early in January of each year this Division has issued a final estimate of the preceding year. This review covers by counties the per acre yields per acre values, total yields and total values of twelve of our principle crops as well as livestock figures of dairy cattle, horses and sheep. Graphs and maps are used to advantage in showing distribution of crops, comparative values and per acre yields of certain Maine crops in comparison with other large producing areas of similar crops.

The collection of dairy statistics from the large milk companies and creameries of the State has been continued. The average prices for milk and butter fat have been higher in 1925 than in

1924 which has brought the returns for dairymen more in line with costs of production. The prospects for the latter part of 1925 were not so encouraging, however.

The United States Bureau of the Census completed an Agricultural Census early in 1925 which has been published in the usual form. This covers farm information of various descriptions by county and state units. For purposes of really getting at local problems, however, these tables are too general. Therefore, at the request of several other states as well as Maine, the Director of the Census has offered to make tabulations on a town basis of the items of most interest to each state. This work will be done at actual cost and is now being accomplished for Maine. The cost will be $1,900.00, the Federal Land Bank of Springfield, Mass., has contributed $300.00 for the sake of getting this detailed information for their own use, so that the net cost to this Division will be $1,600.00. This should be printed in pamphlet form as soon as possible for the general use of the public.

Cooperative Organizations

So far as cooperative purchasing organizations are concerned, particularly for grain, there is less need of new work along this line than has been the case for the last twenty-five years.

Cooperative and individual organizations covering large sections of the country have developed a system of car door deliveries of grain which appeals strongly to the cash buyer. Recognizing the real competition which this car delivery and cash plan has brought about, the old established firms have adopted means of meeting this condition. The result is that users of grain in Maine are buying it on as close a margin as is possible to do business safely.

The cooperative canneries of blueberries, corn, beans, etc., which were organized several years ago are all doing a successful business. In fact they are now all full grown business concerns amply able to care for themselves.

The Farmers Unions and Grange Stores throughout the State have become recognized business enterprises. Through experience, methods of business practice and bookkeeping have constantly improved. The requests for audits by a disinterested party from these or other cooperative organizations are gladly complied with wherever possible.

Information as to the best forms of organization for special community problems are kept constantly on hand. Several surveys have been made in cooperation with County Agents as to the need and possibility of success of creameries, cheese factories and canneries.

One of the best evidences of the growth in strength and influence of farmer owned cooperatives is furnished in the hearings now being held before the Interstate Commerce Commissioner on the proposals of the Boston & Maine Railroad for increased rates on the transportation of dairy products. These rates were to have taken effect April first, but prompt objection on the part of the New England Milk Producers Association and the Turner Centre System in cooperation with other large milk handling companies secured a suspension of rates for ninety days. The railroads have already presented their side of the case and early in August the producers and shippers will present theirs. This action has already saved producers over $200,000 and it is to be hoped that much more will be accomplished. At all events it shows the ability of the N. E. M. P. A. and the farmer owned Turner Centre System to put up prompt and effective defence of the producer's rights.

Lectures and Demonstrations

Members of the Division of Markets have attended 167 meetings of various kinds always discussing some side of the problem of marketing farm products to the best advantage. These meetings have been attended by 10,254 people or an average of 61 persons at each.

In addition to these miscellaneous meetings, demonstrations have been carried on along three special lines, Hay Grading, Wool Pooling and Community Fruit Growers Associations. Mr. Sturtevant spent four weeks in Washington, D. C. during August 1924 taking an intensive course in hay grading. Since that time he has conducted 34 grading demonstrations attended by 919 people. This project will not require a long period of education apparently, as the increased use of automobiles and trucks has practically ruined the city hay markets. Present prices are too low to encourage the growing of hay as a cash crop. Hence, any discussion pertaining to the sale of hay arouses but little interest.

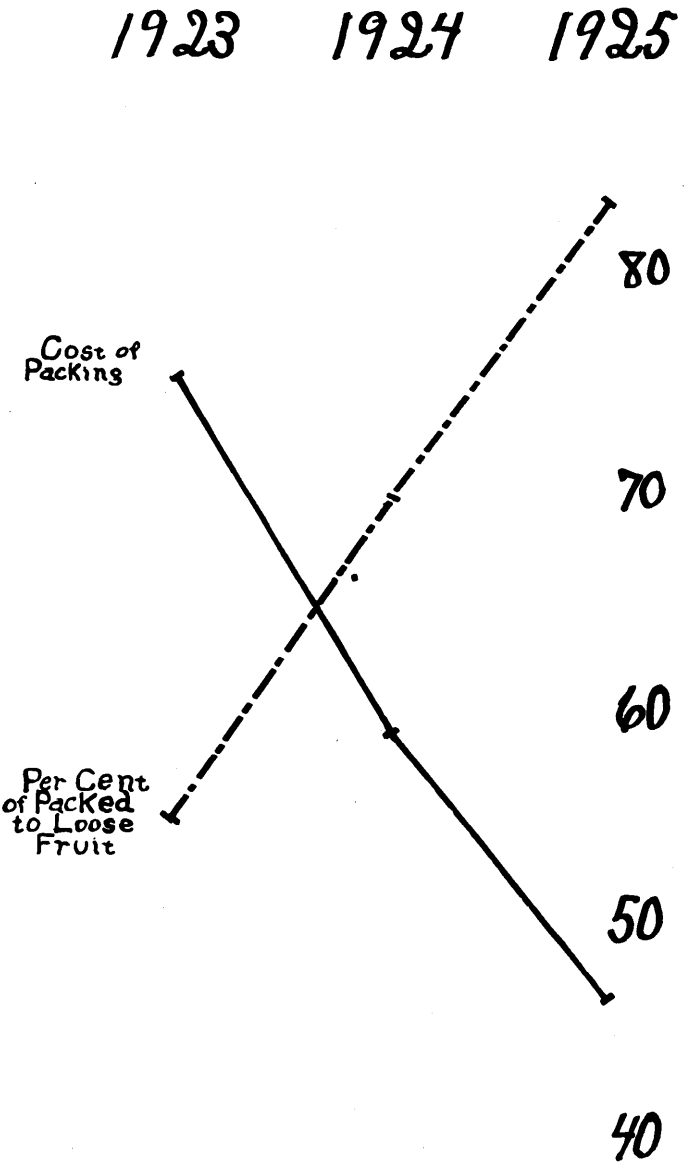
Ever since the organization of the Maine Sheep & Wool Growers' Association in 1921 the Division of Markets has tried to cooperate in every practicable way to promote this excellent sales organization. During June of 1925 two members of the Division were used to help Locals of the Association in assembling their annual pool, for over two weeks. From the discussions at these pools it was plain to see that a large majority of the members were not informed as to the purposes and accomplishments of their own Association. Therefore in planning the 1926 Pool Mr. Crawford arranged for sixteen evening meetings. At these meetings sets of thirty-five stereopticon slides were used to distinct advantage. The growth of the Association both in membership and pounds of wool pooled was shown year by year. The various steps of assembling, grading, manufacturing and selling as well as the profits made for the members were also shown. Assuming the wool to be an investment at the cash price paid by local buyers the dividends to members have been from 25% to over 100% according to market fluctuations in different years. The sooner it is generally understood that cooperative organizations can make returns to their members only in proportion as they render selling service and that profits can be realized only after the service is rendered, the sooner will it be understood that some producers who must have immediate cash for their products have no business to join a cooperative. This is particularly true when the cooperation operates on a no stock, no profit plan.

The production of apples in the commercial sections of the United States seems to be slowing up. In fact there has been an 8% decrease in the number of trees during the last five years. This is reflecting the effect of long distance shipping costs which have become more apparent since 1913. During this time many of the less productive orchards n the northwest have been abandoned. Thus the pressure of surplus apples from these more distinct states promises to be less for the next few years and offers the chance for Maine and New England apples to supply the eastern markets. This last winter Fancy and A. Grade McIntosh have replaced many of the western boxed apples in the Boston market. Careful packing and a constant supply of this delicious variety is bound to capture a still larger share of the consumer's trade. Recognizing that there are thousands of young Mac trees just coming into bearing in Maine, Mr. Sturte-

vant of this Division working with the Extension Service of the University of Maine, the Experiment Station, Maine Fruit Growers' Exchange and other interests, is planning a State wide meeting of Mac growers to be held at Highmoor Farm to discuss means for marketing these fancy apples to the best advantage. A representative of one of the largest commission houses in New York will be present and it is hoped plans may be made that will be a forward step in the marketing of Maine apples.

The systematic work begun with one local association three years ago and started with two others two years ago has been continued with gratifying results. Figures are now available from the three associations showing net returns to the members, costs of packing and factors which tend to decrease returns. One of the points which argues strongly in favor of the community packing house is that all the apples have been sold. The returns on the packed fruit are as good or better than the price ordinarily obtainable, while the returns from the culls are usually sufficient to pay a large part of the entire packing costs. This is a distinct forward step as too often the culls are a complete loss. Mr. Sturtevant has done practically all of the field work connected with the Fruit Growers' Association work making 28 visits to six different Associations during the fall of 1925 alone, at three of these associations he supervised the packing of 29,416 barrels. He has also given packing demonstrations for 32 individuals.

The striking relation of costs of packing to quality of fruit is revealed by the three years records of the Winterport Fruit Growers' Association. The quality of the fruit has improved each year which of course has increased the number of barrels of packed fruit compared to the barrels of fruit delivered. The following graph plainly illustrates this point.


1923
1924
1925
80
70
60
50
40
Cost of Packing
Per Cent of Packed to Loose Fruit

Net returns to the grower depend a whole lot on the proportion of fruit which is A grade. It is therefore hard to separate the marketing from the production problems of the farm. An actual comparison of two growers will illustrate this point.

GROWER NO. 1.

Delivered 72 barrels apples from which were graded:

17 bbls.	A grade that netted	$ 66.90
38 bbls.	B & Uncl. that netted	119.59
17 bbls.	Ciders that netted	6.73
72	Totals	$193.22

or $2.68 per barrel

GROWER NO. 2.

Delivered 115 barrels apples from which were graded:

3 bbls.	A grade that netted	$ 11.15
60 bbls.	B & Uncl. that netted	220.82
52 bbls.	Ciders that netted	19.59
115	Totals	$251.56

or $2.18 per barrel

Thus Grower No. 1 received 50c per barrel more for his fruit just as it came from the tree than did grower No. 2 and all because of better quality. This shows in dollars and cents very strong reasons for better care of orchards. The extra 50c a barrel would easily pay for spray costs as well as a tidy little profit.

There is every reason why more fruit growers associations should avail themselves of the lessons learned by these Associations who have conducted their business so carefully. However, many growers have nearby markets for a large part of their crop and hesitate to change their usual methods. There are, nevertheless, ample markets for all the quality apples which Maine can produce as is amply proven by the large quantity of New England McIntosh which have replaced western boxed apples in the Boston market during the season just passed.

Information

A modest sheet giving the wholesale prices of hay, grain and food was started early in 1924. This has been continued on a weekly basis ever since. At the end of each year the mailing

lists have been revised and those not interested enough to ask for a continuance of the price list have been dropped. Yet the number issued increases slowly and nearly 600 are now put out. At the time of revising the lists the subscribers are asked for suggestions as to how the news given can be improved. These have been most helpful and the ideas advanced have been followed so far as possible. Acting on these hints the retail prices of grain are now given according to the J. B. Ham Company chain of grain stores scattered throughout Central Maine. The Division of Markets is indebted to this Company for their ready cooperation. On the back of the sheet is given the Boston market on beef, milk cows, poultry, eggs, apples, potatoes, butter and wool with other information of general interest at different seasons.

During the summer of 1925 Mr. Sturtevant made a careful survey of typical Roadside Markets in the central and southern part of the State. Personal interviews were held with over 300 owners and much valuable information was secured which may be summarized in a few lines.

First, it should be located where easily seen and approached without danger. The parking space should be ample.

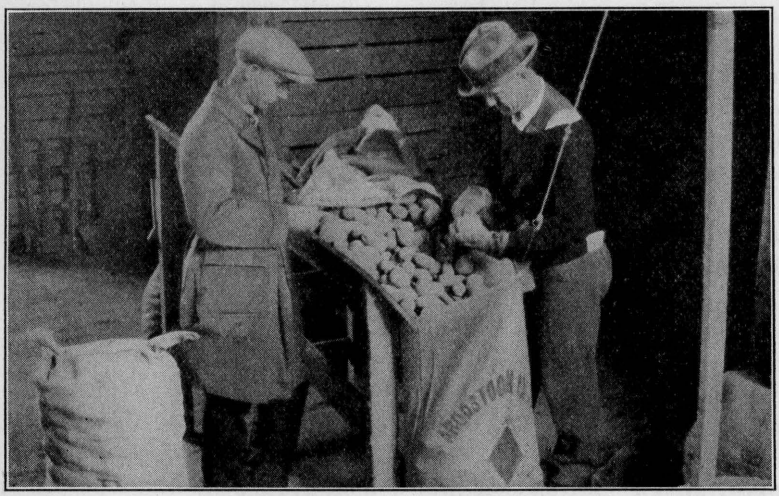
Second, the stand need not be expensive, but should be neat with clean and orderly surroundings. Frequent use of paint will keep up its attractiveness. Ample display space should be provided. Shade for the stand and parking space help.

Third, a variety of fruits and vegetables, fresh and attractive, shown. Open for business as early in the season as possible and keep a constant supply.

Fourth, establish fair prices.

Fifth, use attractive signs, announcing what you have to sell, that will get the attention of the motorist before he reaches the Market Stand.

This information has been mimeographed in a nine page circular and is available for distribution.



INSPECTING SEED POTATOES

Shipping Point Inspection

The organization and equipment for inspecting table stock potatoes at shipping points have been gradually developed since 1921. With the promise of favorable prices for the 1925 crop shippers were determined to take all possible precautions against losses and plans were laid for placing inspectors wherever needed. Early in September the Federal Fruit and Vegetable Inspection Service loaned W. V. Stephens to start the work as Supervising Inspector. Later Mr. Stephens was replaced by G. R. Warren who remained until April. Under the direction of these men, inspectors have been kept busy at Caribou, Limestone, Washburn, Westfield, and Presque Isle. An inspector was placed at Houlton,but for lack of business was withdrawn early in January. Service to many other shipping points has been given from these designated stations. The Service is now better understood than ever before and it is a common occurence for a shipper to state that the State-Federal Certificates issued by our inspectors have saved them from $100.00 to $500.00 per car which would have been turned down on a falling market had it not been for the Certificate. Particular credit is due the Inspectors for their loyalty and painstaking work which has contributed in large measure to the success of the Service. There have been 2,073

cars inspected during the 1925-1926 season. Reinspections have been demanded in receiving markets on twenty-four, fifteen of these have sustained the original Maine certificates and only nine have been reversed. This is a most creditable showing as it means that less than one half of one per cent of all inspections have been reversed.

The wisdom of the provisions of Chapter 44 Public Laws of 1921 in authorizing the collection of such "fees as may be reasonable and as near as possible pay for the service rendered," is amply justified by the experience of the last two years. Only a modest appropriation is made for Shipping Point Inspection work and the fees being available as a revolving fund, it enables expansion of the service according to actual needs. In 1924 practically no demand for the Service was made, consequently, about $4,000.00 of the appropriation were returned to the State Treasury. In 1925 the requests for increased service were insistent and had only the appropriation been available less than one-third of the work could have been done. However, as the work increased the fees also increased and took care of the additional expense.

Miscelleanous

Believing firmly in the many advantages of Maine when compared to other states and sections it has ever been the aim of the Division of Markets to sell Maine and Maine opportunities wherever possible.

The Eastern States Exposition at Springfield, Mass., has furnished one of the best means of reaching large numbers of people. In 1924 the new Industrial Arts Building was built covering nearly three acres of land which necessitated moving the State Exhibits from the old Machinery Hall. This moving and rebuilding of equipment increased the usual expense of the Department exhibit and approximately $1,500.00 were used from the Markets appropriation alone. In 1925 the State of Maine Building was dedicated and used for the first time which again caused the Department of Agriculture to move its exhibit. The results are most encouraging as over 133,000 people visited the Maine Exhibits during the week of the Exposition. An attractive booklet in four colors entitled "Opportunities in Maine" was prepared, this explained the diversity and adaptability of differ-

ent types of farming to the various sections of the State. Other booklets were prepared describing farm property for sale. In fact so encouraging have been the results of this publicity work that even more careful preparations are being made for the Exposition next September.

The Maine Farm Lands Loan Commission has depended on the Department for appraisers on the property of applicants. Nineteen farms have been appraised by members of this Division. It will thus be seen that in addition to regularly laid out marketing projects there are many minor tasks which require considerable time. Correspondence alone in answer to inquiries for information often amounts to fifteen or twenty letters per day. Taken as a whole the work is encouraging. A better understanding of marketing problems and the possibilities and limitations of organization to meet the problems is constantly coming about.

In conclusion it should be said that Governor Brewster's friendly attitude toward agriculture, his persistent campaign to sell Maine's advantages to the Country and especially his determined efforts to sell the optimistic side of Maine to Maine people themselves is having an uplifting effect.

The work of the Division of Markets has been made easier and more effective through the help and cooperation of other members of the Department as well as the Extension Service of the University of Maine. The experience of the Federal Fruit and Vegetable Inspection Service loaned to our potato inspection work has contributed in no small measure to its success, and above all the constructive and encouraging over sight of the Head of our Department, himself, has helped to make more useful the activities of the Division of Markets.

Respectfully submitted,

C. M. WHITE,

Chief, Division of Markets.

Statistics of Agricultural Societies

OFFICERS OF AGRICULTURAL SOCIETIES

Name of Society	President	P. O. Address	Secretary	P. O. Address	Treasurer	P. O. Address
Maine State Agricultural Society	Dr. R. N. Randall	Lewiston	J. S. Butler	Lewiston	A. W. P. Cobb	Auburn
Eastern Maine State Fair Ass'n	J. E. Brown	Bangor	A. B. Peckham	Bangor	Geo. L. Coffin	Bangor
Central Maine Fair Ass'n	Ralph A. Jewell	Fairfield	Paul R. Baird	Waterville	Wm. A. Knauff	Waterville
Maine State Pomological Society	W. G. Conant	Hebron	E. L. White	Bowdoinham	T. E. Chase	Buckfield
Maine State Poultry Ass'n.	H. M. Tucker	Yarmouth	C. T. Adams	Portland	Edna D. Smith	Portland
Androscoggin County Fair Ass'n	J. E. Davis	Livermore Falls	Chas. D. Dyke	Livermore Falls	Chas. D. Dyke	Livermore Falls
Greene Town Fair Ass'n.	E. B. Sanderson	Greene	Isabelle M. Coburn	Greene	L. C. Mendall	Greene
Leeds Agricultural Ass'n	E. A. Russell	North Leeds	F. A. Thomas	Leeds Center	W. B. House	Leeds Center
Androscoggin Valley Agric. Soc.	John T. Lindley	Canton	Colby G. Walker	Canton	C. E. Mendall	Canton
Androscoggin Poultry & Pet Stock Association	Harry G. Crowley	Lewiston	E. E. Richardson	Lewiston	I. F. Blaisdell	Auburn
Caribou Fair Ass'n & Agric. Soc.	Edgar W. Russ	Caribou	J. C. Briggs	Caribou	J. H. Marr	Caribou
Houlton Agricultural Society	Geo. H. Benn	Hodgdon	C. A. Hodgkins	Houlton	A. E. Carter	Houlton
Northern Maine Fair Ass'n.	N. F. Perry	Presque Isle	Clayton H. Steele	Presque Isle	M. S. W. Dingwall	Presque Isle
Bridgton Agricultural Society	Frank M. Stone	Bridgton	Fred S. Hanson	Bridgton	Norman H. Libby	Bridgton
Cumberland Co. Agric. & Horti.So	J. Wendell Sturgis	Portland	F. E. Moulton	Gorham	C. M. Foss	Portland
Cumberland Farmers Club	Fred L. Haskell	South Windham	H. H. York	Walnut Hill	Howard L. Winslow	Cumberland Ct.
Freeport Poultry Ass'n.	C. S. Davis	Waterville	L. G. Cushing	Freeport	A. W. Goodwin	Freeport
New Gloucester & Danville Agric. Society	Fred M. Furbush	Auburn	Clarence L. McCann	New Gloucester	Lewis P. True	New Gloucester
Franklin County Fair Ass'n.	Paul S. Hodgkins	Temple	Frank E. Knowlton	Farmington	Jarvis L. Tyler	Farmington
North Franklin Fair Ass'n.	W. Henry True	Phillips	H. W. Worthley	Phillips	F. E. Parker	Phillips
County Fair Agricultural Society	R. V. N. Bliss M. D.	Bluehill	E. G. Williams	Bluehill	M. R. Hinckley	Bluehill
Eden Agricultural Society	C. L. Shand	Bar Harbor	Julien Emery	Salisbury Cove	C. F. King	Salisbury Cove
Hancock County Fair Ass'n.	M. L. Adams	Ellsworth	E. F. Robinson	Ellsworth	E. F. Small	Ellsworth
Cochnewagan Agricultural Society	H. H. Witherell	Monmouth	W. E. Reynolds	Monmouth	R. L. Moody	Monmouth
Kennebec County Agric. Society	Ellsworth E. Peacock	Waterville	E. E. Peacock	Waterville	Fred A. Walker	Readfield
Litchfield Farmers Club	A. H. Rathburn	Litchfield	E. M. Lapham	Litchfield	C. E. Walker	Litchfield
South Kennebec Agric. Society	Leslie B. Hisler	Coopers Mills	Arthur N. Douglas	Gardiner	Arthur N. Douglas	Gardiner
North Knox Agricultural Society	W. E. Perry	Union	H. L. Grinnell	Union	M. A. Lucas	Union
Lincoln County Fair Ass'n.	Geo. D. Pastorius	Newcastle	Edward A. Denny Jr.	Damariscotta	E. R. Castner	Damariscotta
Oxford County Agricultural Soc.	L. E. McIntire	East Waterford	W. O. Frothingham	South Paris	W. O. Frothingham	South Paris
North Oxford Agricultural Soc.	John F. Talbot	Andover	Roger L. Thurston	Andover	Fred A. Milton	Andover
West Oxford Agricultural Society	Chas. W. Farrington	Fryeburg	E. C. Buzzell	Fryeburg	A. D. Merrill	Fryeburg
Western Maine Poultry Ass'n.	C. Guy Buck	South Paris	E. P. Crockett	South Paris	Geo. W. Haskell	South Paris
Bangor Poultry Ass'n.	Wm. H. Northup	Bangor	Harold E. Mongovan	Bangor	Donald F. Snow	Bangor

No. Penobscot Agricultural Soc.	A. H. Lombard	Springfield	F. R. Averill	Prentiss	O. C. Abbott	Springfield
W. Penobscot Agricultural Society	A. M. Atkins	Dexter	E. E. Colbath	Exeter	F. C. Barker	Carmel
Sagadahoc Agric. & Horti. Soc.	H. W. Totman	Topsham	E. C. Patten	Topsham	I. R. Morrell	Brunswick
Richmond Farmers & Mechanics Club	Harry Douglass	Richmond	Claire Bolton	Richmond	F. B. Peabody	Richmond
Somerset Central Agricultural Soc.	Walter P. Ordway	Skowhegan	Geo. H. Plummer	Skowhegan	John W. Fogler	Skowhegan
Somerset County Agricultural Soc.	J. Frank Withee	Madison	C. O. Flanders	Madison	C. O. Flanders	Madison
Embden Agricultural Society	Dana C. Witham	North Anson	Chas. F. Berry	North Anson	Fred C. Ward	Solon
Norridgewock Agricultural Soc.	S. A. Crommett	Norridgewock	Roland E. Everett	Norridgewock	H. F. Tobey	Norridgewock
Solon Agricultural Society	Willey R. Tuscan	Solon	Joseph Matson	Solon	Leon M. Wyman	Solon
Wesserunsett Valley Fair Ass'n.	W. A. Dore	Athens	W. A. Dore	Athens	W. E. Jones	Athens
Waldo & Penobscot Agric. Soc.	Frederick M. Nickerson	Hartland	Geo. A. Palmer	Monroe	F. M. Nickerson	Hartland
New Belfast Fair Ass'n.	James H. Cilley	Belfast	H. C. Buzzell	Belfast	James H. Cilley	Belfast
St. Georges Agricultural Society	James J. Clement	Freedom	Edward B. Bean	Thorndike	Albert S. Berry	Freedom
Tranquility Grange Agric. Soc.	Parker O. Young	Lincolnville	Lawrence C. Rankin	Lincolnville	I. O. Eugley	Lincolnville
Unity Park Fair Ass'n	Nicholas Walton	Unity	J. H. Farrell	Unity	J. H. Farrell	Unity
Cornish Agricultural Ass'n.	Wm. R. Copp	Cornish	Leon M. Ayers	Cornish	S. G. Sawyer	Cornish
Goodwin's Mills Grange Social Aid Society	B. A. Goodwin	Biddeford	Beatrice Duvall	Biddeford	Ella M. Jellerson	Biddeford
Shapleigh & Acton Agric. Society	John H. Sanborn	Acton	Fred K. Bodwell	Acton	Lawrence E. Staples	Shapleigh
West Kennebunk Grange Fair	Fred Thurston	W. Kennebunk	R. C. Parsons	W. Kennebunk	Amos Boyden	W. Kennebunk
South Berwick Poultry Ass'n.	Hugh Trainor	South Berwick	Ralph E. Foss	South Berwick	Charles N. Harvey	South Berwick

FINANCES, 1925

Name of Society	Amount received from State	Receipts for membership	Receipts from loans	Entry fees for Poultry	Receipts from entry fees and trotting purses	Gate receipts	Receipts from all other sources	Total receipts	Total attendance
Maine State Agricultural Society	$2,500 00	200 00	1,000 00	—	4,775 15	25,183 25	17,795 45	51,453 85	41,227
Eastern Maine State Fair Ass'n.	2,500 00	50 00	4,000 00	—	1,991 00	15,182 46	12,480 45	36,203 91	20,243
Central Maine Fair Ass'n.	2,500 00	—	9,800 00	—	1,430 00	14,383 75	6,117 13	34,230 88	15,538
Maine State Pomological Society	1,925 90	78 00	198 00	—	—	—	829 75	3,031 65	1,500
Maine State Poultry Ass'n.	1,297 30	72 00	1,700 00	837 75	—	—	1,934 29	5,841 34	2,000
Androscoggin County Fair Ass'n.	37 55	no report	—	—	—	—	—	37 55	—
Greene Town Fair Ass'n.	45 08	no report	—	—	—	—	—	45 08	200
Leeds Agricultural Ass'n.	60 53	34 00	—	—	—	85 33	17 00	196 86	600
Androscoggin Valley Agric. Society	286 38	3 00	800 00	—	560 00	1,565 50	—	3,214 88	3,131
Androscoggin P. & Pet Stock Ass'n.	175 03	78 00	10 00	—	—	—	538 90	801 93	2,000
Caribou Fair Ass'n & Agric. Society	322 00	—	1,200 00	—	—	2,570 75	774 03	4,866 78	3,333
Houlton Agricultural Society	924 96	—	—	—	60 00	10,569 15	4,288 09	15,842 20	14,092
Northern Maine Fair Ass'n.	2,793 93	31 00	—	—	181 50	19,719 83	3,720 78	26,447 04	26,292
Bridgton Agricultural Society	137 15	—	350 00	—	1,120 00	3,138 41	1,194 83	5,940 39	8,500
Cumberland Co. Agric. & Horti. Soc.	940 03	60 00	—	—	1,415 00	6,999 85	1,516 16	10,931 04	7,769
Cumberland Farmers' Club	119 64	21 00	—	—	230 00	1,770 75	859 59	3,000 98	3,600
Freeport Poultry Ass'n.	295 21	7 00	—	207 00	—	—	232 98	742 19	500
N. Gloucester & Danville Agric. Soc.	204 29	10 00	—	—	193 00	2,491 31	170 50	3,069 10	4,000
Franklin County Fair Ass'n.	1,332 07	1,437 00	250 00	—	1,440 00	7,237 75	3,497 00	15,193 82	21,658
North Franklin Fair Ass'n.	80 43	450 00	—	—	62 50	117 45	131 75	842 13	1,000
County Fair Agricultural Society	190 60	—	—	—	18 00	3,244 65	510 17	3,963 42	6,000
Eden Agricultural Society	53 41	—	—	—	232 50	814 25	595 38	1,695 54	1,500
Hancock County Fair Ass'n.	—	—	1,427 00	—	65 50	4,455 35	861 05	6,808 90	7,877
Cochnewagan Agricultural Society	133 30	—	100 00	—	—	302 65	451 50	987 45	1,500
Kennebec County Agric. Society	143 32	—	—	—	325 00	1,758 75	162 50	2,389 57	4,321
Litchfield Farmer's Club	57 77	—	—	—	—	400 00	78 87	536 64	2,000
South Kennebec Agricultural Society	143 80	—	—	—	15 00	2,114 95	574 74	2,848 49	4,500
North Knox Agricultural Society	196 65	—	—	—	90 00	4,733 90	999 07	6,019 62	12,000
Lincoln County Fair Ass'n.	180 63	5 00	3,300 00	—	238 50	3,777 85	1,440 44	8,942 42	7,554
Oxford County Agricultural Society	940 73	14 00	—	—	2,425 00	8,692 70	9,750 82	21,823 25	15,159

North Oxford Agricultural Society	202 87	—	—	—	45 10	1,431 25	491 83	2,171 05	3,048
West Oxford Agricultural Society	582 86	—	—	—	—	4,929 39	—	5,512 25	9,858
Western Maine Poultry Ass'n.	236 03	no report	—	—	—	—	—	236 03	—
Bangor Poultry Ass'n.	365 32	no report	—	—	—	—	—	365 32	—
North Penobscot Agric. Society	69 45	—	—	—	620 00	1,993 30	948 85	3,631 60	2,000
West Penobscot Agric. Society	407 15	54 00	1,000 00	—	200 00	3,498 00	397 17	5,556 32	8,000
Sagadahoc Agric. & Horti. Society	908 65	20 00	325 00	—	2,702 00	6,834 25	4,975 71	15,765 61	13,668
Richmond Far. & Mechanics' Club	98 86	—	10 35	—	5 00	214 00	450 00	778 21	1,200
Somerset Central Agric. Society	795 36	200 00	—	—	687 00	13,140 44	13,253 25	28,076 05	24,000
Somerset County Agric. Society	68 11	20 00	—	—	—	298 00	1,815 06	2,201 17	900
Embden Agricultural Society	25 23	—	—	—	—	—	67 77	93 00	3,350
Norridgewock Agricultural Society	39 31	—	—	—	164 00	608 50	—	811 81	1,216
Solon Agricultural Society	73 45	—	—	—	15 75	175 90	—	265 10	350
Wesserunsett Valley Fair Ass'n.	207 70	—	—	—	—	1,315 75	611 10	2,134 55	632
Waldo & Penobscot Agric. Society	198 32	—	439 60	—	124 50	1,457 50	290 27	2,510 19	2,917
New Belfast Fair Ass'n.	134 58	560 00	—	—	750 50	2,341 50	1,150 15	4,936 73	4,683
St. Georges Agricultural Society	140 92	—	—	—	125 00	1,625 00	—	1,890 92	3,250
Tranquility Grange Agric. Society	24 24	—	—	—	—	125 25	4 50	153 99	501
Unity Park Fair Ass'n.	111 85	—	—	—	400 00	990 00	378 00	1,879 85	1,980
Cornish Agricultural Ass'n.	239 04	—	—	—	1,080 00	3,648 00	7,286 04	12,253 58	1,296
Goodwin's Mills Grange S. A. Soc.	60 39	14 00	26 40	—	—	328 75	6 50	436 04	1,100
Shapleigh & Acton Agric. Society	91 19	247 50	60 00	—	—	—	197 78	596 47	1,000
West Kennebunk Grange Fair	37 79	—	—	—	439 50	1,661 25	2,485 70	4,624 24	2,250
South Berwick Poultry Ass'n.	149 82	9 00	—	79 25	—	—	76 80	314 87	800
	$25,786 18	$3,674 50	$25,996 35	$1,124 00	$24,226 00	$187,927 12	$106,409 70	$375,143 85	327,593

FINANCES, 1925—(Concluded)

Name of Society	Amount expended in improvements	Amount expended in trotting purses	Expenses during the fair	Amount expended for purposes not previously named	Total amount paid out including premiums and gratuities	Value of property belonging to the society	Amount of liabilities
Maine State Agricultural Society	2,400 78	11,050 00	22,751 33	5,315 78	49,298 89	136,988 00	33,646 33
Eastern Maine State Fair Ass'n.	1,080 60	5,976 00	5,267 98	17,161 14	36,171 22	51,621 84	33,665 23
Central Maine Fair Ass'n.	2,039 90	4,482 75	9,534 64	9,180 82	32,577 36	6,000 00	20,057 15
Maine State Pomological Society	—	—	—	2,112 59	3,091 59	2,400 00	—
Maine State Poultry Ass'n.	—	—	1,401 50	81 55	4,729 84	1,192 05	1,500 00
Androscoggin County Fair Ass'n.	no report	—	—	—	—	—	—
Green Town Fair Ass'n.	no report	—	—	—	201 75	—	—
Leeds Agricultural Ass'n.	13 80	—	196 93	—	475 78	25 00	—
Androscoggin Valley Agricultural Society	150 00	1,350 00	146 00	—	2,380 50	5,000 00	4,000 00
Androscoggin Poultry & Pet Stock Ass'n.	36 48	—	186 50	295 71	798 63	785 00	543 53
Caribou Fair Ass'n & Agricultural Society	—	566 25	1,125 64	442 80	3,380 64	15,000 00	3,093 62
Houlton Agricultural Society	—	5,560 00	8,826 40	1,409 91	18,275 51	25,000 00	30,000 00
Northern Maine Fair Ass'n.	—	5,297 00	12,861 49	—	24,225 74	75,000 00	26,944 00
Bridgton Agricultural Society	249 80	2,240 00	988 61	677 80	4,993 51	4,500 00	2,000 00
Cumberland County Agric. & Horti. Society	695 48	3,540 00	1,458 03	2,282 33	10,857 34	32,488 00	12,500 00
Cumberland Farmers' Club	421 26	1,400 00	520 93	281 83	3,083 97	4,500 00	—
Freeport Poultry Ass'n.	40 00	—	319 79	—	819 29	750 00	99 17
New Gloucester & Danville Agric. Ass'n.	271 34	960 00	974 01	—	2,951 35	3,200 00	—
Franklin County Fair Ass'n.	3,384 10	2,160 00	1,929 70	3,198 13	15,353 48	45,000 00	—
North Franklin Fair Ass'n.	50 00	625 00	312 90	—	1,223 57	2,800 00	1,800 00
County Fair Agricultural Society	578 58	1,230 00	587 00	1,740 62	4,811 80	5,000 00	—
Eden Agricultural Society	386 50	442 50	581 27	—	1,612 52	2,500 00	525 00
Hancock County Fair Ass'n.	480 00	1,876 50	—	3,659 17	6,697 77	35,000 00	—
Cochnewagan Agricultural Society	585 94	—	69 31	—	1,160 75	—	100 00
Kennebec County Agricultural Society	291 60	1,100 00	435 00	182 75	2,579 85	2,000 00	—
Litchfield Farmers' Club	17 90	—	136 20	51 00	423 55	650 00	—
South Kennebec Agricultural Society	123 74	612 50	806 91	926 82	2,967 29	2,000 00	—
North Knox Agricultural Society	1,476 50	1,110 00	1,934 87	867 21	6,364 63	4,000 00	—
Lincoln County Fair Ass'n	1,682 43	975 00	5,333 55	55 35	8,940 98	10,000 00	2,148 56
Oxford County Agricultural Society	3,849 30	5,975 00	4,623 54	4,323 12	22,432 81	40,000 00	9,400 00

North Oxford Agricultural Society	350 00	538 00	200 00	435 38	2,088 28	5,000 00	—
West Oxford Agricultural Society	—	—	—	—	2,165 85	1,200 00	—
Western Maine Poultry Ass'n.	no report	—	—	—	—	—	—
Bangor Poultry Ass'n	no report	—	—	—	—	—	—
North Penobscot Agricultural Society	500 00	1,550 00	800 00	307 30	3,532 30	3,000 00	—
West Penobscot Agricultural Society	750 00	1,100 00	675 50	1,347 72	5,562 78	5,500 00	4,500 00
Sagadahoc Agric. & Horti. Society	7,000 00	5,200 00	2,000 00	162 00	17,488 61	20,000 00	—
Richmond Farmers' & Mechanics' Club	60 00	—	242 28	—	765 23	1,000 00	—
Somerset Central Agricultural Society	1,538 30	3,639 05	18,181 77	—	27,328 82	35,000 00	26,000 00
Somerset County Agricultural Society	116 89	305 00	1,141 21	392 50	2,188 75	10,000 00	1,450 00
Embden Agricultural Society	—	—	18 09	—	92 59	150 00	—
Norridgewock Agricultural Society	—	439 00	—	—	761 25	550 00	300 00
Solon Agricultural Society	—	—	38 24	—	317 24	—	—
Wesserunsett Valley Fair Ass'n	100 72	—	861 73	265 63	1,960 46	1,000 00	500 00
Waldo & Penobscot Agricultural Society	286 99	944 00	135 00	490 00	2,475 59	6,000 00	3,346 89
New Belfast Fair Ass'n	500 00	1,500 00	198 41	2,250 02	4,852 27	1,500 00	750 00
St. Georges Agricultural Society	500 00	750 00	250 00	200 00	2,630 84	2,500 00	450 00
Tranquility Grange Agricultural Society	—	—	20 91	—	133 91	3,000 00	—
Unity Park Fair Ass'n	—	1,000 00	218 00	—	1,590 00	2,500 00	—
Cornish Agricultural Ass'n	1,298 38	3,200 00	1,714 07	1,021 75	8,232 45	7,000 00	3,000 00
Goodwin's Mills Grange Social Aid Society	175 00	—	280 06	—	752 21	1,000 00	—
Shapleigh & Acton Agricultural Society	—	—	12 00	107 75	501 00	2,000 00	—
West Kennebunk Grange Fair	260 19	1,280 00	1,422 83	198 00	3,268 42	9,000 00	470 00
South Berwick Poultry Ass'n	3 67	—	76 60	103 00	398 02	40 00	234 25
	$33,746 17	$79,973 55	$111,796 73	$61,527 48	$361,968 78	$620,339 89	$223,023 73

REPORT

OF THE

State Pomological Society

1924-1925

OFFICERS FOR 1925

President

N. D. STANLEY — Pittsfield

Vice-Presidents

W. G. CONANT — Hebron
F. H. MORSE — Waterford

Secretary

E. L. WHITE — Bowdoinham

Treasurer

T. E. CHASE — Buckfield

Executive Committee

THE PRESIDENT, FIRST VICE-PRESIDENT, SECRETARY AND TREASURER, ex-officio

E. W. DOLLOFF — Standish
L. K. LEE — Dover-Foxcroft
G. A. YEATON — Augusta

TRUSTEES FOR 1925

Androscoggin County—W. J. Ricker — Turner
Cumberland County—E. W. Dolloff — Standish
Franklin County—J. E. Collins — Farmington
Hancock County—C. L. Morang — Ellsworth
Kennebec County—F. H. Taylor — Winthrop
Knox County—J. F. Calderwold — Union
Lincoln County—Glen A. Jewett — Head Tide
Oxford County—W. H. Conant — Buckfield
Penobscot County—W. B. Bragger — Exeter
Piscataquis County—Lyman K. Lee — Dover-Foxcroft
Sagadahoc County—Henry F. Butler — Woolwich
Somerset County—W. C. Robinson — North Anson
Waldo County—C. C. Clements — Winterport
Washington County—Millard H. Wiswell — East Machias
York County—Katharine Perkins — Limington

LIFE MEMBERS

Allen, W. H. ..... Buckfield
Andrews, Charles E. ..... Auburn
Atherton, Wm. P. ..... Hallowell
Atkins, Charles G. ..... Bucksport
Averill, David C. ..... Temple
Barrow, F. E., 165 Broadway, New York City
Barrows Greenhouse Co. ..... Gorham
Bearce, Harry W. ..... Hebron
Bickford, Lewis I. ..... Dixmont Center
Bisbee, George E. ..... Auburn
Bisbee, Stanley ..... Rumford Falls
Blaisdell, A. L. ..... Winterport
Blossom, O. E. ..... Turner Center
Bowman, H. G. ..... Hebron
Bradbury, Mrs. Bert ..... Buxton Center
Bragger, W. B. ..... Dexter
Briggs, John ..... Turner
Brown, F. Howard ..... Marlboro, Mass
Brunberg, A. E. ..... Camden
Buck, O. C. ..... Hebron
Burleigh, Miss Clara M. ..... Vassalboro
Butler, Alonzo ..... Union
Butler, Charles Henry ..... Wiscasset
Butler, Charles M. ..... Wiscasset
Butman, J. W. ..... Readfield
Chadbourne, C. L. ..... North Bridgton
Chandler, Mrs. Lucy A. ..... Freeport
Chase, Henry M., 103 Federal St., Portland
Chase, Homer N. ..... Auburn
Chase, Thomas E. ..... Buckfield
Clement, D. S. ..... Winthrop
Clements, C. C. ..... Winterport
Conant, A. A. ..... Hebron
Conant, C. M. ..... Winterport
Conant, E. E. ..... Hebron
Conant, George I. ..... Hebron
Conant, H. L. ..... Hebron Station
Conant, W. G. ..... Hebron
Conant, W. H. ..... Buckfield
Corbett, Herman ..... Farmington
Cottle, A. S. ..... R. 37, Waterville
Crowell, John H. ..... Farmington
Cummings, Marion L. ..... Hebron
Dana, Woodbury S. ..... Westbrook
Davis & Dolley ..... Old Orchard
Dearborn, Hall C., Hampden Highlands
Dennison, Mrs. Cora M. ..... Harrison
DeRocher, Peter ..... Bradentown, Fla.
Dirwanger, Joseph A. ..... Portland
Dodge, Mrs. Lucy T. ..... Orono
Dolloff, E. W. ..... Standish
Dolloff, Harold W. ..... Sebago Lake
Douglass, C. S. ..... Douglass Hill
Dunham, W. W. ..... North Paris
Elder, Geo. K. ..... Lewiston
Emerson, Charles L. ..... South Turner
Emery, Ralph B. ..... Springvale
Farnsworth, B. B. ..... Portland
Farrington, Mrs. G. H. ..... Brewer
Felch, Charles E. ..... Limerick
Fish, Mrs. Benjamin ..... Winterport
Flint, John M. ..... West Baldwin
French, H. C. ..... Rumford Center
George, C. H. ..... Hebron
Goddard, Lewis C. ..... Woodfords
Goding, M. T., 50 St. Lawrence St., Portland
Graves, Mrs. Albert M. ..... Bowdoinham
Graves, Grace A. ..... Augusta
Griffin, O. B., ... Caribou
Grover, Franklin D. ..... R. F. D., Dryden
Grover, Malcolm A. ..... Hebron
Gulley, Alfred G. ..... Storrs, Conn.
Gurney, F. E. ..... Hebron
Hackett, E. C. ..... West Gloucester
Hall, Mrs. H. A. ..... Brewer
Haynes, R. H. ..... Ellsworth Falls
Hardy, E. E. ..... Farmington
Hardy, Walter M. ..... Brewer
Hatch, E. J. ..... Monmouth
Hayes, William ..... Gardiner
Heald, U. H. ..... Paris
Herrick, A. A. ..... Norway
Higgins, Forrest L. ..... Standish
Hinds, W. C. ..... Winthrop
Hitchings, E. F. ..... Orono
Hobbs, E. N. ..... Hope
Hoyt, C. E. ..... New Portland
Hoyt, Mrs. Frances ..... Winthrop
Jackson, F. A. ..... Winthrop
Jewett, Glen A. ..... Head Tide
Jones, Elwyn ..... Dryden
Keene, Charles S. ..... Turner
Keyser, Howard L. ..... Greene
King, Henry P. ..... Portland
Lambert, Mrs. E. P. ..... Danville
Lang, Ivan E. ..... Augusta
Lapham, E. A. ..... Pittston
Leavitt, L. C. 322 West St., ... Biddeford
Lee, Lyman K. ..... Dover-Foxcroft
Leland, John W. ..... Sangerville
Lincoln, E. L. ..... Wayne
Litchfield, J. H. ..... Auburn
Littlefield, Harry W. ..... Brooks
Lombard, Thurston M. ..... Auburn
Lord, Edgar B. ..... W. Lebanon
Luce, Willis A. ..... Mabton, Wash.
McAllister, Zaccheus ..... West Lovell
McCabe, George L. ..... North Bangor
McLaughlin, Mrs. Edna G. ..... Exeter
McLaughlin, Henry ..... Bangor
Macauley, T. B. ..... Montreal, Can.
Macomber, A. C. ..... Dryden
Matthews, E. A. ..... Union
Merrill, H. H. ..... Hebron
Merrill, Oliver F. ..... Gardiner
Merrill, Rupert B. ..... Gardiner
Millspaugh, L. H. ..... Winthrop
Minot, Clarence M.,
426 Summer St., So. Portland
Mitchell, Frederick H. ..... Turner
Mitchell & Co. ..... Waterville
Moody, J. F. ..... Hebron
Moor, F. A. ..... Waterville
Moore, William G. ..... Monmouth
Morse, F. H. ..... Waterford
Morse, W. J. ..... Orono
Morse, W. M. ..... Waterford
Mosher, C. M. ..... Wilton
Nason, E. A. ..... Mechanic Falls
Newell, G. E. ..... Turner
Page, E. E. ..... East Corinth
Page, F. W. ..... Augusta
Palmer, George L. ..... Kent's Hill
Parsons, Howard G. ..... Turner Center
Patten, Mrs. E. C. ..... Topsham
Perkins, Mrs. Katherine ..... Limington
Pingree, Arthur E. ..... Wiscasset
Prince, Edward M. ..... W. Farmington
Pulsifer, D. W. ..... Poland
Ramsdell, E. H. ..... Ripley
Rich, N. H. ..... Charleston
Richards, John T. ..... Gardiner
Richardson, Herbert A.,
82 Best St., Woodfords
Ricker, A. S. ..... Turner
Ricker, Fred P. ..... Turner
Roak, George M. ..... Auburn
Robinson, W. C. ..... North Anson
Rogers, Mrs. Jeanette, North Newburg
Sawyer, Andrew S. ..... Cape Elizabeth
Sawyer, Charles F. ..... Hebron
Saunders, Ernest ..... Lewiston

Seavey, Mrs. G. M. ..... Auburn
Sewall, W. F. ..... Bowdoinham
Shaw, R. W. E. ..... Sebago Lake
Shields, T. O. ..... Winterport
Skillings, C. W. ..... North Auburn
Smith, Frederick O. ..... New Vineyard
Smith, V. N. ..... Buckfield
Stanley, H. O. ..... Winthrop
Stanley, N. D. ..... Pittsfield
Staples, George W.,
904 Main St., Hartford, Conn.
Stilphen, Asbury C. ..... Gardiner
Strout, Charles S. ..... Biddeford
Sturtevant, F. C. ..... Hebron
Sturtevant, Robie ..... Hebron
Sup. Maine Sanatorium Farm ..... Hebron
Taylor, Frank H. ..... Winthrop
Taylor, Miss L. L. (Lakeside) ..... Belgrade
Thomas, D. S. ..... North Auburn
Thomas, William W. ..... Portland
Thompson, A. E. ..... New Gloucester
Thurston, Edwin ..... West Farmington
Twitchell, George M. ..... Auburn
Verrill, H. E. ..... Hebron
Verrill, Harry M. ..... Portland
Vickery, James ..... Portland
Walker, Charles S. ..... Peru
Walker, Elmer V. ..... Oxford
Waterman, Willard H. ..... East Auburn
Waugh, F. A. ..... Amherst, Mass.
Wentworth, H. G. ..... Skowhegan
Weston, Joseph ..... Gardiner
White ,Charles M. ..... Augusta
White, Edward L. ..... Bowdoinham
Whitman, L. E. ..... Hebron
Yeaton, George A. ..... Augusta
Yeaton, Samuel F., ... West Farmington

ANNUAL MEMBERS 1924-25

Andrews, Irving ..... South Paris
Bass, Lizzie ..... Wilton
Bass, Mary A. ..... Wilton
Blanchard, Arthur ..... Cumberland Ctr.
Burns, C. O. ..... Pittsfield
Calderwold, J. F. ..... Union
Canham, V. W. ..... Lewiston
Cole, W. R. ..... Amherst, Mass.
Copeland, R. L. ..... Brewer
Dingley, A. S. ..... South Portland
Emmons, George N. ..... West Paris
Farwell, L. L. ..... New Gloucester
Franklin, P. M. ..... Bolton, Mass.
Gray, R. E. ..... Standish
Hackett, E. A. ..... Bolton, Mass.
Hobbs, E. N. ..... Hope
Hodgman, Mrs. Harvey ..... New Gloucester
Jewett, Fred E. ..... Norridgewock
Jordon, Ira ..... Milbridge
Lord, Mrs. Herbert ..... East Surry
Lord, Mrs. Howard ..... East Surry
Lowell, Harry A. ..... Buckfield
Lucas, W. J. ..... 2 Veranda St., Woodfords
Maloon, W. L. ..... Sabattus
Marston, Mrs. Fred. C. ..... Intervale
Pike, H. W. ..... Winthrop
Reynolds, W. E. ..... Monmouth
Ricker, W. J. ..... Turner
Sinclair, Will ..... Monmouth
Smith, Geo. S. ..... Monmouth
Thurston, R. E. ..... Rockland
True, Albert ..... New Gloucester
Waldo Co. Farm Bureau ..... Belfast
Wescott, Mrs. William ..... No. Bluehill

ANNUAL MEETING OF MAINE STATE POMOLOGICAL SOCIETY LEWISTON, MAINE, NOVEMBER 18, 1924

The Annual Meeting of the Maine State Pomological Society was called to order by its President, Mr. Neal D. Stanley, who presided in the Chair throughout the Meeting.

The Committee on Resolutions for the ensuing year was appointed by the Chair as follows: Mr. F. H. Morse, Mr. A. K. Gardner, Dr. Geo. M. Twitchell.

President's Address

Members of the Pomological Society; Ladies and Gentlemen:

It is a pleasure to welcome you at this time to our fifty-first annual meeting. I want to congratulate the fruit growers of Maine on the fine showing they were able to make this year to the members of the American Pomological Society who visited us this summer. There were only two days in which to show them what Maine was doing in the fruit industry. All the orchards we visited showed much thought and care were being put into the growing of good apples. In traveling over the State and talking with the growers, I feel that the growers of apples realize they must keep up the good fight by continued better care of their trees and increased care to put up the best possible pack. We must do these things if we are to continue selling our apples; the west and south are shipping more into our markets every year and it will be harder and harder each year to sell our apples unless we do something to meet this condition. The first thing is of course good care of the trees in order that we may grow cleaner fruit and the next is to keep our poor fruit in our own cellars and ship only No. 1 apples. If we should put up only Fancy apples three inches and over, and No. 1's 2½ inches and not ship any No. 2's, it would not be long before our apples would

take the place they deserve and hold it against all competition from the west. Nature has given Maine the best flavored apples that grow and it is up to us to do our part and put these apples on the market on the same level with other states. Maine needs more canneries in which to take care of the better grade of No. 2 apples, and let the Bens and culls go to the evaporator to be used for shipment to foreign countries where they are made into champagnes, jellies and vinegar. These evaporators are not very expensive and there should be one in every community run in conjunction with the local packing house.

At our annual meeting last year it was suggested that we do something about the uncared for orchards and diseased trees. I want to suggest that the Pomological Society take some action at this meeting and appoint a committee to draft a bill for this session of the Legislature; also one to increase the minimum size of our No. 1 apple to 2½ inches so that we may better compete with other states. We shall need the backing and support of every fruit grower in Maine to put this bill through and any fruit grower who does not belong to the Society should pay his dollar or better still make it ten and have a life membership. This is your fight and we must have you all behind us if we are to help the fruit growers and put more dollars into his pockets. I wish at this time to express my appreciation of the cooperation we have received from the Dept. of Agriculture and the University of Maine. I have had to call on the county agents for help in several ways and have always found them ready and willing to cooperate. I shall hope to meet some of them here and personally thank them for their support.

A Member: Suggestion was made by a member that some recommendations contained in the President's Address receive the attention of the Society and that a report be made on them during the day. It was further stated in regard to the size of the apples, that at the Auburn, Maine, meeting last February, this point was discussed and it was voted to recommend the 2½" apple as being necessary in order to compete with standards of other New England states.

The motion was made and seconded that the above matter and also the President's recommendation in regard to neglected orchards be referred to the Committee on Resolutions already appointed by the Chair.

Treasurer's Report

Buckfield, Maine, Feb. 1, 1925.

Annual report of the Treasurer to the Commissioner of Agriculture

RECEIPTS

WORKING FUNDS

1924				
Feb.	1	Cash on hand (as shown in previous report)	$	4.89
Feb.	8	Rec'd from H. M. Tucker (1-3 share of hall rent)		6.43
Feb.	20	" State Treasurer		505.80
Mar.	24	" State Treasurer		860.99
Mar.	24	" Annual dues of 1923		18.00
Mar.	24	" Sale of apples		2.95
Apr.	21	" Six months interest on bonds		22.50
May	6	" One life membership		10.00
June	20	" Interest on Liberty Bond		21.25
July	5	" Interest on bank stock		16.00
Aug.	22	" State Treasurer		632.96
Sept.	16	" One life membership		10.00
Nov.	21	" Lewiston Chamber of Commerce		423.65
Dec.	2	" Refund of advertising bill		10.00
Dec.	11	" Interest on bonds (22.50) and Liberty B.(21.25)		43.75
Dec.	17	" One life membership		10.00
Dec.	22	" H. M. Tucker (1-3 share of hall rent)		17.03
Dec.	29	" Annual memberships of 1924		22.00
Dec.	29	" Three life memberships		30.00
1925				
Jan.	6	Interest on bank stock		16.00
		Total receipts		$2,684.20

Permanent Fund Invested as Follows:

Four shares Farmington Nat'l Bank stock	$400.00
Two $500 bonds, Stockton Springs Water Co.	970.00
One Liberty Bond	1,000.00
On deposit in savings bank	390.00
Due for transfer from working funds	100.00
Total	$2,860.00

DISBURSEMENTS

Order No.	Paid	
140	E. L. White, 6 mos. salary (to July 1, 1923)	$ 75.00
141	E. L. White, expenses	63.26
163	W. G. Conant, Executive Committee expenses	8.82
164	H. P. Sweetser, judge annual meeting	37.89
165	Lyman K. Lee, Exec. Comm. expense	11.38
166	T. E. Chase, 6 mos. salary & expenses	13.50
167	W. C. Robinson, expenses	13.17
168	Geo. F. Potter, speaker, Orono	26.42
169	W. F. Dunham, printing	18.00
170	J. P. Hutchinson & Co., Treas. Bond	5.00
171	T. E. Chase, Exec. Comm. expense	7.35
172	E. L. White, 6 mos. expenses	20.24
173	E. L. White, 6 mos. salary	75.00
174	A. Kelsall, speaker, Orono.	35.74
175	Lyman K. Lee, Exec. Com. expense	6.51
1	T. E. Chase, Exec. Comm. expense	10.00
2	N. D. Stanley, President's expenses	35.10
3	Bastian Bros. Co., Badges, annual meeting	20.20
4	A. L. T. Cummings, Federation Dues	6.00
5	A. K. Gardner, judge	37.80
6	DeWitt Hotel, lodging of officers, speakers, etc.	131.65
7	Geo. E. West, carpenter work, annual meeting	40.00
8	E. L. White, 6 mos. salary	75.00
9	E. L. White, expenses	63.56
10	Banquet tickets for speakers annual meeting	9.00
11	B. Peck Co., cloth used annual meeting	8.10
12	W. G. Conant, expenses	29.20
13	E. W. Dolloff, expenses	23.68
14	Lyman K. Lee, expenses	16.36
15	Mrs. Paul S. Clark, stenography annual meeting	37.29
16	H. P. Sweetser, judge	32.84
17	W. F. Dunham, printing	14.20
18	N. D. Stanley, expenses, field day meetings	80.30
19	Premiums	569.50
20	Premiums, boxes and barrels	650.00
21	T. E. Chase, expenses	14.95
22	E. F. Hitchings, judge	36.25
23	Homer N. Chase, advertising bills	52.50
24	N. D. Stanley, expenses, annual meeting	51.65
25	P. H. McGillicuddy, watchman at Armory	15.00
26	L. B. Raynes, clerical work	8.00
27	J. F. Calderwold, acc't error in premium list	2.00
28	Portland Chamber of Commerce, dues	25.00
29	T. E. Chase, 6 mos. salary	12.50
30	G. A. Yeaton, expenses entertaining Amer. Pom. Soc.	35.00
31	Me. Fr. Gr. Exchange, entertaining Amer. Pom. Soc.	28.25
32	Lewiston Journal, white paper for annual meeting	2.60
33	Rent of safe deposit box	3.00
34	T. E. Chase, 6 mos. salary	12.50
	Total disbursements	$2,606.26
	February 1, 1925, Cash on hand	77.94
	Total	$2,684.20

Respectfully submitted,

T. E. CHASE,

Treasurer.

The Secretary, Mr. E. L. White, addressed the Meeting with reference to the balance shown on the Treasurer's books. Mr. White explained that as the State's fiscal year begins July 1st, and as Mr. Chase, the Treasurer, begins his year on January 1st, it happens that quite a few bills are now outstanding. Mr. White also referred to the printing of the Annual Reports and explained that the Society has lost through the action taken by the Government in printing same biennially and that this is the reason for the members having failed to receive copies of the Annual Reports. Formerly reports of State organizations were printed each year.

Mr. Alleman in his official capacity as State Chairman of the Fruit Show stated that the sum of $10.00 is owed to the Fruit Show Fund by the Society, and that he would like to effect collection in order that that amount might be added to the sum of $90.00 at present on deposit in the bank to the account of the New England Fruit Show Fund.

The Secretary assures Mr. Alleman that the $10.00 item will be turned over to the Fruit Show Fund.

A Member asked the Secretary and Treasurer for an estimate as to what the total of the outstanding bills would amount to, and received the explanation from the Secretary that this year's expenditures would amount to approximately those of last year.

After the above discussion it was voted to accept the Treasurer's Report.

REPORT BY MEMBER OF EXPERIMENT STATION COUNCIL

Report on Orchard Investigations for Mr. W. H. Conant.

The orchards at Highmoor Farm originally consisted of about 3,000 trees, chiefly Ben Davis and Baldwins. During the past few years a large number of the Ben Davis trees have died as a result of the winter injury in 1917-18. Accordingly practically all of No. 2 Ben Davis orchard has been removed and also a large part of No. 1. There are remaining two blocks of Ben Davis trees or a total of about 400 or 500 Ben trees in good condition. On one of these blocks of trees spraying experiments are being conducted. On the other block of Bens fertilizer experiments have been conducted for the past two years. In the Baldwin orchard a considerable number of trees have also died and for

experimental work this orchard is practically worthless. At the present time the Station is growing several thousand nursery trees and is planning to set out several new orchards.

The fertilizer experiments on the Ben Davis trees have given very striking results. These trees are between 30 to 35 years old and are in reasonably good condition so far as disease and injury are concerned. They have been in sod for the past five years and have not been very vigorous. Last year nitrate of soda was applied at the rate of 3, 6 and 12 pounds per tree on various plots. Nitrate was also applied this year at the rate of 6 pounds and 12 pounds per tree. The application of nitrate of soda the first year could only affect the fruit already set, but even under those conditions the increased yield per tree was about one barrel. Thus about 20 cents worth of nitrate increased the yield about one barrel of fruit per tree. This year the nitrate was applied in the same manner and of course the trees had the benefit from last year's application. As a result of two years' treatment the trees which received 6 pounds of nitrate yielded 2.2 barrels of fruit per tree as compared with .7 of a barrel on the unfertilized trees. Moreover the fruit on the check plots or unfertilized trees was too small in most cases for commercial pack, so that it is safe to say that the application of 20 cents worth of nitrate each year for the past two years has increased the average yield per tree to almost two barrels of commercial fruit. The use of 12 pounds of nitrate per tree resulted in an average yield of 2.4 barrels per tree, only .2 of a barrel above the trees which received 6 pounds of nitrate. However, the growth on the trees which received 12 pounds was considerably better than those which received 6. In neither case, however, was the growth excessive.

These fertilizer experiments are in one respect rather remarkable. In 1914 fertilizer experiments were started on the Ben Davis orchard using a complete fertilizer containing nitrogen, potash and phosphate. Fertilizer was applied at the rate of 500 and 1,000 pounds per acre and a check plot kept for comparison. The trees receiving 1,000 pounds of fertilizer per acre receive about 14 pounds of fertilizer per tree of which about 3 pounds were in the form of nitrate. The application of a complete fertilizer for five years showed no significant increase in the fertilized plots over the check plots and yet these trees were receiving several pounds of nitrate each year. It is possible that the potassium or phosphate in a complete fertilizer inhibited in some way the

beneficial effects of the nitrate in the complete fertilizer. This suggestion is in accord with the results of the New Hampshire Experiment Station on tomatoes. Further work will be conducted along these lines on certain of the orchards which will be set during the coming year. All of the experimental work with fertilizers at Highmoor show that trees respond to applications of nitrate and that phosphate and potash applications are a waste of money.

The nursery started three years ago is in excellent condition and the Station has some very fine two-year old trees which will be set next spring. The buds for this nursery were selected from productive and unproductive McIntosh, Ben Davis, Spy and Delicious trees from Highmoor Farm and from the orchard of Messrs. Chase, Conant and Bragger. In certain cases the productive trees produce almost 10 times as much fruit as the unproductive and yet the buds selected show very little difference in their growth in the nursery. In most cases, however, there is a slight difference in favor of the buds selected from the productive trees. It is possible, however, that this difference is only temporary as the difference this year is less than it was last year. Experiments are being conducted now to determine if buds from productive are more vigorous than those from unproductive. The evidence to date indicates, that so long as the trees are vigorous and healthy there is no effect of selecting buds or scion wood from the more productive ones. In other words there is no basis for pedigreed nursery stock in apples. This nursery was budded on French Crab seedlings. These seedlings vary considerably in size although they were all No. 1 trees. Last year it was found that the larger gave somewhat better results than the smaller seedlings. This year's results are even more striking, and indicate that the large, vigorous French Crab seedlings will result in a better nursery tree than the smaller grade of seedling.

The nursery investigations also show that the trees which were large as one-year whips are also large two-year olds and the small one-year whips have resulted in small two-year old trees. This is in accord with the work previously done on the stock and scion orchard, where it was found that the large two-year olds result in large productive trees when they begin to bear and the small two-year olds remain runts and are unproductive in the

orchard. The nursery work supports the conclusion that the large grade of nursery trees will give better results than the smaller grade.

Last year Stark Brothers' Nurseries gave the Experiment Station 500 Golden Delicious trees. These are in excellent shape this year and are being set out in the orchard this fall. McIntosh and Courtland are being planted in the same orchard for cross pollination.

During the past summer a block of 400 French Crab seedlings was budded. These trees were three years old this past summer and varied enormously in size, ranging from about a quarter of an inch to more than an inch in trunk caliper. The type of growth also differed greatly, ranging from trees which were very short and spreading to those which were upright and erect. The growth of the one-year nursery whips will be studied in relation to type and size of the French Crab seedling stock. A number of seedlings were also grown from several commercial varieties and from natural trees found in the vicinity of Highmoor. The result to date indicates that the McIntosh and Tolman Sweet will produce a large percentage of strong, vigorous seedlings for propagation work. This is in accord with the findings of the United States Department of Agriculture where it was found that the McIntosh and Tolman Sweets are unusually good varieties to grow for seedlings in propagation work.

Last spring a number of root grafts were made, using piece root selection from large and small trees in the stock and scion orchard. Most of these combinations did not grow particularly well because of the age of the piece root cutting. Certain of the grafts made with young two-and three-year old roots grew fairly well. One block of grafts was made, using a very long McIntosh scion, about 12 inches long, and a whole root from some seedlings which were grown at Highmoor. These were planted deep so that the graft union was about eight inches below the surface of the ground. This method has been found to be successful in causing the McIntosh to send out roots of its own. In a year or two these grafts are lifted and the seedling root cut off. The McIntosh is then on its own roots. The roots and the top are alike. It may be possible in later years to make piece root cuttings of these own-rooted McIntosh trees. These piece root cuttings can be successfully propagated by placing them upright in moist

ground. A large proportion of them will grow whereas the ordinary scions will in very few cases strike root when placed in moist earth as a cutting alone. This method of progapating by piece root cutting avoids, of course, the necessity of grafting or budding and may be a worth while commercial practice with certain varieties. Not all varieties will strike roots from the scion and only a comparatively few varieties will grow better on their own roots than they will on the French Crab roots. It is probable, however, that the McIntosh and Delicious will do better on their own roots than they will on the average French Crab seedling root.

Last year an experiment was tried in budding some of the Golden Delicious trees. These trees were one year old but as they were set out late in the spring they grew very little, and resembled one year-old whips. Golden Delicious buds were selected and placed upside down on the Golden Delicious whips at intervals of about 6 inches, spacing them so that the tree would be well balanced when the bud had developed into branches. These buds grew successfully and have produced branches which have a tendency to droop toward the ground and then turn up at the ends after they have grown about half a foot. This method of budding results in branches exactly where they are wanted and makes a union with the tree that is practically impossible to break. There is no crotch as is found on the usual nursery tree, and it appears probable that there would never be any trouble from weak crotches in these trees which have been budded with the buds in this position. A nurseryman in looking over these trees this summer seemed to think that this method might be a worth while commercial practice as he estimated that it would cost only a few cents per tree to insert the buds at the proper places in such a manner. Certainly the resulting tree would be much stronger in every respect.

The Station has for a number of years conducted crossing experiments to determine the compatible combinations of apple trees for insuring adequate pollination and fruit setting. In connection with this work a number of these crosses have been planted and seedlings grown. At the present time we have about 500 trees from the cross of McIntosh and Spy. Many of these trees appear to be of a good type with large leaves. The object is to find a tree which is as resistant to scab as the Spy and as early in coming into bearing as the McIntosh. Further work has

been done this summer in crossing the Golden Delicious and the McIntosh with the object of combining the disease resistance of the Golden Delicious with the color of the McIntosh.

Paul Stark of Stark Brothers Nursery Company says that he has never seen a scabby Golden Delicious apple. This statement was also made by Professor Potter of the New Hampshire Station. If the Golden Delicious is truly resistant or immune to scab and can be combined with the color and hardiness of the McIntosh an ideal apple would be developed for New England conditions. A few crosses were also made between the Golden Delicious and Williams Favorite in the attempt to get the red color in the Golden Delicious.

The nursery trees being grown at Highmoor Farm will be planted for the most part on the new land on the hill north of the farm. There is, however, a very limited amount of desirable land which is in suitable shape for planting trees. There is room for about 500 trees on one of the lower fields. In order to plant all of the nursery trees desired it will be necessary to use fillers so that ultimately we will have only about 500 trees on the hill orchard. The Experiment Station needs more land. This can be obtained by clearing some of the land on the hill where about four or five acres of fairly good orchard land is available. The other alternative is to buy land in the neighborhood which is suited for orchard work. Most of the land on Highmoor Farm is too wet and heavy for most varieties of apple trees. In order to properly conduct the necessary strain, fertilizer, pruning and nursery experiments, land should be available for several thousand mature trees.

It was voted to accept the Report of the Member of the Experiment Station Council.

Secretary's Report

During the year the Executive committee has been called together as follows:—The first meeting was called in February. The work of the last year was closed up and plans laid for the meetings to be held during the summer. The second meeting was held in Augusta. Plans were made for the Annual Meeting. The Premium List was made up after looking over the suggestions made by the Committee named to revise the prizes. The Committee thinks that perhaps further changes are needed.

The Society enjoyed a visit from the American Pomological Society August 15 and 16, the tour commencing in York County going through a small part of the orchard section of Maine including Standish, Limington, New Gloucester, Turner and Buckfield.

Two field meetings were held, the first one being at Exeter in the orchards of Mr. Bragger, where some of Maine's finest Delicious apples are raised. Although the day was rainy, the "get-together" proved profitable, and many questions were asked.

The second field meeting was held on one of Maine's many hill-tops. The home of Mr. Elwyn Jones is surrounded by an orchard where some of the prize fruit shown at our Annual Exhibition is grown. About seventy-five were in attendance. This orchard is a source of income to the owner. A great many of the farmers in Maine could derive a profitable income from their orchards, as well as Mr. Jones.

There are a great many problems facing the fruit growers of Maine. Some must be solved during the coming year. They can not be done by the officers of the Society alone. Each member must take an interest in them, using their influence and sometimes their time and thought.

These annual meetings and exhibitions are held and made successful by the co-operation of not only our own members, but that of the members of other organizations of our State.

We must bear in mind that we as fruit growers can not live alone but must live and let live, cooperating in many of the problems of business with the distributors and consumers.

Report of Mr. Geo. A. Yeaton

Representative of this Society to A. P. S.

Mr. Geo. A. Yeaton advised the Meeting that the pleasure was recently had of entertaining some of the Officers of the American Pomological Society, and that he believes it was a very profitable thing to have had them here. He also believes that quite a bit of interest was stimulated thereby, and further stated that one man who had never seen an orchard of any kind had been interested to order trees with the intention of starting one.

He further stated that a short while ago he attended one of the meetings of the American Pomological Society which was

held in New York City and at that time they expressed a *Vote of Thanks* to the Maine State Pomological Society for the courtesies extended to them, and entrusted the message to Mr. Yeaton to be delivered in the Meeting here today. Mr. Yeaton thinks the work of the American Pomological Society is progressive and believes that it will be well for the Maine State Pomological Society to continue its representation there.

It was voted to accept the above report.

Election of Officers

Mr. Pingree, Mr. Sweetser and Mr. Macomber were appointed to act as Tellers during the balloting.

The following officers were elected for the ensuing year:

Neal D. Stanley, President.

W. G. Conant, 1st Vice-President.

F. H. Morse, 2nd Vice-President.

E. L. White, Secretary.

T. E. Chase, Treasurer.

Geo. A. Yeaton, Member of Executive Committee.

W. H. Conant, Acting Vice-Pres. to New England Fruit Show.

As Mr. Geo. A. Yeaton has acted in the capacity of Representative to the American Pomological Society for a number of past years, he was again elected to act as formerly: Geo. A. Yeaton, Representative to American Pomological Society.

The following were elected to act as delegates to the Federation of Agricultural Societies: Neal D. Stanley, W. Sinclair and W. H. Conant.

Ex-Presidents' Hour—November 18, 1924, 2.00 P. M.

The afternoon's meeting was opened by the President of the Society, Mr. Neal D. Stanley, with a few brief words as follows:

"The first address this afternoon is by Dr. Twitchell. I will say that we had quite a number of Ex-Presidents in unbroken line, but it has developed that two are unable to be with us,—S. C. C. Clements and W. G. Robinson. Brother Robinson is in a very critical condition now, and, he has, as you all know, been in failing health for a number of years. He wanted to be with us, but under the Doctor's orders, he is confined to his house. We sincerely hope that it will be but a short time before he will be able to be with us again."

Dr. Twitchell

"You know a fruit man knows it all. At least, he thinks he does. But he may not know what he thinks he does, and I have a little story in mind I want to tell you. A man wishing to see a neighbor dropped into his yard one day and saw a boy playing there. He asked the boy where his father was, and the boy replied that he was around in back of the house cleaning out the pig pen. The man said that he would go and look for him, and as he was going around the corner of the house, the boy called after him saying,—'You'll know Father,—he has his hat on.'

Our organization dates back to 1882. At that time R. H. Gardner was President. How many present today were connected with the Society at that time? It dates back forty-two years. Our exhibitions were held then in connection with the Maine State Fair in September, and I have here the number of exhibits for that year. I brought it simply to make comparison with the present time.

Collection of apples	570 plates
Single varieties	344 plates
Collection of pears	100 plates
Single varieties	78 plates
Collection of grapes	150 plates
Plums	10 plates
Total of	1,252 plates

This made a very good exhibition that year.

Exhibits of barrels and boxes were unheard of then, and were not thought of for many years after,—only plates were shown.

The total premiums paid that year were $331.00. The amount appropriated by the State for the Pomological Society was $500.00.

When the Society was in its infancy, union meetings were held for the benefit of the farmers. These were three day meetings, beginning Monday and closing Wednesday evening. We held meetings around through country towns in fruit-growing sections of the State. In looking over the records, I find that there was a meeting held that year in Waterville and that Mr. Gardner prepared a very exhaustive paper on one of the then popular varieties, —the Russet, describing several varieties as grown and encouraging the further production of that variety of apples. The universal testimony from all parts of the State indicated pref-

erence for the Baldwin, Greening, Spy and Russet, with a strong leaning toward the Russet, especially in one of the counties. Very slight mention made of scab at that time, I only find the word once. Some one casually mentioned scab as something that they had heard of. Nothing was said about spraying or dusting.

I have been told that the Ben Davis would be a profitable apple to raise in Maine. Is it so? The Secretary of the Board of Agriculture who was one of the loya' workers of the Maine State Pomological Society said that if he were situated as we were he would not base great expectations on a fruit so inferior as the Ben Davis.

I believe he had a clear insight into the value of the apple. If his suggestions had been adopted it would have been as well for us. Its popularity has gone and the future does not promise much for it. There was considerable discussion over the question of the exportation of our apples. Some of our best fruit was packed by buyers and marked "Canadian" because of the higher price it brought in foreign markets. It was a great injustice to Maine growers, yet the practice continued for some years,—for ten or fifteen, I should say. The apples were shipped by way of Montreal. There was a total shipment across that year of 6,073 barrels. Compare that with shipments being made today. See what changes have come. Some people say that the industry is losing, and that we are not doing what we used to do. Some shipments some weeks these times equals total for the entire year then.

The union with the State Fair continued until about 1890, when the Pomological Society commenced holding its annual meetings in November or December. The winter meetings commenced on Monday and closed on Wednesday, the time being given over to discussion of the various problems confronting the growers. The then President of the Society called in the very best speakers he could get and the object was to give aid to the fruit growers. We desired to meet the growers personally and to do everything possible to aid and encourage them. They brought their troubles directly before the Society for discussion and they were given all possible assistance. As I say we visited different sections of the State. In later years we have confined the meetings to single cities, as we do today. Whether this is wise or not, I leave you to decide, but to my mind, we are losing

something in not going about where we can meet and touch directly the men who are growing the apples. The standard today is different,—the commercial interest is higher today, and we are not doing very much in the way of calling in the men who are struggling on the farms in the production of the fruit.

In 1910, I was elected President of the Society at Norway. Mr. White was elected Secretary that year. We had an exhibition of over 2,000 plates. And with reference to that year I want to pay tribute to a man who most certainly deserves it, the man who organized the work of securing special premiums, which have been a decided contribution to later exhibitions, and a great help to exhibitors in meeting expenses. Mr. Homer Chase is that man. He suggested the matter to me, and upon consultations with the Trustees, he proceeded to raise $400. in Lewiston and Auburn, which was offered that year for special prizes. The credit for that step goes to Mr. Chase. He was the one to incorporate it.

Now we come to the present, and I want to touch upon something I spoke about last year, and bring it before the meeting again today, if we are to make progress.

Maine apples have a good standing in the market, but we are not satisfied, I hope, any of us. There is a possibility for improvement. I question whether there is an orchard in the State, no matter how much we are spending for protection in the way of spraying solutions, dusting, etc. but what is breeding disease and pests. I know that is a very strange thing to say to a man who is engaged in the production of fruit. How many can say they have not a dead limb or an old neglected limb on their farms? (No show of hands) It seems to me that there is a tremendous waste of money. We are paying out large sums for spray materials, for labor, etc. in protecting the trees from pests and diseases, yet we go right on breeding pests and diseases. I have them on my place, and I cannot help it. I have neighbors on three sides of me who totally neglect their trees. I have one on the west side where his trees interlock with some of mine, and the consequence is that my fruit is ruined.

Are we going to let this continue, or are we going to do something to protect ourselves? It is one of the industry problems which face the apple growers of today. We should mimimize the cost of spray solution and of labor and we should increase the value of our apples as well as the health of our trees, and in doing

this we will help the industry as a whole. I know that these things involve hardship to individual growers, especially those living adjacent to orchardists who insist on neglect. But the industry as a whole must claim our attention, and when we give it that, then we will think only of protection and of minimizing the expenses.

I was very glad to read this fall an account of the very large Exhibition held at South Auburn. One of the most practicable steps taken in years. If that could be extended over the State, what a help it would be to this industry. We would have a new interest to bring better fruit and so lead finally to the increasing of the standard of quality in these Annual Exhibitions of ours.

When we can lose sight of the dollars and cents involved, then we are going to be on the road to a higher standard of success.

I thank you."

Mr. H. L. Keyser

"It is very evident that the President is very kindly disposed toward the collection of antiques, as he has called on some of the old officers to speak to you this afternoon.

I do not know whether you are as interested as I am in the collection of antiques. I drove ten to twelve miles one day recently to go to an auction of antiques in the hopes of picking up something which I learned was to be had there, only to find that some one had lifted it and had gone away without paying for it.

Dr. Twitchell has pretty thoroughly covered the ground which I had in mind to discuss, so I will devote these few minutes to going back to the time when I was President. Preceding that time, and during the time Dr. Twitchell was President, the Society was very anxious for a law to grade and pack apples. Just at that time I was elected to take the matter up and push it through. It was soon very evident that we had made a mistake. We found that we were trying to pack just as strict No. 1 apples as anybody.

Different views are taken on any law. It so happens that I have recently for the first time come in direct contact with the inspectors. When the law was being considered before the Legislative Committee, the night it was discussed it was weighed very carefully. There was a real desire that no injustice be done

anyone who was trying to produce and pack fruit honestly. They need have no fear. In what I say, I do not intend any discredit to the gentleman enforcing the law here, I have the highest regard for him, and consider him a very honest official, but I do question the intent of the law. The night it was considered by the Committee and reported back to them by the Legislature, the intent of the law was this,—that the Fancy apple should be the means of our building up the State of Maine apple. Get that strongly,—simply because the Fancy as produced today, is building up the No. 1, and this is the opinion on all sides as near as I can make out. There are apples grown which are just as good as the No. 1, such as the Baldwin, which is maroon on one side and green on the other, yet although a fine apple, it is not considered a No. 1, but a No. 2. That is not the intent of the law. As a gentleman stated to me in the interim today, it is unfortunate that the unclassified apple cannot be marketed, but the freight rates are so high that it is pretty near impossible, except in years in which the production is short. I know that Mr. Soule wants to do the most justice possible to the man who is trying to produce the best quality of fruit he can. Make the No. 1 apple a commercial grade of apple for the market, the Fancy to be standard to build upon. That is the intent of the Committee.

I do not feel personally that we as fruit growers would be justified in going to the State of Maine today to ask for money to enforce that law. I may be wrong, but wouldn't it be better for us who want our fruit passed O. K. to pay for it, a certain amount per barrel, and let the money that would thus accrue, go toward helping the others who are trying to get on? Wouldn't that be better?

It was an educational law largely in the first place, and has been to a great extent.

Another thing, there are apples being passed today that have been run through a hole in the sorting table. It is still going on. Something must be done about it.

The stamp or certification will mean something in a few years. Let us pay our share as individuals, and not ask the taxpayers for any more.

I thank you."

Mr. W. H. Conant

"Mr. President, Ladies, Gentlemen and Members of the Meeting. I am glad of this opportunity to look you all in the face once more. It has been some years since I was President, following Mr. Keyser, and I have been very much interested in what Dr. Twitchell gave us of the early history of this organization. Great changes have certainly taken place, and this was brought out by him. In the beginning, the work of the Society was largely research work and investigation to find out the desirable varieties, the hardiness of the stock and trees, etc After a time that particular type of work was unnecessary. Thus it comes on down to my time as President, about ten or twelve years ago, and that was before the days of the Extension Service. It seemed as though the great opportunity that lay before us at that time was to acquaint the growers all over the State with the work of the Pomological Society and what it was trying to do for the State in making the apple industry a State industry. There was more or less missionary work to do in this connection and we did it. We were able to interest a great many people and to give advice in regard to better methods of growing, grading, packing, and marketing. In one particular section of the State we held a meeting and it is very gratifying to me to know that as a result of that meeting (an all-day session) we interested the people there sufficiently so that they took up the work and put that section on the map in growing apples. It resulted in the organization of a marketing association there and you go down there and look that section of the State over, and you will agree that it was money mighty well spent.

It would seem to me that it is the job of the Society to do extension work in rural communities, if we are to fill our place properly. I had hoped to have a little time to think the situation over and to bring to you at least some of the changes which I thought the organization might get behind.

However, I will touch upon two things:

First: Reference has been made to the neglect that is evident along the highways and in every section of the State, the dilapidated condition of many orchards, against which the man who is trying to raise quality fruit is waging an unequal fight. This has been referred to by Dr. Twitchell. It is a good business proposition that something ought to be done. How are we to do it? It

would be practically useless to go to the Legislature this winter to take personal action. Knowing the people of Maine, I think I have a pretty good knowledge of how to look at it. To go there with a drastic bill which would oblige those growers who are guilty of breeding pests and disease through neglect to cut their trees down would be the worst sort of game, for we are all producing our own crop of pests. The first thing to do is to have a clean-up campaign for two or three years before introducing a bill into Legislature. Let it be known far and near that we are looking forward to cleaning up the pests, and let us work together as fruit growers and as an organization to put this across. This is one of the first steps we ought to take.

Second: There is one other thing if we are going to put the Society where it belongs. We are not only growing pests, but those pests are multiplying. In early years scab was mentioned but once. We cannot now go out to look at a barrel of apples, but what we see it. Scab is in everybody's orchard. I have been connected with the Maine Experiment Station through your organization as your representative on the Council, and I have tried to keep in touch with experimental work in other states, and after all these years of work, study and effort in trying to produce quality fruit, I am going to say that one of the big things that this organization should do, and that one of the things every fruit grower in this State should do, is to get behind the work of the Maine Experiment Station as carried on by Dr. Sax and Dr. Folsom. We ought to get behind those men. The Experiment Station is in need of a tremendous lot of nursery trees to plant. We are in need of an orchard of the old Maine varieties of apples, on which those two men can carry on experiments which will mean a lot to us. It is a good work and those men at Highmoor should have our support. It is on them that we can base our hopes to place this industry where it belongs and to bring it to the point where we can successfully compete with other states.

Think these suggestions over carefully. I know that you will make up your mind that there are two real jobs for the Maine Pomological Society to tackle."

Mr. Geo. A. Yeaton

"I had been looking up the past history of the Pomological Society and had intended to talk about just the same matters as did Dr. Twitchell, but there is one thing that I am going to speak of,—what I had hoped to accomplish when I was elected President of the Maine State Pomological Society. I first thought the market end of the proposition was the weak end, and that we should do something to assist the farmers in marketing their fruit. We had spent a great deal of time up to that period talking and encouraging the production of the fruit, but we had not realized the importance of marketing the fruit in the right way as much as we should have. I thought if we could increase the membership and bring it up to a place where we would have members enough, we could get anything we asked for. To that end I started in and applied to the different apple men all over the State who had fairly good-sized orchards, but who were not members of the Maine State Pomological Society, and upon my word the second day I came back as sick as any fellow could be anywhere in the world. I actually called on twenty-nine men in those two days, and I did not get one single one to join the Society. The answer that came was, — 'Well, that's all right,—just what we need; we know how to produce, but we do not know how to market the fruit. You go ahead and get people interested and if it works out well, I will give you the small sum of $1.00 to help encourage the thing along.' Now, if that was not enough to discourage anybody, I do not know what would be. It filled that purpose with me. About all I did when I was President was to lose my courage.

However, there are things that we should do. It is very easy to look back and see mistakes we have made. It is more important to look ahead and think of the things that we should do. I can only repeat that what others have advised and what I advise is that we should clean up the breeding places, the incubators of pests. It is a big job and a job in which we have got to interest every single grower in the whole State of Maine if we are to put it across in good style. For every tree that is diseased and breeding pests, that is cut down, just so much is gained. Do it in a big way, for to do it in a small way is almost wasted energy. The work that we have done the past year since it was first talked about is something. It has been suggested that we do more,

that we make it a business for each member to talk this question over with others outside of the fold. In doing this, we will pave the way. It is good missionary work, and the time is nearer right now than it was a year ago to put it across. I do not know whether it is advisable to go before the Legislative Committee and ask to have this enacted into a law, or whether we should go on for a short time longer and educate the people to the present needs and show them the consequences if they are going along each year and not taking care of their trees. I am a little inclined to look at it from the latter angle, and let it run over until the next Legislature before we ask for too drastic a measure to be enacted. I think that is enough. I thank you."

Report of Committee on Resolutions

Whereas, apple culture offers the greatest opportunities for the agricultural advancement of the State of Maine,—and

Whereas, our fruit industry merits strong official support, both to advertise the quality of our product in consumary centers and to carry the message of the horticultural possibilities of our State to the attention of men who might be induced to settle here and raise fruit,—and

Whereas Maine's exhibit a year ago at the Eastern Apple Exposition, Grand Central Palace in New York City, returned incalculable benefits to the horticultural interest of the State—

Therefore, be it Resolved that we, the Maine State Pomological Society in annual session assembled, respectfully petition the Legislature of the State of Maine for an appropriation not exceeding $1,000. to be expended at the direction of the Commissioner of Agriculture, to advertise Maine apples and Maine's horticultural possibilities at the exhibition most valuable to Maine growers, to be held next Fall at a place to be determined later.

Be it further Resolved that officers of this Society be authorized to take the necessary steps to present this matter to the State Legislature.

Resolved that the recommendations of the President regarding increasing the size of No. 1 apples from 2¼ to 2½ inches be endorsed and the officers be instructed to prepare for necessary legislative action.

Be it further Resolved that this Society realize the necessity for definite legislative action to protect growers from the destructive influence of dead, decaying and neglected apple trees, and recommends the appointment of a Committee to prepare, present and urge the passage of such a law as will insure protection.

Resolved that we endorse the work attempted at Highmoor Farm in testing new varieties and propogating trees, also in methods of budding or grafting.

Be it further Resolved that we urge the organization of community bodies for the purpose of purchasing effective power sprayers or dusters, also graders for the thoroughness in grading fruit, insuring, therefore, better quality and greater uniformity.

Resolved that this Society declares emphatically against the adoption of the Child Labor Amendment by the Legislature and urges upon Senators and Representatives to vote "No."

Be it further Resolved that we sincerely regret the enforced absence of Ex. President Robinson and extend to him our sincere desire for his complete recovery.

Resolved that our thanks are due the City of Lewiston for the generous use of the Armory and to all who have contributed to the success of this Annual Meeting.

Be it further Resolved that we heartily endorse the holding of country and local exhibitions such as were held at South Paris this season, and urge that other sections organize to hold annually such meetings, giving ample time for discussion of problems facing growers.

Resolved that the Maine Pomological Society be placed on record as wholeheartedly in favor of the report of the Committee on the needs of the College of Agriculture and Maine Agricultural Experiment Station appointed by the Maine Federation of Agricultural Associations.

Be it further Resolved that the Maine State Pomological Society be placed on record as heartily in favor of the report of the Committee on Taxation appointed by the Maine Federation of Agricultural Associations.

Resolved that at each annual meeting not less than three candidates for each office be placed in nomination by a Committee of

three to be appointed and notified by the President at least one month prior to the time of holding the Annual Meeting.

Resolutions submitted by Geo. M. Twitchell, A. K. Gardner, and F. H. Morse.

After the Resolutions were read, it was voted to act on the different articles separately.

The first Resolution in regard to asking the State for $1,000. was endorsed.

The Resolution on increasing the size of the No. 1 apple was discussed as follows:

A Member: In general, I think the Resolution is good, but what about the Snow apple? It might be desirable to except this variety. A 2½" Snow apple would be a Fancy.

The President: Wouldn't it be part of the Committee's work to take up this question?

Mr. Keyser: That point is very well taken. One of the reasons that the Committee reduced size of No. 1 apple to 2¼ was on account of the Snow apple. It seems as though a change might be made in the Resolutions and referred to the Committee with authority to increase the size of certain varieties.

The President: How is that handled in other states?

A Member: I do not think it would be well to increase the size of the No. 1 apple. Commercial apple should be 2¼" and up. Possibly later on it would be advisable, but just now I think it would not be profitable to the growers, but would be a burden on them.

This Resolution was finally referred to the Committee to straighten out.

It was voted to accept the Resolution surrounding protection of growers from destructive influence of dead, decaying and neglected apple trees.

It was voted to accept the Resolution surrounding work at Highmoor Farm.

It was voted to accept the Resolution in regard to organization of community movement.

After discussion on the Resolution concerning Child Labor Amendment a vote was taken and the Resolution was finally adopted as read.

It was voted to accept the Resolution regretting illness and absence of Mr. Robinson, Ex-Pres.

The Resolution giving thanks to the City of Lewiston was adopted.

It was voted to accept Resolution endorsing the holding of country and local exhibitions.

Voted to accept Resolution in favor of the report of the Committee on the needs of the College of Agriculture, etc.

Voted to accept Resolution bearing on report of Committee on Taxation.

Voted to accept Resolution in regard to future elections.

The next speaker scheduled was Ex-President A. C. Macomber, who courteously gave over his time to the visiting speaker, Mr. Arthur Miller, from Boston, Mass.

Mr. Arthur Miller

"The marketing problem is a big one. Our Government and others with good intentions, in the past have tried to assure us a way that would help us in our troubles, but they have left us where they found us. It is best that they should. We are better able to work out the marketing problems than anyone could who has come from a school and has had only the theoretical part of it. The marketing of 50,000,000 bunches of bananas, 100,000 to 144,000 barrels of apples, 12,000 cars of strawberries, 20,000 to 30,000 cars of grapes and cherries, etc. which effect the sale of late winter apples creates somewhat of a problem. With these figures in mind you have some idea of the troubles of the market men. To market these as we should is a business in itself.

The right price for a commodity is one that will move the entire stocks. The consumer constitutes the only market. The satisfied customer the best market. It is useless to attempt to market low-grade apples. The expenses of marketing them will not pay the grower. The consumer is the one we must cater to. It curtails consumption to ship a low-grade apple which will not appeal to the consumer.

Many markets will take one variety while another market will not. We must cater to the consumer. We cannot force new varieties on them. They want one of the standard articles, something they can use.

Your President has asked me regarding the 2¼" apple. We have found that there is an inclination among growers to grow big apples. To many it would seem and it is so that large apples bring the high prices, but the retail stores want to sell by the dozen. In different districts of a city, it is very hard for poor families to buy a dozen large apples. They cannot afford it. Of course, we would like to market apples at a lower rate, but it has not been possible for a first-class market to market them. The cold storage is a necessity. It is difficult to attempt to regulate the time that fruit could be kept in cold storage. I do not know but we do try to move the goods as favorably as we can and as economically. The cold storage is a speculative market and it is possible that you may read in the paper today of a market being very strong in apples, and in a day or two you will notice that the market is down from 50c to 25c. This is on account of the speculation. Apples are bought in the fall, and placed in cold storage. Then when they want a market for them, they quote prices,—one man will ask 25c more than another man, and so they create a demand and unload. They start the buyers in the growing districts and get them excited and wanting to buy apples. Afterwards, they sell what they have on their hands and move them from the storage and that is the way it comes about.

Then you ship your apples in a month or so thinking you will get in on the rise in the market and you find that these men have unloaded what they had and yours arrive when the price is low. There are different ways of marketing for the different markets.

The markets seem to run the way the people do and all seem to want the MacIntosh, and to base their prospects for the future on that apple. It is the finest early apple grown. The Baldwin which I still cling to is best for winter market. The reason is that we have an apple to market after the first of the year, and the MacIntosh as a rule is not in a condition to market after the first of January.

The containers seem to bother a great many people. We will have to adopt some other container than the barrel in which to market the MacIntosh.

The Northern Spy should be packed in some other container. It is too beautiful a thing to become spoiled by improper packing.

The quality of the fruit is what will count in the future.

The market problems are so many and so varied that one can-

not in a limited amount of time attempt to cover them. It would take a great deal of time to tell them all. It is of vital necessity in marketing apples to take into consideration the weather, the time of the year and the variety.

If Saturday is pleasant large numbers of apples are purchased, —then if Sunday happens to be rainy and the families remain indoors, these apples are consumed and the purchaser is back for more on Monday. In the foreign sections of large cities there are families with small children. A good sound eating apple, as stated, will oftentimes bring as much money as a larger apple. For storage purposes a 2¼ to 2¾″ apple will keep better late than a 3″ apple. If we did not cater to the late trade in the spring, then the northwest would get all that trade from us. We must spread the apple consumption time over as long a period as possible.

The best price is the price that will move the whole group, not a price that will move some today and none tomorrow.

In the large cities in the apple consumption districts, there are many apples sold over the telephone, and the unclassified apple of the past has not been popular. When a price is given, and the prospect inquires if the fruit is classified and receives a negative answer, he says he does not want it. He had rather have the No. 2.

On the S. S. Leviathan last week there were shipped some unclassified apples, marked as such, together with some No. 2 classified. These were in the same lot of apples. Those marked No. 2 sold for 25c more a barrel than the unclassified. On account of the unclassified being marked as such, thereon the dealer cannot get as much money as he could for the ones he could stand behind and say they were No. 2's.

Marketing of different varieties of apples: Frankly, that has bothered me for a great many years. We have been in the habit of letting our apples stay on the trees too long. By the time they reach a market they are not in condition suitable to reship. When such apples are shipped to a market where an inexperienced man may be buying he finds them in a condition which makes it impossible for him to reship them to other markets with the result that the next year he will not come back because he has lost money.

Some of the members here have asked me in regard to the proper time to pick an apple. I know that the Wealthy takes on color after being picked. It will ripen up and the color come out afterwards if it is picked at the proper time. In one of the valleys of California there is an inspector who travels around and inspects the orchards and tells the fruit growers when the fruit can be picked. It cannot be picked until it is tested by the inspector for the district. He inspects it with an iodine solution, taking the apple and cutting it open. It is tested for its sugar content, and if it is not sufficient, it cannot be picked until it is. If the apple has sugared enough it completes the process on its way to the market, but if it is picked too far short of a certain stage, then it inwardly shrivels. There is no such thing as standing still. It either goes ahead or back. The point is to pick the apple to keep in cold storage. We would have less trouble with apples keeping in cold storage if growers would pick them at right time before they had reached the top to go over. The cold storage retards the sugaring process if picked too soon, and they scald. If picked too late, they will scald. A scalded apple in cold storage is nothing less than a dead apple. Along in the spring time it is on account of the scalded apples that we have complaints in the market that the fruit is practically tasteless. There is no taste to a scalded apple.

The consumer is a peculiar person. We cannot lead him, we have to serve him,—we cannot tell him what he wants. He buys fruit and takes it home. If it is good he will go back for more. Sometimes he takes apples home to eat, and bites into one, leaves it, and bites into another, finally leaving that. He does not know what the trouble is, but he does not like it, and he does not go back to buy more, throwing away what he has bought. Apples like these in a market will shift the demand in the market to something besides apples.

Now the future for Maine is in growing and in continuing to grow good grades of apples.

The Maine apple is ranked highly. There was a rule for years in the foreign markets that a Maine apple should be catalogued at the head as Maine apples. This year it has been eliminated from the catalogue and it was listed as American apple, and we were instrumental in Glasgow and in other markets in arranging to have it placed again on the catalogue as "Maine" apple. A

Maine Baldwin sells in England from 25c to 50c a barrel more than any other apple from any part of the country.

There is paid into America every year from $10,000,000 to $14,000,000 of English money for apples. I alone have sent into the State of Maine a quarter of a million dollars each year for Maine apples. The export market amounts to something. They take the surplus, and it is the surplus of anything that is the profit. The future for the Maine apple is assured if you will only grow them.

I can market them, and I have been doing it for thirty-five years. I have seen them grown and marketed in Central America, South America, Europe and in every big market in the United States. The best way to market them is to produce what the consumer wishes. We must cater to them. You cannot force them. Keep away from new varieties of apples. They are most difficult to get onto a market. Maine Wealthy is not as good this year as it has been in many years. It markets well, but it must be marketed and on its way not later than September 20th.

Apples should be marketed in their season. It is a worthless and useless feat to attempt to market apples out of rotation, meaning that each apple has its season, and to market it at any other time than the right time for that apple is to bring it into competition with another kind. We will consider the McIntosh, which is a beautiful apple and brings good money, but to market it out of the season is detrimental to it. I notice that you list the Wealthy as a cooking apple. Now, personally, I have never known of anybody using them as a cooking apple. They are used as an eating apple.

The Baldwin, the Spy, the Greening and the McIntosh are the varieties to grow. The trade may take the fancy varieties for a short while, but I would advise sticking to the standard apples."

Mr. Miller was asked in regard to the Ben Davis apple, and he replied that if a man wanted to speculate for late shipments to work on in January or February, it does pretty well. The Stark sells very well lately, and it keeps as well as any apple when placed in cold storage. Of course, the life of an apple in cold storage depends upon the time it is picked and placed there.

Mr. Miller was asked by a Member concerning the proper time to pick the apples, and Mr. Miller stated that most apples were allowed to stay on the tree too long, and that, possibly, the Agricultural Department could define the proper time.

The testing solution which is mentioned previously as being in use in California, Mr. Miller describes as an iodine solution which may be obtained at a drugstore. The method is to cut the apple crosswise of the core, and paint it with the iodine solution. If it has sugared sufficiently to warrant picking it will turn a light yellow, but if it has not, the iodine color will remain.

A Member inquired of Mr. Miller if there is not an argument in favor of picking an apple like the Northern Spy twice, and it is the belief of Mr. Miller that an apple as good as the Northern Spy should have two pickings on it. Mr. Miller says they are not keeping so well as formerly. One of the Members said in regard to the Northern Spy proposition that one of the reasons they are not keeping so well is due to the fact that some of the buyers of Northern Spies wanted them to chill three times on the trees because if the apple has not full color when picked it is unattractive. The chilling process injures the keeping quality of the apples, and they will not keep well in cold storage.

The President appointed a Committee composed of Mr. A. K. Gardner, W. C. Robinson and Mr. Washburn to look into the question of the diseased trees and to draft a bill for presentation at the proper time, after which the Meeting was adjourned.

ANNUAL MEETING
MAINE STATE POMOLOGICAL SOCIETY
Portland, November 18, 1925

The Annual Meeting of the Maine State Pomological Society for the year 1925, was held November 18th, in the City Hall, Portland, Maine.

The Meeting was opened by its President for the year 1925, Mr. Neal D. Stanley, and the appointment of the Committee on Resolutions was made by him as the first business on the program.

The Committee on Resolutions is made up of the following: Mr. C. M. Conant, Mr. E. Conant and Mr. Will Sinclair.

The appointment of the above Committee was followed by a brief address by Mr. Stanley.

"It is a pleasure to welcome you at this time to the Fifty-second Annual Meeting of our Society.

At our Annual Meeting in Lewiston last year a Committee was appointed to draft a new apple-grading law. This was done and submitted to the Legislature and, after some changes, was passed.

Within the last month I have attended a conference of all the New England States, in which we discussed a uniform grading law. Every state was represented and it was voted that each Executive Board of each State Society should appoint three men; one grower, one commission man and a third man, neither grower nor commission man, yet one interested in the industry. These eighteen men are to meet again the first of next year, and taking the laws of the different states, draft a bill that will give New England a uniform pack.

I hope every fruit grower will make a special effort to support this bill, as I feel that such a uniform pack will help us to meet the competition from the west.

I want at this time to thank the Officers and Members of the Society for the loyal support given me during my two years in office."

A Report from the Society's Treasurer, Mr. T. E. Chase, was then asked for by the President, and this report is as follows:

Buckfield, Maine, Feb. 1, 1926.

Annual Report of Treasurer, Pomological Soc. to Commissioner of Agriculture

Treasurer's Report

RECEIPTS

Working Funds

1925			
Feb.	1	Cash on hand (shown in previous report)	$ 77.94
Feb.	2	Interest on bonds.	22.50
April	8	Received from State Treasurer	1,325.77
May	7	Received one life membership	10.00
July	7	Dividend on bank stock	16.00
July	16	Received from State Treasurer	600.13
Aug.	6	Received one life membership	10.00
Dec.	3	Received from Portland Chamber of Commerce	704.00
Dec.	9	Received from apples	6.25
Dec.		Interest on bonds	22.50
Dec.		Interest on Liberty Bond (one year)	42.50
Dec.		Received eighteen annual memberships	18.00
Dec.		Received four life memberships	40.00
1926			
Jan.	4	Dividend on bank stock	16.00
Jan.	28	Received from discounted note (Shoe & Lea, Bank)	198.00
		Total receipts	$3,109.59

Permanent Fund Invested as Follows:

Four shares Farmington Nat'l Bank Stock	$ 400.00
Two $500 Bonds, Stockton Springs Water Co.	970.00
One Liberty Bond	1,000.00
On deposit in savings bank	490.00
Due for transfer from working funds	60.00
Total	$2,920 00

DISBURSEMENTS

Order No.	Paid	
37	T. E. Chase, executive committee expense	$ 8.87
38	W. H. Conant, speaker at Orono meeting	19.25
39	F. E. Cole, speaker at Orono meeting	56.03
40	J. K. Shaw, speaker at Orono meeting	35.00
42	E. L. White, six months salary	75.00
43	E. L. White, expenses	23.39
44	Dues to Federation of Agri. Ass'ns	6.00
45	Lyman K. Lee, executive comm. exp.	16.85
46	T. E. Chase, six months salary and expenses	23.15
47	N. D. Stanley, expenses	4.13
48	E. W. Dolloff, exec. comm. expenses	14.45
49	N. D. Stanley, expenses	25.03
50	Lyman K. Lee, exec. comm. exp.	10.60
51	J. P. Hutchinson & Co. Treas. Bond	5.00

52	Federation of Agri. Associations	$ 50.00
53	W. G. Conant, exec. comm. exp.	8.72
1	W. F. Dunham, printing	20.75
2	W. G. Conant, exec. comm. exp.	11.09
3	G. A. Yeaton, field meeting expenses, speaker	20.50
4	T. E. Chase, exec. comm. exp.	27.15
6	N. D. Stanley, expenses as president	36.80
7	R. A. VanMeter, speaker, field meetings	55.62
8	Bastian Bros., badges for annual meeting	34.82
9	J. H. Gourley, speaker, annual meeting	90.59
10	Montsweag Farm, apples	38.00
11	T. E. Chase, expenses annual meeting	15.85
12	Maine Fruit Growers Exchange, apples	117.00
13	Falmouth Hotel,hotel bill of speakers, officers, etc.	136.10
14	A. K. Gardner, judge annual meeting	37.70
15	E. H. Doughty & Son, trucking annual meeting	36.50
16	City of Portland, Police protection annual meeting	13.50
17	The Chase Orchards, apples	46.25
18	T. E. Chase, apples for advertising annual meeting	12.00
19	W. G. Conant, expenses annual meeting	11.90
20	Maine Fruit Growers Exc., trucking annual meeting	2.50
21	Nelson Trafton, labor annual meeting	12.00
22	H. P. Sweetser, judge annual meeting	25.00
23	Mrs. Paul S. Clark, stenographer, annual meeting	36.00
24	E. W. Dolloff, exec. comm. exp.	44.75
25	Miss L. B. Raynes, typing premium lists	10.00
26	Lyman K. Lee, expenses exec. comm.	22.65
27	W. A. Munson, speaker annual meeting	35.81
28	G. W. Peck, speaker annual meeting	76.85
29	N. D. Stanley, expenses	38.92
30	E. L. White, six months expenses	84.99
31	E. L. White, six months salary	75.00
32	E. L. White, complimentary banquet tickets	6.75
33	Premiums	528.00
34	Premiums, boxes, barrels and baskets	451.00
35	Hayden & Dingwell, carpenter work, annual meeting	100.15
36	W. H. Conant, expense as Council member	5.00
37	Transferred to permanent funds	100.00
38	Rent of safe deposit box	3.00
39	T. E. Chase, exec. comm. exp.	11.00
40	G. A. Yeaton, for New England Fruit Show	100.00
41	W. G. Conant, apples	15.00
42	T. E. Chase, six months salary and exp.	13.95
43	Frank W. Wardwell, printing	23.08
44	A. K. Gardner, expense attending conference, Boston	28.05
45	Jewett Printing Co., printing	13.50
46	C. M. Conant, exp. attendance two conferences	60.05
47	Dues, Portland Chamber of Commerce	25.00
	Total disbursements	$3,091.59
	Feb. 1, 1926, Cash on hand	18.00
	Total	$3,109.59

Respectfully submitted,

T. E. CHASE,

Treasurer.

It was Voted to accept the Treasurer's Report as given.

Secretary's Report

The report from the Secretary of the Society, Mr. E. L. White, was then given, and is as follows:

"The Executive Committee has been called together three times during the year.

The first meeting was held in Auburn in February, 1925, the second meeting was held in Augusta in June and the third in Pittsfield on August 27th.

Subjects relating to the regular business of the Society were taken up and discussed.

Three field meetings were held during the summer.

We met for the first field day in the bearing draft apple orchard of Ernest Saunders in Greene with an attendance of seventy-five.

The second meeting was in the large commercial orchard of Mr. Blaisdell in Winterport. Over one hundred and fifty people were in attendance.

The third meeting was in the orchard of Walter M. Hardy in Holden where fancy apples are raised.

The lessons in cultivation, spraying and pruning in those orchards were many and were very instructive to those who attended.

At our last Annual Meeting it was voted to present bills to our Legislature relating to our apple packing law and old and neglected orchards.

We are all familiar with the results of the action done at the last session of the Legislature.

There are yet a great many problems for us as orchardists and farmers to solve.

There is an endeavor being made to have a uniform New England Apple Packing Law and the officers of your Society are endeavoring to join in such action."

It was voted to accept the report of the Secretary.

Mr. W. H. Conant, Member Agr. Exp. Council, gave the next report.

"At the annual meeting of the Maine Agricultural Experiment Station Council in April, 1924, the need of a commercial Orchard planting at Highmoor Farm to replace those killed by the severe winter of '17 and '18, was brought to the attention of the Council by your representative; in case there was no good Orchard soil

available at Highmoor Farm, land adjacent to said farm should be purchased and a commercial orchard started. After due consideration it was voted that the President appoint a committee to go over the situation at Highmoor Farm relative to soil suitable for an Orchard or land adjacent to the Farm which might be purchased, and report to a future council meeting.

The President appointed W. H. Conant, Mr. Thomas Houghton and John W. Leland. This committee met at Highmoor Farm early in July and went over the situation very carefully and did not care to recommend replanting any of the land which had been cleared from the old Ben Davis trees; but were much impressed with the location and nature of the soil, elevation and drainage as well as many other conditions favorable for an orchard site, of a parcel of land adjacent to Highmoor Farm, of about thirty acres bordering the main highway on the southeast leading from Highmoor toward Winthrop.

The committee was able to secure an option on this parcel of land in December, and reported to a special meeting of the Station Council early in January, recommending the purchase of the thirty acres of land, and that an appropriation or resolve sufficient to pay for the land, be requested of the Legislature.

The Council voted to accept the recommendations of the committee and a resolve was introduced in the Legislature, and that Body made provision for the purchase of the land.

At the annual meeting of the Experiment Station Council held at Orono, April, 1925, it was voted that a committee of three men be appointed: one by the Maine Pomological Society, one by the Extension Service and one by the State Department of Agriculture, to cooperate with the Station Staff in the planning and general management of the Orchard Project. The following committee was appointed: A. K. Gardner, G. A. Yeaton and W. H. Conant. This committee met at Highmoor Farm on July 31 and drafted a plan for the Orchard.

Some of the land has been dressed, plowed and prepared; the planting will be started in 1926.

Field Study to Determine the Present Status of the Maine Apple Industry.

This constitutes Maine's share of a general project covering all of New England the purpose of which is: 'To provide the

apple growers of New England with reliable data as to the status of their industry with respect to trends of production and plantings of varieties, competition from other apple-growing areas, production and marketing practices and similar problems. To give the New England crop reporting service a basis for successful work in estimating the apple crop. Accurate reports from this agency are needed by the growers in order to develop and maintain a sound marketing program. To furnish a sound basis for future constructive enlargement of the industry by setting forth the facts as to the possibilities of development in the different parts of New England.'

The plan to be followed and the type of data gathered will be the same (with certain additional information) as in Massachusetts and in the other New England States taking part in the project and the results to be worked up by a central committee."

W. H. CONANT
Council Member.

It was voted to accept Mr. Conant's report.

Mr. Wilson was then asked for a report on the New England Fruit Show, but the subject was referred to Mr. Yeaton, and his report follows:

"We had a very creditable showing indeed at the Show. When we arrived there they gave us a double space,—not connecting, but one at each end of the hall, and with the cooperation of the fruit growers we were able to fill both spaces and make a very good exhibit. I feel very grateful to the men who made it possible.

We were obliged to spend quite a bit of money, but that will be taken care of by the Pomological Society and the Maine Department of Agriculture. I have a report, or rather a list of all expenditures, but I don't think it would be interesting to read, because it is simply a jumble of bills and figures."

It was voted to accept Mr. Yeaton's report.

The election of Officers followed:

W. G. Conant, President.
E. W. Dolloff, 1st Vice-President.
A. K. Gardner, 2nd Vice-President.
T. E. Chase, Treasurer.
E. L. White, Secretary.

C. M. Conant, Member Executive Committee for three years.

W. H. Conant, Member Agr. Exp. Council.

F. P. Washburn, To act as first Vice-Pres. to New England Fruit Show.

A discussion followed the elections as to whether or not it was worth while to send a representative to the American Pomological Society meeting, which is to be held in Kansas City.

No agreement was reached and it was decided to let the matter rest.

Walter Conant, Will Sinclair and Wilson Conant were elected to act as delegates to the Federation of Agricultural Association for the ensuing year.

Under New Business for the day, Doctor Hill of the University of Maine, gave a brief talk.

"I am here in two-fold capacity today,—as State Supervisor of Agriculture in our High Schools and as owner of an orchard of 700 bearing apple trees.

We have about 400 high school boys of about fourteen years of age or older who are studying agriculture, and as part of the work in this subject, they have to do a man's size piece of work at home. In the past, the larger of the boys have chosen to grow potatoes, sweet corn, or to raise hens, and it has occurred to me that this organization might be able to do something to encourage these boys to interest themselves in orcharding as well as other things.

Now then, I would propose that this organization offer for this coming year three prizes.

One of $15.00 for the First Prize
One of $10.00 for the Second Prize
One of $ 5.00 for the Third Prize

These to be given to the three boys in the State who in the judgment of the State Supervisor have the best orcharding project for the year.

I would suggest that this project be at least twenty-five bearing apple trees. These boys would have to submit written plans, written records, and give methods of marketing apples, etc. I think this organization would like to encourage these boys to branch out into these other projects in orcharding."

It was voted to expend $30.00 of the money of the Pomological Society for prizes for this purpose.

The motion was made and carried that the Executive Committee work with Professor Hill on the details, and that publicity be given to the matter at once. Also, that the boys make exhibits at the Annual Meeting.

There was no further business for the morning, and an address by J. H. Gourley, Head of Horticulture, Ohio Agricultural Experiment Station, followed. He spoke on "Maintaining a High Orchard Yield."

Maintaining A High Orchard Yield

J. H. Gourley

"The economics of orcharding and the relation of orchard lands to farm values must continually be faced, consciously or unconsciously, by the orchardist. He is always face to face with two alternatives: can I afford to put any more money into my business, can I afford to put on another spray, or buy another piece of machinery, in the face of the uncertainty of my income. The other is the opposite—can I afford not to make still further investment in order to make more secure the capital I already have invested.

Surely the values of orchard lands should have a relation to the size and importance of the industry and the demand that exists for the product of these orchards. But a study of figures leaves one all but bewildered. During the decade covered by the last U. S. Census there was a loss in my own State—Ohio—of 27% of her apple trees and 38% of her peach trees; at the same time there was an increase in population of 21% and the people were moving from the country to the city. This is a situation that should insure a good market for the fruit produced from the reduced acreage. A further illustration of the trend of affairs or rather the status of them is found in the source of fruit that is consumed in our cities. In the city of Cleveland for instance, there were received during the four months from Sept. 14 to Jan. 25, 1921-22, 601 cars of apples. They were furnished by the following States, according to figures collected by Dr. C. A. Bingham of Cleveland:

Washington	320 cars
New York	174 cars
Michigan	6 cars
Maine	18 cars
Idaho	18 cars
Oregon	25 cars
Ohio	17 cars less than 3%.

These figures, of course, do not recognize the fact that a large amount of Ohio apples are consumed in Cleveland, but are trucked into the city rather than shipped by rail. And yet in the face of this situation it is usually somewhat of a problem with most orchardists to market their fruit crop to advantage, so that the producer can realize a profitable return on it. I do not mean that many growers are not making money directly from their orchards but the State as a whole is not supplied with Ohio fruit in a way that makes it the profitable industry that orcharding should be, and what I have pictured for Ohio applies more or less generally to the industry in the eastern United States.

Part of this difficulty is due to the marketing machinery (or lack of it) that exists in many quarters, part is due to production methods and at least some years part is due to over-production. A large overhead in production methods, a small yield per tree, and insufficient returns combine to the disadvantage of many growers. I used to say (I don't know how accurately), that the yield of apples in Maine could be doubled without planting another tree, and the increased cost would not be proportionate to the return. Ten to twenty cents worth of fertilizer thrown on the ground may easily result in an additional bushel of fruit that is worth at least a dollar. Surely, a good earning on the investment! Instead of orchards competing with witchgrass or Junegrass, hay and stock they could be made to stand on their own feet and return a respectable profit. In other words, an orchard has a high potential value if it can be realized, but there are many factors involved.

Now the value of an orchard, whether viewed as a unit or as an integral part of a farm, depends upon its probable production, together with the number of years that it is likely to yield profitable returns. An orchard may return a larger net profit per acre than can be secured from any agricultural crop with the exception of vegetables, or it may be a liability and an encum-

brance. Furthermore, the same orchard within a relatively short time may be first in the one class and then in the other depending upon several circumstances.

Now you may infer from these introductory remarks that I do not believe that orcharding is a substantial enterprise and one worthy of the attention it receives. I would be sorry to leave such an impression for that would be very wide of the truth. On the other hand I am confident that fruit growing is a phase of agriculture that presents an opportunity to the skillful manager to earn a fair income on his investment, and occasionally to realize rather phenomenal returns from a small acreage. I believe we are justified in maintaining our orchards in a high state of culture, having confidence that better production and marketing methods will insure a higher percentage of successes than in the past, where the location is favorable and the management is sound. But an orchard in an unfavorable location or a manager who is unsympathetic, uninformed, or incapable, spells failure or at least indifferent success almost every time. And all this leads to the nub of what I wish to say, namely that economic conditions make it very difficult to secure a profitable return from the very large, inadequately managed orchard, and that the orchardist's attention should be centered on maintaining a high orchard yield per tree or per acre. That is, the first steps in marketing are efficient production methods, which leads to a brief consideration of a few of the commonplace methods that are involved in the securing of high yields.

The Asset of Vigor in a Tree

Only the experienced orchardist can realize the value of a strong, vigorous tree, for weakness is manifest in subtle ways that often lead to misinterpretation. The peach grower knows that it is the weak tree that is attacked by the fruit bark beetle or pinhole borer, and the apple orchardist has seen how trees that are not up to normal are much more seriously injured by spray burn, a severe drought, or other untoward conditions. This is an observation that should be brought to the attention of the beginner and he will not be ready to neglect his fertilizer application or spray because the trees are not carrying a crop. Hence, it should be our aim to keep the trees young, by whatever sound practice is available for our use.

In this connection I may say that our Experiment Station has been doing some work with the ringing of filler apple trees of slow maturing varieties, but has strongly advised against its use with permanent trees because of the possibility of lowered vitality, as well as for some other reasons.

Tiling the Orchard

The horticulturist of a generation ago was usually emphatic in advising that orchard land be naturally well drained. As orchard plantings have increased less attention seems to be paid to this matter, partly because a man must use the land he has, and perhaps because he sees a fruit tree or two in the vicinity 'that has never missed a crop' and infers that the soil must be suitable. Now we are well acquainted with the appearance of a tree growing in excessively wet soil, showing stunted growth, yellowed or reddish bark, if indeed it does not give up entirely. But there are many orchards growing in heavy, undrained soil that have missing trees, are perhaps below normal in growth, not fruitful, and behave in other abnormal ways. An application of lime is not the specific in such a case, but a system of tile drains properly installed will often be of considerable benefit, perhaps make the orchard entirely satisfactory, and in some cases it may be helpful to plow the orchard for a while if it is in sod.

We find in Ohio an occasional dying of trees where the roots decay, which may be due to an uncongenial soil situation.

Spraying

While I do not care to go into a discussion of spraying one or two points might be mentioned in this connection. Erratic and uncertain results have frequently been the spraying experience of many growers. In the past many orchardists have not used sufficient spray to insure a good covering. I have seen men double the quantity of spray per tree and even quadruple it which represented a big increase in cost, but which turned the tide from poor or fair quality to high quality production. It is, of course, the thoroughness of application rather than actual quantity of spray that counts, but thoroughness cannot be done with 5 gallons of material to a mature tree. We average 15 gallons per tree per spray on our 30-year old trees, using more in the foliage than in the earlier sprays.

Another point which is interesting us in Ohio is the work of F. H. Ballou, associate horticulturist, who is conducting experiments at some of our sub-stations and reported by him in our Station publications. He finds that he can control both scab and blotch in the place where he is working with sprays of much weaker strength than were formerly used, provided the work is thoroughly and timely done. He has obtained from 90 to 99% fruit free from blemishes by using standard-strength sprays in the pre-pink and pink and then diluting bordeaux mixture down as low as ¾ lb. copper sulfate, 2¼ lime and 50 gallons water for the rest of the sprays. When lime sulphur was diluted to 1 to 80 for the summer sprays, excellent results were secured this year and both foliage and fruit were in perfect condition. This work is suggestive of what may be accomplished in prevention of spray burn and russeting by diluting the summer sprays.

Culture of the Orchard

The cultural system to be followed in the orchard takes on new phases as experiments increase our knowledge. Nothing is more common-place than the soil treatment, hence we should know all possible about it. But unfortunately authorities have in the past and do yet, disagree on some of the fundamental things that are involved. I think few would argue that tillage is not a good thing if it can be practiced. Oftentimes orchards that have been in sod make the most striking response when the land is plowed and cultivated. When part of an orchard is in sod and part in tillage the beneficial effects of the tilled part can often be detected as far away as the orchard can be seen. Particularly is it important to till the young trees until they become well established.

We in Ohio, also have the problem of orcharding on rough land that is not well adapted to tillage. In many of our eastern states there is considerable such land that will return a larger profit from fruit than from any other crop. This means that some method must be provided for maintaining vigor and productiveness of the trees, for growing trees in sod is as a rule deleterious. To provide for this need the Ohio Station has long worked on the grass-mulch system that was originally brought to our attention by Hitchings of New York and Vergon of Ohio. This system attempts to maintain a mulch of litter composed of grass, straw,

weeds, or other vegetation, beneath the outer branches of the trees and generally it calls for additional fertility as supplied in nitrate of soda or sulfate of ammonia. That the system is feasible and not fallacious is proven by the fact that now for thirty years it has been successfully in force. It has objections that we wish did not obtain, such as the fire hazzard, danger from mice and a harbor for certain insects. There are cases when it must be discontinued for a time or modifications of it worked out and this should be done when there is need of it.

On some soils it is necessary to supply additional plant food material when the land is cultivated and on others it is not, depending on the fertility, but usually it pays to add fertilizer to the sod orchard, particularly when the mulch material is sparse.

These matters are brought to your attention, not to argue for one system or another, but in hopes that it may be helpful to the grower who must farm hill land or for some other reason does not wish to cultivate. It is by solving each individual case that this higher yield per acre will be brought about.

Fertilizer Practice

So much has been said and written regarding the results of fertilizers in the orchard that little needs to be added. Some of the questions which are attracting attention with us just now are the different carriers of nitrogen, repeat applications, time of application and amount. While none has been carried far enough for a final conclusion, yet some suggestions can be gathered from these experiments.

We know from long-time experiments with field crops that sulfate of ammonia is not as efficient as nitrate of soda, unit for unit, and that unless a little lime is used with the former the soil shows a tendency to become acid. Neither of these objections can be raised to it as yet, from our orchard experience. Sometimes one gives a higher production and sometimes the other, showing the variable factor with which we work in the orchard. Perhaps further work will change this observation, but there is nothing as yet to indicate it. Neither do we, as yet, see any benefit from dividing the nitrogen into two applications, one in late April and the other the first of June.

We have also made some tests of applying the nitrogen in the late fall and the same amount to other trees in the spring. The

surprising thing is that little difference in the trees can be noted although there is nothing, as yet, to suggest any advantage from the fall applications, and something of a disadvantage might develop.

The usual rate of application is one-quarter of a pound of nitrate of soda for each year of the tree's age. This rule must be varied according to the fertility of the soil, the system of culture, and variety. If sulfate of ammonia is used it will require about a fourth less.

Pruning

Lastly, it must be said that high yields bear a definite relation to the general policy of pruning, particularly the quality of the product. We have learned through definite experiments that heavy pruning, particularly heavy heading back, is antagonistic to maximum yields. Yet it is possible to go to the extreme and do no pruning which may give the highest yields, but eventually poor size and quality, together with many weak and unproductive branches and spurs."

Mr. W. A. Munson, Division of Markets, Mass. Department of Agriculture, Boston, then gave a talk on:

Marketing Of New England Apples

W. A. Munson

"This problem is not one that can be covered in a short time nor can a full explanation be given to it. But it is a subject that can be summed up in a very few words in the statement that it is necessary first for the fruit growers to go to the market, find out what the market wants, and then give to the market what they find it wants in the way it wants it, when it wants it. Now, there is really nothing further to say.

However, one of the greatest difficulties in New Eng and among the fruit growers is marketing their crop. The trouble is that they do not pay particular attention to what the market wants. Some of the growers very seldom go there, and judging from the few acquaintances that I have in New England among the growers, there are some who never go to the market during the marketing season. And, yet, this is one of our great problems

in the handling of our apple industry. The question is after the apple is grown, how to get it into the hands of the ultimate consumer.

It reminds me oftentimes of the conversation I heard between two men discussing electricity in the presence of their stenographer. They were enumerating some of their problems and difficulties and they were saying how some of them were almost without solution. The stenographer exclaimed,— 'Why,—electricity is perfectly simple to understand. You just walk over to the wall there and touch the button.'

Now we cannot market our apples by the simple pushing of a button,—there is a good deal more to it, and the problem of distribution is as important as the problem of growing and it is hardly a matter of pushing a button and having the apple crop distribute itself. There are many intricate problems. I would like to impress upon your minds this afternoon one or two points, and that's all.

I want you to realize that there is keen competition in the marketing of your apple crop, and that if you are to meet this competition it will require a great deal of study. In order that you may realize the competition that is going on, I am going to outline to you just the position of the New England fruit grower and the apple industry today.

I am going to show you what percentage of the crop you produce here in New England and I am going to show you the relation of the total crop of the United States to the price you are receiving and the relation of the New England crop to this price and which has the most influence. Then, I want you to realize that you are located right at the market door and within three hundred miles of Boston. The market there is equal to a quarter or a third of the consuming public of the United States, and think what this means in the way of advantages in transportation.

Now this first chart that I have here simply shows the apple-producing sections of the United States. Those in dark or solid black are the particular points from which you may expect apples to be sent each year into the Boston market and New England market. The shaded sections do not affect these markets to any great extent, but they do of course furnish apples to other markets which might be available to us if they were not producing.

This section I am now pointing to is where the apple industry is located throughout the United States, and you can see here running from south-western Maine down through the southern part of New Hampshire and central part of Massachusetts and Connecticut where the great apple belt of New England is. You can see in the eastern part of New York and also on the lake region the apple belt of New York. And then the middle Atlantic section runs through the southern part of Pennsylvania, Maryland, West Virginia and Virginia. To make it a little more vivid I have put markers in the States from which we get the largest production of apples. The largest percentage comes from the northwest. A great volume comes from the middle Atlantic states,—and, also, a large volume from New York. New York and the New England States supply great quantities to the Boston market.

We have heard from time to time that the industry was developing to the saturation point and that there were more apples than could be taken care of and some growers have been a little fearful that we are over-producing. If you will follow this top line since 1899 you will see that the high point of production was reached in 1915. This line shows the total apple crop grown since 1899 up to 1925, and you will note that the general trend is not decidedly upward nor decidedly downward. This lower line is the New England production since 1899, which shows a very level production over that period of years. We have produced here a total crop, highest in 1915, of 230,000,000 bushels. The New England crop for 1915 was 8,555,000 bushels. When we come to 1925, the New England crop was only 2,000,000 bushels above that of 1915. In 1916 we had a larger crop than in 1925. So we can easily deduce from this that we are not producing any more apples in total volume than we were in 1916 or in 1899. If you study the trend of the planting of trees during the past twenty years, you would find that the northwest did start in planting a lot of trees during the first years, but dropped suddenly ten years ago and their plantings have decreased tremendously. The crops from the old trees in the country have decreased. The New England plantings have just about held their own.

There is a large volume of apples coming into the market—as large a volume as we had in the earlier years—and we can attrib-

ute that to the better care that the trees are getting under commercial orchard management. The orchards that are going out of existence are the small farm orchards, and orchards in the middle west where it was found that some other crop was more profitable; and the business has gone into the hands, to a large extent, of men who are handling the proposition in a commercial way or into the hands of orchard specialists.

This chart shows the relationship between the United States crop and the Baldwin apple price and the New England crop and the Baldwin apple price. I want to bring this point to your attention to show the influence of each on the price of Baldwin apples. I don't believe you can see lines from here, but if you were close enough, you would see that during this earlier period from 1899 to 1911 the New England crop had a greater influence on the Boston price than the total United States crop had. That was before the larger shipments began to come in from the northwest. Since 1910 we find the reverse of that,—that the total United States crop is having greater influence on the price of Baldwin apples in Boston than the total New England crop. So you see the situation is reversed. We are having our market influenced by wider area than before the years of 1910 and 1911. This is clear,—I do not need to discuss it.

If you have been in the markets you have seen the competition grow larger and larger as years go on. And, again, I want to emphasize our position in the apple market, and to show that the New England crop is not by any means too large considering the point that we are right here at the consumers' door. I have made this little line here giving the percentages of the total crop grown in the United States by sections and you can see that the New England crop is but 5.6% of the total United States crop, and that is a year's average, so we are not producing a great share of the total United States crop and yet we are right here at the door where they are marketed. The northwest produced 37.3% of the total United States crop, and you will get the point from those percentages that the northwest has got to find an outlet and that the people are living right here who are going to use those apples. You will also realize that competition is getting stronger as time goes on.

Of course, we know that apples are produced pretty uniformly over the same season throughout the United States, and we

know that the market has to be supplied during the apple seasons from the United States crop, but I don't think many of us have figured out at what times New England people do supply the markets here, so I have had this middle chart made up giving periods of year and the volume of supply that we New Englanders put into the market in these periods.

Here in July, the middle Atlantic states, the southern portion that I showed you over there of New Jersey and the Virginias, furnish 77% of the total supply for the Boston market and New England furnishes the black space plus the white space, or 11.5% in July, of the total demand.

Then in August, you can see how we increase our supply, for our crops are early, and the percentage rises to 53.6% of the total supply. You will notice here that the northwestern states and California furnish a percentage of 19.4% and the southern or middle atlantic section a percentage of 8.4%.

In September, the New England States furnish 70.4% of the Boston supply. I speak of the Boston supply because it is the only way in which I can show comparisons, for we have some very accurate figures on the total amount of apples that come into Boston, both from railroad carriers and trucks.

Then, you can see here in October that New England begins to decrease its supply to the Boston market. In this month we fall off from September's 70.4% to 56.3% of the total supply furnished the Boston market. Here, again, the northwest increases its supply,—or the amount that they are sending in.

In November, our total New England supply decreases about 2%, bringing the percentage down to 54.3%. The northwest increases again its shipments into the Boston market and a great share of the shipments from the northwest are redistributed throughout southern New England from the Boston market.

From December to July, or the winter period, our supplies are decreased to 29.3%. The northwest increases its supply to 48.9%. So you see a study of when the market gets its apples and where they come from will give the various producing areas and the amount of apples they send out.

In order to give an average for a certain period we have figured that from July 1921 to July 1924 New England furnished 44.1% of the total supply to the Boston market and the northwest furnished 32.5%. Of course, these percentages are all based on

the car lots of apples received in Boston. I might explain, too, that those that come in by truck or other methods of transportation are added in the car lot receipts.

If the foregoing has not impressed you as to our position in the supplying of apples to this northeastern section of the United States, we have figured out on another basis this column shown here which represents the percentage of the total apple crop of the season 1924-1925, the crop beginning in July 1924 and ending June of the current year. We find that New England furnished slightly over 52%, according to the wholesale value in this particular year, which year was a good one for apples in both New England and the rest of the United States.

The northwest furnished 33.5% of the total value.

New England furnished approximately $1,260,000. worth of apples to the Boston market. The northwest furnished $853,000 worth for the season 1924-1925.

Now, in 1923, the northwest furnished $1,478,000. worth, and New England furnished about $1,075,000. worth, so the northwest furnished considerably more then on the value basis.

I want to show one advantage, a great one, that we have in New England. These are some representative freight rates from various points to show the advantage we have in the matter of transportation according to railroad charges. From representative points in Central Massachusetts into Boston the freight rate is 11½c per cwt. From Maine, 27½c; New Jersey, 32c; New York, 33c. From the middle west, using Illinois as a representative point, 67½c per cwt. carload lots, and from California $1.50 per cwt. These rates do not contain other charges, it is simply the freight rate. So we have an advantage here in Maine of about $1.22, or something like that, which is a pretty fair profit on 100 pounds of apples, if we take that as a basis. This is certainly quite an advantage over the northwest.

I think one of the big draw-backs here in New England is that we have been going at the marketing of our apples blindly. Very few people have paid much attention to these facts that influence the apple interests of these New England States. The problem primarily is in finding out what the market wants and then giving to the market what you have discovered it will take. After you have found out what the market wants, I doubt very much if you can go home and give it to the market without

eradicating a great many of your production practices and putting more attention into the production in order to get the quality of fruit that is taking our markets away from us.

How does this supply come to the market that is showing such large percentages from these various sections? I might say that it comes in a standardized form. It comes in a reliable package containing a reliable quality. It is uniform, and it is available in quantities. These are some of the facts which anyone would be impressed with if they saw the carloads of apples that are unloaded each day in Boston.

Anyone would also be impressed to the contrary if they could see the unloading of cars of apples coming from some of our eastern points, not only New England points but New York points as well. You may have a question come to your minds as to how long this competition is going to keep up from the northwest, and how much it is going to increase. I don't think there is any possibility of its ever ceasing, and, of course, as to its decreasing I cannot see wherein it is going to decrease for some length of time, or until New England growers make it unprofitable for these people who have to pay long-distance freight rates by putting in an apple that will compete with theirs on the basis of quality.

Production is increasing in the northwest, and plantings have decreased. Most of their crops are coming from trees which increase their production as they grow older.

How are you really going to meet this competition? In the first place, I will say by producing a high-quality crop that will put two-thirds or three-quarters of it in the A grade barrel and by reducing your second grade production, which is now pretty nearly two-thirds of the total crop grown in these New England States.

So if we simply set ourselves to doing away with some of our old-fashioned methods that I am well acquainted with, because I happen to have been on a farm in my younger days in New England, where we had an apple orchard, we will gain headway. As I remember it, we never sprayed; we cut off all the lower branches and then picked what apples we could reach. We then shook the rest off, picked them up, and put them on the floor of the barn, and then went out and got another load. When they were all in the barn we filled up about ten or twelve

barrels and went to town, and then when those were disposed of, we went back to the farm and filled about the same number again and went to town once more. We never had more than twenty-five barrels in all. We got about $1.00 or $1.25 a barrel and we thought we were doing well. There was many a time when we could not get rid of them. Competition was beginning to show itself in those days. That farm was sold and has now gone out of existence, simply dropping out on account of competition. This is happening all the time, as you will notice travelling through the country, and many orchards are now going out of existence and more will, as competition grows keener and keener.

I spoke to one of my market buyers yesterday as he was conferring with me relative to questions on his mind. I told him I was coming down here today and he asked about it so I explained to him what I was going to speak on. 'Well,' he says, 'I wish you would tell me why it is that Maine orchardists ship down time and time again fifty barrels or so of apples supposedly of one variety, but in reality containing several different ones, and expect a commission man to dispose of them to advantage.' He said that he had seen a lot of ten barrels of McIntosh that when opened up disclosed the fact that some of the apples had been raked up from the ground, some had fallen off previous to picking; and that man was going to get about $1.00 a barrel for them. I don't understand why a man ships a grade of apple that will bring in only $1.00. Probably the man expected to get more. But as it is, he will not make anything on the transaction because the price would not cover more than the handling charges.

I have said several times that it is necessary to go to the market, find out what it wants, and then give it in the form required. Many successful corporations have won their markets simply because the heads of the firm, not some of the employees, but the heads of the firm, have gone out on the road and found out what the consumers have wanted and then gone back and put up their articles in that form. If you wanted some particular commodity in a certain package they have gone back and given it to you. If you have wanted some particuar colors, colors which appeal to you they have made their product and put that color on it.

The apple grower needs to do this very thing. He has not done this in the past. He has stayed on the farm, put up apples

in the old-fashioned way, said to the commission man,—'Here is what I have to sell,—I am shipping it to you, and I will take what you give me for it.' The consumer has decided that he wants something different, and the man in the northwest has found out what he wants and is giving it to him, in that form. He has come east and is giving it to us.

In 1923, we took an interest in finding out what the consumers really did want in the apple line, and we went to seventy-five retailers and asked them as to what the consumers wanted, how they wanted it, and what particular things appealed to them in regard to the apples. We were surprised to find that the consumer wanted a graded product and that they knew the apples by brand, liked the McIntosh and Baldwin varieties and were asking for them by name.

Now here are two distinct advantaages which we have here in New England, we do know what the public wants. All they want is to get the apples in the manner in which they are used to getting them from our competitors and which is the way they want them. Another advantage, which came to me just recently, is that here in New England we have practically the highest-paid workers of anywhere in the United States. We have among us, as a group, more money to spend, no doubt, than any other large section of the United States.

And if we think of all that means, we will realize that the more money we have the higher will be our desires for good things.

If you are getting a salary that warrants your buying a Ford car you will buy it. But if your salary increases, or your returns from your business increase to any extent, your desires increase, and you will want a Dodge car. And sooner or later you will want a Packard, as your returns increase. And, you will want better rugs on your floors, and hardwood floors, and so on throughout the house. And when it comes to the table, you will want better things on the table to eat. So it is that as our income increases so do our desires for better things increase, and here the growers are trying to give this increasing purchasing capacity the same old product that they have been in the habit of giving, —barrels of apples, all kinds in the barrel. We have continued to try to sell them a lower grade apple when they have been and are being educated by the competing sections of the United States as to what nice things are possible in the apple industry.

They are being told, have been told, in fact, for twenty years, that they can get some very high quality apples from the fruit stand. They have been trained to believe that the apples carried there are nice apples. Their taste for nice apples has been developed until they have gotten to the point where they believe that they cannot get the nice apples from the grocery store. They are not satisfied with poorly colored and scab-covered apples.

Another feature that has entered into the influencing of our apple market to a large extent is the chain store. The chain store organizations are taking tremendous quantities of apples at the present time. Although some of them do start to buy a cheap product to give customers at a low price, others of them buy a better grade product, a better quality product, and have held that out to the consumers so that at the present time that has gained customers for chain stores that do it, and other stores have had to come to the proposition of buying a higher quality apple. The customers take more of the higher quality than they do of the lower priced apples.

Another factor in the market is the restaurant group. If you have studied this angle, you will find that they are an outlet for a sound apple, that is not tremendously highly colored. They want a uniform sound apple, without many blemishes, in fact, hardly any because if they are put into a machine for paring and coring and there are any blemishes, they have to go to women who sit alongside the benches to have the spots taken out. So the question of labor enters in, and, of course, in the chain restaurant business, labor is a large feature and the more labor they can cut out, the cheaper they can produce the food that we buy when we get our lunches there. So, they take a quality of apple that is sound, free from insects and disease. It does not, however, have to be highly colored.

They also have to have an apple that will store well because they have to have them in uniform quantities over the season. They purchase in the fall of the year and put them in storage and draw from them as needed.

Now in regard to the baked apple. Have any of you ever tried to find out what an apple must have to bake well? I talked a short time ago with the Vice-President of the largest chain restaurant here in New England,—I guess the largest one

in the United States,—at least it has the largest commissary of any chain restaurant in the United States. In fact, there is only one other in the world larger. In discussing the different varieties I said to him—'Why, you can use this or that variety,' and he answered that the minute those were baked they flattened down. So as to have an apple which will stand up, he uses the Rome Beauty. He uses 5,000 boxes of this variety a year. Of course, that is not a tremendous lot when we think of the whole apple industry. But those 5,000 boxes have to come from the northwest at the present time.

Thus, if we are to meet this problem of marketing our apples, we have first to produce something that we can grow here of a quality that we can use to compete with the growers from other districts. We must standardize it in order that we can give a volume of branded goods of uniform quality to the buyer as he telegraphs from his place of business that he wants them.

I talked with a large shipper of apples a few days ago. He is at the present time handling a large amount of northwest Baldwins. I said to him, 'Why is it that you are not operating in New England as much as you used to?' He said, 'I can sit here in my office, telegraph to a grower in the west or northwest, tell him I want carloads of apples of a certain grade, etc., and when that carload comes in the apples are just as ordered.' He doesn't have to move from his desk. He said further, 'If I wanted to buy a like quality here in New England I would have to start early in the season, visit a hundred or more different growers, each one with different ideas of various grades, and when the apples came in there would be no two lots alike. I would have the utmost difficulty in disposing of them, and that because at the present time my customers call me up and say they want choice fancies and I can give them to them today, tomorrow, and right along through the season from these lots that I have obtained from other districts. This I cannot do with New England purchased apples.'

New England quality is important in making any headway on these problems. I see it more in evidence this fall than ever before. I see it as I pass through cities where the stores and fruit stands are buying large quantities of McIntosh apples, and the owners or managers of those stores tell me that they are handling larger quantities of this variety than ever before and

that they have not started to move anywhere near so many northwest apples as in previous seasons. The McIntosh has taken its place because of its quality and because there has been quantity to give those men apples day after day.

It only demonstrates that if we have the quality and quantity the market is here. The prices you will see have advanced from earlier prices of $1.50 and $1.75 a box, to $2.50 and $2.75 a box, and some of them, large size apples, are running from $3.00 to $3.50 a box, a very favorable comparison of prices.

If we can do the same with Baldwin apples it will certainly help the situation. Then, too, as we go through the wholesale markets, our wholesalers and commission men tell us that they have seen in the last twelve years a tremendous improvement in the quality of goods coming to the markets and this is all attributed to the getting together of such meetings as this and discussing problems and realizing what must be done to take the markets and keep them for ourselves. It is also being accounted for by the prodigious efforts of our men in the extension service in the field and to the fact that more and more growers are coming to the Boston market and to the big markets in New England and comparing shipments coming from New England with those from the competing sections. Those men have realized the necessity of coming to market and looking at shipments themselves. At the Produce Exchange last winter we had two hundred or more growers in one day. The market and commission men of Boston talked in the meetings and those growers were told just what was wanted and in what way the shipments of those growers were falling down in meeting the requirements of the market.

As the time is going, I think this is a pretty good place to stop, and I thank you very much for your kind attention."

Professor Gilbert Peck, of Cornell University, Ithaca, N. Y., gave the next address on:

Pruning

Prof. Gilbert Peck

"I note that fifty minutes has been allowed for speaking. It has been suggested that we allow fifteen or twenty minutes for discussion, so I will talk to you on the subject of Pruning for about half an hour.

What I would like to say first is that I spent a few moments down stairs in looking at the fruit show, and certainly you have some mighty fine apples.

I think that we can say that up to possibly eight or ten years ago we had very little definite information on the proper way we should prune trees. Today I think that you do have considerable numbers of experimental apples especially on young trees, to prove that a good deal of pruning, up to eight or ten years ago, was to a large extent wrong.

I would like, this afternoon, to emphasize principally the things that seem to me to need to be brought to attention. I find in extension work that men through the New England States are not giving enough attention to pruning, and in beginning, we will take the tree at planting time. There is some question I think, as to whether or not at planting time, a tree should be pruned at all. Some men who have experimented with trees at planting time claim that practically no heading back of the limbs will give better growth than where the limbs are headed back. I think probably that that is quite true in some seasons. The evidence on the subject, however, is somewhat confusing. Those same men have found also that in planting a two-year old tree, heading back a little at planting time, will give a little better growth. It possibly is due to the fact that the tree is planted in a dry season, and, if so, that might be a desirable thing to do, but the trouble is that we can never tell just what is going to be the seasonal condition.

In a dry season, if these limbs are headed back somewhat, it will tend to hold the tree back until it is established and then buds farther back on the limbs, which would naturally tend to start somewhat later, when they do start growth is continued right along and there is no chance for dwarfing. It is likely to make for better growth in a dry year. There is not, however, enough definite evidence on the subject to say which is best or right. It is safe to say, however, that it is desirable to thin out some of the limbs on a two-year old tree as they come out. Whether to eliminate them entirely or to head them back is for you to decide. There is one thing plain, however, and that is that there is not nearly enough attention being given to the spacing of the main limbs at planting time. I think if the main limbs on a young tree at planting time are three, or four to five inches apart the general

opinion is that the spacing appears to be fairly good. When you consider that when a tree is thirteen or fourteen years old these limbs are three to five inches in diameter you will realize that at that time the limbs will seem to come out at the same place on the tree, if they are not thinned out or headed back. Thus, if two limbs are 4″ apart at the time the tree is planted, after twenty-five years' growth, the limbs will then be 4″ apart.

We find that in practically all orchards of New York State, some mistake was made at planting. I know of practically no orchard in the State having trees ten, fifteen and more years old where individual attention has been given to the spacing of the main limbs at planting time. Much trouble could have been avoided on young trees from ten to twenty years of age, if more attention had been given to the spacing at time trees were set and the next year or two. Therefore, I think that eight or ten, or, possibly, twelve inches apart is a much more desirable distance than anything less than eight. I appreciate that you cannot buy a tree with four or five main limbs which would be 12″ apart then on the trunk up and down. Supposing this is the trunk of a tree. You will never obtain good crotch conditions by doing away with limbs on one side of the tree and imagining that the production will be offset on the other side of the trunk. Where the trouble is is when limbs coming out here and four or five inches above are not spaced around the trunk in such a way that when these limbs are four and five inches through they will not interfere, and here is where you are likely to get weak crotch conditions and loss later on in the length of life of the tree.

I think one has got to begin pretty early and prune in such a way that you will get two or three, possibly, of the main limbs developing in the second or third year after the tree has been planted. I think that on the pruning of young trees, that that is when one should prune heavily and within the next two years, if necessary. In the following years very lightly. We have found in Ithaca,—trees that are now fourteen years old in orchards (about ten to twelve of them) that have been devoted to pruning experiments, that the trees pruned lightly, or just what is called corrective pruning (taking only out of the trees limbs which were interfering with the development of the main part of the trees) would range from 13-30% larger than the trees which were pruned heavily. This is just opposite to what a good many men feel.

Many feel that by rather severe pruning you tend to stimulate a heavy growth which is true to a certain extent. However, the total growth obtained as a result of heavy pruning is not nearly so great as with a similar tree having practically no pruning done to it. On trees at Ithaca, up to the time they are twelve years old, those that were lightly pruned (Baldwins, a variety you all know) taking an average of the trees in the heavily pruned section also, it was found that for the year the average for the trees in the lightly pruned section was 1,160 pounds. In the heavily pruned section, the average was less than 600 pounds. We get practically twice as much fruit on the trees pruned lightly than we do on those heavily pruned.

Also, the trees are larger too, those that are lightly pruned. I think there is no question that on the pruning of young trees you can grow larger trees and produce much more fruit by light pruning than by heavy pruning, and that at the end of ten to fourteen years, depending upon variety, etc. just as good and strong a tree.

We found on the trees at Ithaca that we were getting anywhere from twenty to possibly forty or even fifty per cent of the fruit from parts of the tree where the average grower was doing 100% of his pruning and thus cutting out all the fruit spurs on the inside of the tree and the small limbs, limbs which tend to grow back, and the heading back of limbs which just don't seem to suit the grower as to lengths. I think a good many growers are inclined to do too much pruning just with the idea of making a good-looking tree and with the idea of making one tree look like the next one in the row.

We were getting a good deal of fruit on the lower limbs of the tree, limbs which orchard growers are cutting off with the idea of furthering cultivation. Some growers were growing trees in sod and they cut off the lower limbs. On our trees at Ithaca I spoke of the fact that too many limbs seem to be coming out at the same place on the tree. Now in the last two years, trees which are now fourteen years old, we have found on practically all these trees that we have had to go in and do a considerable amount of severe pruning in order to get away from bad crotch conditions in a good many of the trees, particularly the varieties like Northern Spy, Northwest Greenings, etc. which tend to upward growth.

I think we could get away from the chance of winter injury if we went at this question of pruning a little differently. I think a good deal of winter injury in many of the young orchards could be avoided by a little more careful pruning. The tendency is in some instances, surely, to neglect the pruning for two or three or, possibly, four years, and then go in and prune too severely. Whenever that is done, we are pretty likely to promote a late growth on those trees. If the trees are in fairly good vigor it is almost sure to promote late growth. If it happens to be done in a year when we have a comparatively dry spring followed by good growing conditions later in the summer and then get a severe winter, we are sure to get severe crotch and winter injury of young trees. In New York State, in one of the Northern Spy orchards, and one which is considered fairly hardy, previous to that severe winter of 1917-1918, a great deal of top work was done in this block of Spies. Practically every tree that was top worked was very severely injured as to bad crotch condition just due to the amount of severe pruning that was done in order to accomplish the top work. It is very likely to follow, particularly on any variety which belongs to the least hardy, such as Baldwin, Rome Beauty, etc.—20% damage on some of the others.

That is one thing in pruning that we should watch out for, particularly on the younger trees as they are beginning to bear, because at that time a severe pruning or a stimulation in any way by the use of fertilizer, stable manure, etc. in the cultivation is likely to produce a late growth and possibly winter injury that in nearly all cases could have been avoided.

Now in the pruning of young trees, there is one thing we should bear in mind. Probably about 90% of the matter that goes to make up the limbs, the trunk, and the roots of a tree, except for the water that is in it—a large per cent is water—is taken out of the air through the leaves rather than through the soil. A material reduction of the leafy part of the tree is going to dwarf the tree. There is no chance for an argument about that. I think most of the harm done in pruning young trees is in reducing that leaf surface by taking away fruit spurs and by pruning on the inside of the tree, and cutting off the lower limbs right where one will get the early production of fruit providing these parts are left on. This is a point which we should keep in mind.

As to the production of the trees at Ithaca. Our twelve-year

old Baldwin trees produce about 16½ bushels per tree. Our Nod Heads about 8 bushels per tree. The size will average a little larger on the heavily pruned trees, but we do get more bushels of 3″ apples on the lightly pruned Baldwins, and on the Nod Heads more bushels of 2″ and 3″ apples on the lightly pruned trees than on the heavily pruned trees, and so on down the line.

The percentage, however, of the total production ranges lower on the heavily pruned trees than on the lightly pruned ones which could be expected, of course, because the pruning amounts to a thinning of the production.

With reference to the color, I just don't think there is any real difference in the color of the fruit grown on the trees whether heavily or lightly pruned, that is, when these trees were about 12 years old. Since then, in the last year and this one, too, I think the fruit on the trees which have been lightly pruned probably is not quite so good in color as on the trees which were heavily pruned. This is true, too, in some of the orchards through out New York State. We have started in New York State in the neighborhood of forty-five long term pruning demonstrations. We have selected trees in representative orchards throughout the State, possibly half a dozen trees of the same variety as nearly uniform as possible, and the growers which come to these demonstrations do the pruning on eight or ten trees. These will be continued for five or six years as the growers wish.

We have gotten practically the same results so far as we have gone, in the orchard at Ithaca, and I am emphasizing to the growers the advisability of letting up on the pruning of young trees and it has accomplished its purpose.

If you can harvest profitable crops on a tree eight or ten years old and by spending less money in pruning you can very well consider it. I believe that there is no question but that it would be successful on the McIntosh variety, one of the important Maine apples, that is, you can increase the production by light pruning rather than heavy.

I think, too, that there is another point that we can very well give attention to, and that is, where the trees are planted in sod,—I don't know that very many of you are producing in sod, but I know that in New York State in many of our older orchards the bearing area of the trees is high due to the fact, of course, that the

lower limbs were cut off during the early life of the tree and due, also, to the lack of proper pruning during the years following, to the extent that the limbs became weak and winter killed and then cut off.

I think that by proper pruning we can maintain good production on the lower limbs of the tree and keep up the bearing area possibly ten, twelve, or fifteen feet lower than we often find on some trees. And surely, in the life of the trees, that is going to save money.

On trees at Ithaca,—I am referring to that orchard because we do have a lot of experimental evidence there, pretty carefully taken and pretty carefully observed all the way through and I feel that we can refer to it fairly definitely,— on our trees there that are lightly pruned we have been particular to leave lower limbs on and cultivated as closely as we could to the trees without sacrificing the lower limbs and the lower bearing area. These trees are in just as good vigor and are just as hardy as the trees where we cut the limbs off so that we could get closer. Certainly, in many instances, if you cultivate too close to the tree, you are going to have to cut off some of the very best bearing area of the tree to be able to do it. It is worth something, too, to have bearing area where you can pick ten to fifteen per cent of the crop from the ground on a maturing tree. I know of one orchard in Wayne county in New York State where the grower harvests from fifteen to as high as 25% of the fruit from those trees standing on the ground. And there is not a tree in his orchard on which he cannot harvest every apple with an 18′ ladder. I know, also, of many orchards where the first apple cannot be harvested with an 18′ ladder.

I think that pruning should consist of a thinning out of the small limbs in the bearing part of the tree, in the tops of the tree, and what come out on the inside too near together. The limbs should be thinned out enough to enable the grower to do a good job in spraying and dusting and in order to give a better circulation through the tree and to help in the control of fungus troubles to somewhat better advantage.

I know that up to a few years ago, and in a good many orchards still, the pruning on mature trees consisted of going in and cutting out the winter fuel from the apple orchard. That sort of pruning does not very materially benefit that part of the tree you

leave. If you go into an apple orchard and cut a limb out of a tree you tend to stimulate the part of the tree near where the cut is made.

It is worth a good deal to the growers if they can pick a good percentage of their fruit from the lower limbs and harvest the rest with a comparatively short ladder. There is practically no mature orchard that I know of in New York State where if one wants to look around they cannot find sun scald and winter injury due in many instances to bad pruning. Of course, we do get a severe winter now and then where a certain amount of injury is bound to result in certain varieties which are less hardy.

Sun scald, as I understand it, ordinarily will happen during the latter part of February or March on a day when on one side of the tree it is warm and on the other freezing. You get on one side a warming of the tree and then when the sun goes down a quick drop in the temperature and consequent freezing of parts that have warmed up. If instead of cutting out, big limbs enough are left to produce a little shade, it is likely to result in less sun scald.

I think I will leave the rest of the time for discussion. If you have any questions to ask, I will be glad to answer them."

Following the talk by Prof. Gilbert Peck, Mr. Donald Folsom, Plant Pathologist, University of Maine, Orono, gave a talk on "Some Recent Experiments in Spraying and Dusting for Scab."

Report for Wilson Conant for State Pomological Society on Apple Disease Work. Nov. 6, 1925.

By Donald Folsom

"The data from several years' experiments,those carried on since the last bulletin was published on apple spraying, has been prepared for publication and a bulletin is now in press. This involves altogether the one-season spraying of over 1,200 trees and the individual examination of over 300,000 apples. The work has been reported on to this Society previously. In preparing this data a summary was also made of the results of similar work in other places. To make this summary over 400

of the more scientific publications were examined out of over 1,000 publications now available on apple scab and apple spraying.

Since making the annual report a year ago a number of conferences and considerable correspondence have been carried on with the leading workers on apple spraying in other states. The present season's results have been put into shape for another bulletin. As a result of contact with other men and of the season's work, it is thought that several new lines of work with apple scab should be attempted. A summary of the more practical results from this season's experiments follows.

Considerable attention has been given to the question of spray service, meaning by this the possibility of giving technical advice which will enable growers to eliminate an early spray or two when there is no need for it, or to start unusually early when there is danger. The dead, scabby leaves were examined for mature ascospores or winter spores. Weather records were kept. Artificial infections with scab were made and leaves were collected and examined carefully for scab spots. Mature winter spores were hard to find early and consequently the first infection was light. However, spread from the first spots can occur to eight inches to either side, six inches upward and eighteen inches downward, so that very few spots are enough to permit a general distribution of scab on the leaves early even if only one leaf in one hundred is infected by an ascospore. Scab spots appeared early on the leaves of the experimental plots, but the spread of the disease was checked by spraying. The spread of the scab on the leaves of trees in the dusted plots was not significantly different from the spread in the control plots. Some delay in the spread by summer spores is important because as the leaves become older they become more resistant to scab. Other things being equal, the fewer leaf infections there are the fewer fruit infections may be expected. The small proportion of leaves found to contain mature winter spores together with the low percentage of scab this season, makes it appear that a difference of one or two sprays this season was not important in the orchard experimented upon. Great seasonal and local variations in the development of the winter spores also make it appear doubtful whether technical advice will be very useful in this connection.

Attention was also given to the possibility of substitutes for liquid lime-sulphur giving consideration to the effect of russeting on the grade or quality of the fruit. Copper dusting, following Sanders' schedule and using his materials, permitted much scab to develop and caused much leaf spot burning and fruit russeting. With more spraying there was less scab and more russeting. With the same number of applications dust did not control scab as well and did not cause as much russeting. An attempt to explain individual tree variation as to scab and russeting disclosed no correlation between these characteristics and others, such as direction faced by the producing branches, foliage density, fruit color or relative location in the orchard. The total yield of fruit was not appreciably affected by any fungicidal treatment. The proportion of the better grades depended mostly upon the amount of russeting. The amount of cull scab was small, the scab noted in commercial grading was not as extensive as the amount of scab tallied in the usual experimental sorting, and further it was found that the latter sorting did not disclose all of the small scab spots that were present. The smaller spots are being studied in connection with certain storage experiments. The cost per tree of four sprayings with liquid lime-sulphur was 41 cents; of four sprayings with dry lime-sulphur, 45c; of five sprayings with dry lime-sulphur, 54c; of four sulphur dustings, 40c; of six sulphur dustings, 53c; and of six copper dustings, 53c. Thus five sprayings with dry lime-sulphur and six sulphur dustings which gave similar scab control cost about the same. These figures include machines, depreciation, gas and oil.

The accumulative effect of a given schedule was considered. As in previous seasons, the amount of scab in any plot did not depend upon the amount of scab during the preceding season but depended upon the current season's fungicidal schedule. Apparently the scab from the preceding year in the Ben Davis experimental orchard is rather uniformly distributed in the form of the winter spores throughout the orchard at the first of the season. It is then a question as to how far this generally distributed early infection will spread in the different plots and the spread is determined by the fungicidal treatment given. According to evidence from other places the more scab throughout the orchard on the old leaves, the more will be the general first infection. Also in regard to yield or apparent vigor, there was

no apparent effect from the preceding season's treatment, nor was there any progressive effect from the same treatment being given in 1924 and 1925.

One cause of severe scab infection of McIntosh as reported a year ago was again found to exist. A number of instances were seen of twig pustules on McIntosh enabling the disease to overwinter with a consequent infection by summer spores early in the season without previous infection by winter spores. Some work is being done to determine whether an accessory spraying such as one with copper sulphate will help the regular spraying schedule to check twig infection in the late summer and so reduce the sources of danger of spring infection."

Annual Report to Wilson Conant for the Maine Horticultural Society

"Nursery stock investigations have been continued but due to unforseen work of cut-worms and to unfavorable weather conditions the nursery work has not progressed very far during the past year. The work with bud selection has shown that buds from productive trees are little or no better than buds from unproductive, in propagation work. Those resulting from buds of productive and unproductive trees have been grown in nursery rows two years and last spring were transplanted in an orchard especially prepared for this work. These will be carried to a fruiting age to see if there are any differences in productivity when the trees become older. In general, however, the size in the nursery or at least after several years growth is a pretty fair index of its ultimate productivity so when we find little or no differences in the two-or three-year old trees it is a fairly safe prediction that we will find little or no difference in the ones matured.

One phase of nursery work did prove very successful during the past season. It was found that McIntosh and Tolman Sweet seedlings are superior to other varieties and to natural fruit, or even French Crab seedlings, for nursery work. Tolman Sweet seeds planted in the spring of 1925 produced seedlings large enough to be budded the latter part of August of the same year. Usually two years are required to get a seedling large enough for budding. A large number of the Tolman seedlings as well as seedlings of

other varieties have been budded with McIntosh, Baldwin, Wealthy and Spy for the new orchard which is to go on the land recently acquired for this purpose.

Some work has been done with training of the young trees so that the branching system will be properly spaced and form a good angle with the trunk. It has been found that if the uppermost twigs of the two-year old tree are pinched back early in the season the lower branches will be forced out. These lower branches being weaker than the upper ones will make a wider angle with the trunk, so if pinching back is delayed until these lower branches have started to grow then they can be forced out in the latter part of June and will make branches which have good angle with the trunk and which can be well spaced instead of all coming out in a group at the top of the tree which usually happens if it is neglected in its second year.

Any method which tends to spread the tree out seems to make it more fruitful. One method has been tried by budding one-year old whips where the permanent branches are desired and placing these buds upside down. Trees grafted in such a manner have made good growth and in addition to having a spreading branching system may have no crotches and obviously cannot be injured by splitting since there are no crotches to split. This work is, however, still in the experimental stage and is not recommended on a commercial scale.

Another method for spreading out the branching system is to tie down the branches. This method was tried with 12-year old Larue trees with great success. The branches were tied down in a horizontal position with binding twine and stakes in 1924. The fruit buds were of course formed in June or July 1924. In 1925 it was found that every tree that was tied down bore heavily while those that were not tied down had practically no fruit. This method is worthy of increased trials at least on a small scale. Work has been started along the same line with young Golden Delicious trees to determine what causes the increased productiveness. By using young trees the strain on the branches can be avoided so that the effect of the position of the branch alone can be studied in relation to productivity.

Apple breeding work has been continued. At the present time we have practically 1,000 seedlings of the cross McIntosh and Spy, McIntosh and Delicious and McIntosh and Golden Delicious.

Additional crosses were made this year between Golden Delicious and McIntosh. This cross is especially interesting since the Golden Delicious is very resistant to scab. It is reported that Golden Delicious apples are entirely immune. It is true, however, that the leaves are infected to some extent. If the scab resistance and quality of the Golden Delicious can be combined with the color and hardiness of the McIntosh, an ideal variety for Maine will be produced. In apple breeding work, however, it is more or less of a gamble what one may get from the result of crossing different varieties. Since apples do not breed true from seed the result of any particular cross cannot be predicted. We do hope, however, to get a number of good varieties, as they have in New York State

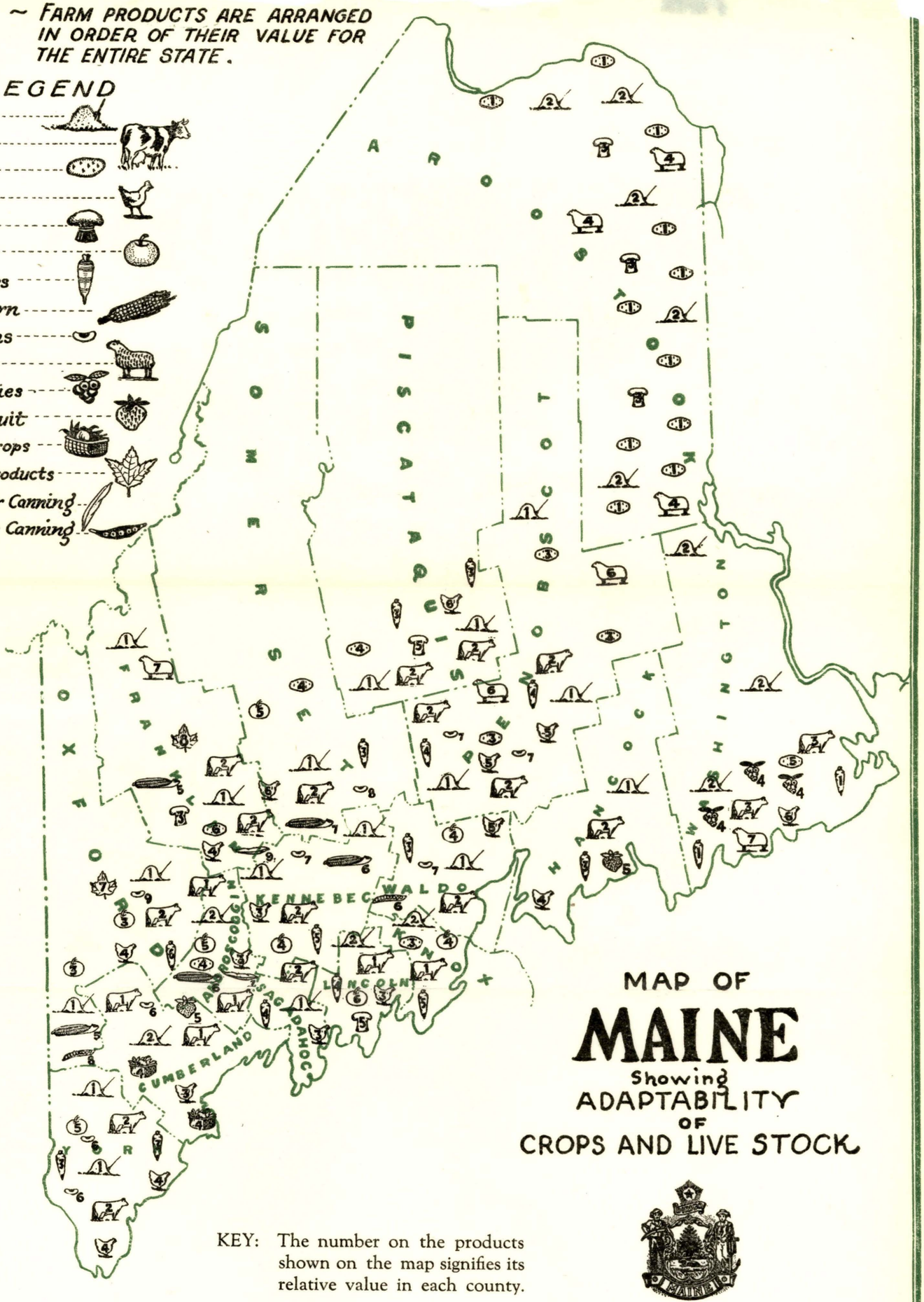
Some of the crosses and selections made by Mr. Yeaton and earlier plant breeders at Highmoor have fruited. For the most part the varieties which have fruited had one parent at least from an early variety so most of the fruit from the crosses is of little commercial value and none so far has proved to be superior than varieties already existing.

Work with the fertilization of Ben Davis apple trees has been continued. The past season's work indicates that for trees the size of those at Highmoor, that is, the trees about thirty-five years old and in only fair condition, that six pounds of nitrate is sufficient. In fact during the past year the trees which received six pounds of nitrate were more productive than those which had received twelve. In both cases, however, the yield was more than double as compared with the trees which received no fertilizer at all."

NOTE ~ FARM PRODUCTS ARE ARRANGED IN ORDER OF THEIR VALUE FOR THE ENTIRE STATE.

LEGEND

1 Hay
2 Dairying
3 Potatoes
4 Poultry
5 Cereals
6 Apples
7 Vegetables
8 Sweet Corn
9 Dry Beans
10 Sheep
11 Blueberries
12 Small Fruit
13 Truck Crops
14 Maple Products
15 Beans for Canning
16 Peas for Canning



MAP OF MAINE

Showing ADAPTABILITY OF CROPS AND LIVE STOCK

KEY: The number on the products shown on the map signifies its relative value in each county.