

MAINE STATE LEGISLATURE

The following document is provided by the
LAW AND LEGISLATIVE DIGITAL LIBRARY
at the Maine State Law and Legislative Reference Library
<http://legislature.maine.gov/lawlib>



Reproduced from scanned originals with text recognition applied
(searchable text may contain some errors and/or omissions)

PUBLIC DOCUMENTS

OF THE

STATE OF MAINE

BEING THE

REPORTS

OF THE VARIOUS

**PUBLIC OFFICERS
DEPARTMENTS AND
INSTITUTIONS**

FOR THE TWO YEARS

JULY 1, 1926 - JUNE 30, 1928

INDEX

*Adjutant General	
Agriculture, Commissioner of.....	1
Assessors, Board of State.....	2
Attorney General	3
Auditor	4
Bank Commissioner	5
Charities and Corrections, State Board of, see Public Welfare	
Education, State Commissioner of.....	6
Executive Register	7
Fisheries and Game, Inland, Commissioner of...	8
Fisheries, Sea and Shore.....	9
Forest Commissioner	10
Governor's Message, Ralph O. Brewster.....	11
*Health	
Highway Commission	12
*Hospital, Augusta State	
Hospital, Bangor State	13
*Insurance	
*Juvenile Institutions	
Labor and Industry	14
Library	15
*Prison	
Public Utilities Commission	16
Public Welfare	17
*Reformatory for Men	
*Reformatory for Women	
*Sanatoriums	
*School for the Deaf	
*School for the Feeble Minded	
Schools, see Education	
Treasurer	18
*Vital Statistics	

* Report not printed

34101

STATE LIBRARY

AGRICULTURE OF MAINE

TWENTY-THIRD REPORT

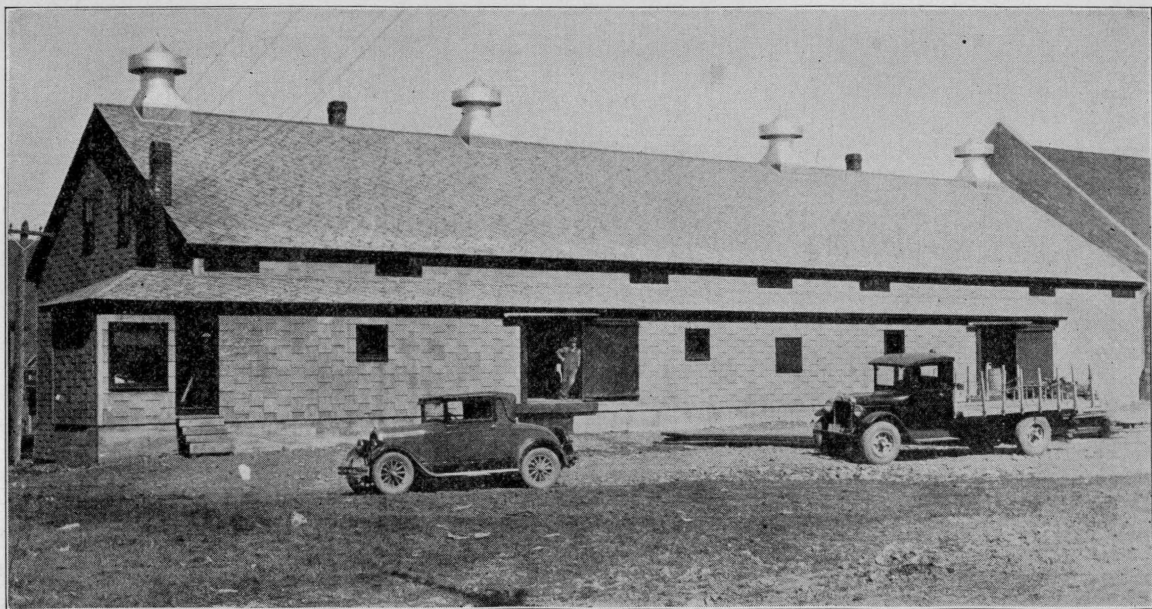
OF THE

Commissioner of Agriculture

OF THE

STATE OF MAINE

July 1, 1926 to July 1, 1928



Modern Potato Storage House, Owned by Walter Hansen, Mars Hill. Capacity 21,000 Barrels

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, 1926 to July 1, 1928.

The Report covers briefly the activities of the various divisions of the Department.

Respectfully submitted,

F. P. WASHBURN,

Commissioner.

Augusta, Maine, June 30, 1928.

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, Pittston
Sheep Specialist, C. H. Crawford, Dexter
Horticulturist, George A. Yeaton, Chelsea
Deputy Sealer of Weights and Measures,
Clarence O. Brown, East Eddington
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
Margaret E. Campbell, Litchfield
Doris E. Cram, Litchfield
Gertrude H. Grimes, Chelsea
Rhea R. Woodman, Calais

REPORT OF THE COMMISSIONER OF AGRICULTURE

Complying with the provisions of our Agricultural Code, the Maine Department of Agriculture presents herewith a report of its activities covering the period from July 1, 1926 to July 1, 1928. Our various Division Chiefs and Bureau Heads have been requested to submit statements regarding their several lines of work, certain statistics relating to Agricultural Fairs are presented and the report of the Pomological Society is included as directed by Statute. It remains only for the Commissioner of Agriculture to outline briefly the conditions in Maine as he sees them and to make recommendations and suggestions which, it is hoped, may be helpful to our farmers in the years to come.

This is the third report rendered since the enactment of Legislation in our State directing that Departmental reports be made biennially, each to cover a period of two fiscal years, and in the light of experience so gained we are now convinced that while conformity with the fiscal period July 1 to July 1, may be recommended in making reports of a purely financial nature, yet the date, July 1, is most unfortunate and untimely for one who would draw conclusions or advance predictions as to crop conditions or yields. Production figures for 1927 are now out of date and may be termed ancient history, and no intelligent forecast may at this date be made covering any staple crop for 1928. Such figures as may here be given are from 1926 and 1927 crop reports and no attempt will be made to estimate 1928 production. It is fully understood that before this report assumes printed form and is ready for distribution, reliable figures covering 1928 crop production will be available from other sources.

Touching upon the general situation of our farmers it may be said that they are slowly but gradually recovering from the deflation of the post-war period which probably

touched Agriculture more severely than it did any other line of production.

The total value of all farm crops for 1926 was, in round numbers, seventy-six millions of dollars, and for 1927, fifty-eight million. These totals do not, however, include the value of any live-stock products. It is the belief of those who have carefully observed conditions in our farming communities, that while profits have been inconsiderable, with no spectacular gains, yet there has been a general and healthful increase in the value of farms and equipment, and the advantages gained have manifested themselves in the form of better methods, better live-stock and better homes.

Good yields and fair prices have brought our potato growers forth from the abyss of debt and discouragement into which they were plunged by the heavy costs and low prices of 1922, 1923 and 1924, and no true lover of Maine or real sympathizer with her rural people can view the "come-back" of her potato growers in 1925 and 1926, with anything but satisfaction. With the turning over of a single crop (1925) mortgages were cancelled, fertilizer bills of long standing discharged, new equipment purchased and confidence restored. The entire history of industrial enterprise does not record a braver, more heroic effort than that made by the potato farmers of Maine in the spring season of 1925, and seldom has such an effort met with a more substantial reward. Sixty-seven million dollars came to the growers of this crop, or more than double the average return for the preceding five years.

The live-stock breeders and dairymen of our State now find themselves confronted with a most interesting and possibly dangerous situation. Because dairying has not always yielded a satisfactory return to the operators, because disease free conditions among our cattle have stimulated trade and advanced prices for dairy stock upon the hoof, and because many of our dairy farms are operated by men advanced in years and weary of the exacting duties and attention involved, there has been a disturbing tendency to sell dairy cattle in all sections of the State. Breeders and dairymen of other states where Tuberculosis Eradication is but

now gaining headway, supply the demand and prices rate high. Added to this is the regrettable fact that for several years our young stock has been allowed to dwindle in numbers as indicated by the following table from the records in the office of our State Assessors.

Year	3-yr. old cattle	2-yr. old cattle	Yearlings
1920	27,493	46,285	49,060
1921	27,077	35,613	37,934
1922	21,822	27,415	34,979
1923	17,180	25,509	32,350
1924	16,034	24,993	35,465
1925	15,573	25,335	34,017
1926	16,532	26,825	No record

A very general movement to check this decline in the number of calves retained, is undoubtedly under way as indicated by 1926 figures. Succeeding reports will show marked increases, but the traffic in productive dairy cows goes merrily on at the will of the out-of-state buyer with ample funds and tempting offers. This movement must be checked if our dairying industry is to maintain its place as the very foundation stone of Maine Agriculture.

The marketing of fluid milk and cream from our dairies has for more than a half century provided a profitable outlet, often reaching a total volume of eighty million quarts per year, when expressed in terms of milk alone. Prices have, however, varied, and the business as a whole has suffered during the past two years, from the uncertainties and fluctuations caused by needless and disastrous competition among dealers and handlers in the New England cities, where our product finds consumption. The entry of the chain store systems into the field of milk distribution caused for a time, disturbances which left a situation approaching chaos. In some instances these chain agencies used milk as a leader or trade stimulant with little thought of profit upon that particular commodity, and, with the passing of from twenty to thirty per cent of the retail milk business into their hands, the effect upon the general market was most depressing, leaving regular distributors no alternative but to cut returns to producers.

At the suggestion of the Agricultural Committee of the New England Council, the Association of New England Commissioners of Agriculture, a newly formed organization now holding monthly meetings for the consideration of the problems peculiar to New England Agriculture, took this situation into account and has devoted a major portion of its activities to promoting a better understanding among all classes of milk distributors. Looking toward a stabilization of retail milk prices, frequent conferences have been held where producer units, old time dealers and chain store managers, met with the Commissioners, discussing frankly their plans and their problems, and asking consideration and confidence. Much good has undoubtedly resulted. The cut-throat competition of the past eighteen months, with its disturbing result to producers, will probably not recur, and for the time at least, a fairly reasonable differential between "door-step" and "cash and carry" milk, has been set up.

Orchardists in Maine may also be said to have reached a crisis or turning point in their vocation. The difficulties which now beset the pathway of the successful fruit grower in the way of pests and fungi which must be controlled, and the more insistent demands of consumers for fruit of quality and standard variety, mark the absolute passing of the old, carelessly managed orchard. Maine growers have been quick to realize this, and in all parts of the State, pruning, spraying, fertilizing, grading and the setting of new orchards of standard varieties is going forward as never before. The campaign inaugurated by the Extension Service of the College of Agriculture at Orono looking toward reduction of the number of varieties to seven, namely, Spy, McIntosh, Baldwin, Delicious, Wealthy, Gravenstein and Rhode Island Greening, has the hearty endorsement of this Department. The top working campaign with this object in view, is going forward with satisfactory force and effect.

The years 1926 and 1927 have brought marked changes and not a few discouragements to those engaged in the canning business in Maine, an industry with which the fortunes of a large group of our farmers are closely interwoven. The years 1925 and 1926 witnessed the heaviest pack of sweet corn ever put out in Maine followed by one of the smallest,

the figures being in tons of green corn as hauled to the canners, forty-nine thousand for 1926, and twenty-five thousand for 1927. This was the answer of the Maine farmer to the report of over-production of a certain commodity and producers in other fields may at times wisely follow such an example. Seldom, indeed, has any group of farmers taken such unanimous and appropriate action in meeting an overstocked market. The surplus carried over from 1926 was, however, so great that normal demand has not yet been restored, and this will undoubtedly affect 1928 production and price. The canning of peas has also suffered the severest of set-backs, while yet in its infancy in our State. Fourteen hundred acres of peas were sown for this use in 1926, and less than half that area in 1927. Apples and beans were canned in quantities approaching normal.

A strong demand for Maine blueberries continues. This Department, acting with the U. S. Department of Agriculture, and with the Maine Experiment Station, has rendered such aid as has been possible to our growers and packers of blueberries, particularly in the control of the Blueberry Fruit Fly, but it is to the canners themselves that the major credit belongs. No effort or expense has been too great for these packers in establishing new methods and equipment, bringing their factories to the highest plane of efficiency and quality production. Two hundred and fifty thousand bushels of blueberries were packed in 1927, but seasonal conditions do not promise well for the 1928 crop.

Such are the conditions confronting producers in some of our staple lines as midsummer of 1928 approaches. As is customary, a brief statement of acreage and production is introduced at this point, covering our more important commodities.

Potatoes

Reference has already been taken to the improved financial conditions in our great potato producing areas. The 1926 crop sold for forty-nine million dollars, and that of 1927 for twenty-seven million, which, together with the 1925 return of sixty-seven million, has made a three-year average generally favorable to the producer. Acreage in 1926 was

one hundred and twenty-seven thousand, and in 1927, one hundred and forty-two thousand, with a still further increase indicated for 1928. Such marked increases are to be deplored except where reductions are reported for other large producing areas of the country, and if persisted in, will lead to other seasons of over-production and loss.

Certified seed continues to be an important adjunct to our potato farming, and the total acreage passing inspection in 1927 was more than ten thousand. This is in line with the steady increase from eleven hundred and twenty-five acres in 1922. Maine has won an enviable position in this respect, producing approximately forty per cent of all certified seed now grown in the United States and Canada. This position must be maintained even though most exacting regulations as to grade conditions and freedom from disease, sometimes bring discouragement to those whose entries fall slightly below requirements.

Our chief competitor, as it now appears, is Prince Edward Island, where somewhat cheaper labor and water-borne deliveries to southern United States points, have almost or entirely overcome the comparatively slight protection of fifty cents per hundred pounds. It is the almost unanimous opinion of those most concerned, that this protective tariff should be increased or converted to an ad valorem rate.

Hay

Production in 1926 was one million, four hundred and forty thousand tons, and in 1927, one million, five hundred and fifty-five thousand tons. Acreage varied only slightly from one million, two hundred and seventy-five thousand acres each year. Weather conditions during the summer of 1927 were unfavorable and much of the crop went to the barns in a damaged condition.

Under the reduced demands of recent years, we are frequently faced with an over-production of hay, but Maine farmers are meeting this condition promptly and intelligently. Everywhere one observes evidences of this in the turning of rough, unprofitable mowing into pasture, in the earlier cutting of hay when weather conditions permit and

in the slight, but encouraging, increase in the holdings of sheep and young cattle.

Apples

Apple production has been touched upon briefly in an earlier paragraph of this report. By way of emphasis, it may be added here that while we are credited with a total of two million, four hundred and forty-one thousand bearing trees by the United States Census of 1925, and with a total production of two million, two hundred sixty thousand bushels in 1926 and two million, two hundred and thirty-six thousand bushels in 1927, yet our commercial pack for either year was not above four hundred and fifty-five thousand barrels. Obviously, there is too great a proportion of unsalable fruit, and this problem may well engage the attention of those who seek the promotion and encouragement of the fruit growing business.

Grain

Oats continue as our great cereal with one hundred and thirty-six thousand acres in 1926, and one hundred and twenty-nine thousand in 1927. Maine's per acre yield is always high in comparison with that obtained in other states, and we held a state-wide average of thirty-eight bushels per acre in 1926, and thirty-seven bushels in 1927. This gave a total of five million, one hundred and sixty-eight thousand bushels in the first instance, and four million, seven hundred and seventy-three thousand in the second. Our wheat production has dropped to figures that are inconsiderable as compared with the stimulated yields of war years. One hundred and twenty thousand bushels are recorded for 1926, and seventy-two thousand for 1927. Buckwheat continues a favorite in some localities and 1926 brought the largest crop within recent years, three hundred and forty-five thousand bushels. Barley production remains fairly constant with some four thousand acres per year and an average yield of thirty bushels to the acre.

Live Stock and Live Stock Products

Notwithstanding competition from other dairying sections and a frequently unsettled market, the sale of dairy products continues to be one of the chief sources of revenue for the support of Maine farmers and their people. As a cash product and in point of value returned, it ranks second only to our potato output. Dairying also offers the advantage of a quick turnover and some authorities believe that cash invested in feed, labor and materials entering into the production of milk, cream or butter may find its way back to the investor within two months' time.

Six hundred and sixty-seven million pounds of milk were produced in 1927 and its value was above fifteen million dollars. New England market prices for fluid milk ranged from two dollars and seventeen cents per hundred weight in 1926 to two dollars and twenty-five cents in 1927, which with a small increase in production per cow have given producers a slightly more satisfactory return. A steady increase in the value of milk cows is noted as follows:

1926	\$57.36 per head
1927	62.41 per head
1928 (March 1st)	77.45 per head

Poultry husbandry is steadily gaining in Maine and our hen population now approaches the two million mark. With the assistance of poultry specialists from the College of Agriculture, breeders are learning to control disease in their flocks and more attention is being paid to quality and appearance of products offered for sale. Poultry men are interested in the proposition of marketing under the New England Label and without doubt cartoned eggs from Maine bearing that seal of quality and freshness, will soon be offered in increasing volume.

The number of sheep is showing a small increase from the low point of 1922 and returns for 1927 showed a total of ninety-two thousand for the State while early 1928 figures reached ninety-seven thousand. The attention of many young farmers now appears to be focused upon this branch of agriculture and we may look for larger holdings within

a very few years. Indications are that several large sheep rearing enterprises involving some of the idle lands of the North Central section of the State will soon be undertaken. Depredations by dogs continue to be a discouraging factor, but in the past two years these have been over-shadowed by the serious losses caused by bears, and the continued growth and prosperity of this branch of animal husbandry seems to demand the placing of a bounty upon these marauders sufficient to check their increase at least in those localities where sheep raising is attempted.

Farm horses have declined steadily in number since 1915, being replaced by trucks and tractors in many instances. Numbers of swine made a material advance in 1927.

Truck Gardening

No branch of agriculture yields a better or more satisfactory return than truck farming or gardening and many Maine farmers have grasped their opportunity. Their number is, however, far too small to supply the increasing needs of our cities and our summer visitors. It is earnestly to be hoped that producers who are planning increased areas to be devoted to crops of which there is already an over-supply, will consider carefully the possibility of preparing vegetables, early fruit, dairy and poultry products for this market at their very doors.

Various Activities

There are various activities of the Department affecting the Agriculture of our State and the health, comfort and safety of its people, which should be touched upon in this report.

Insect Control

Gypsy and Brown Tail Moth infestation will be described in the report of our Division of Plant Industry, but it may be predicted here that a somewhat serious condition will be pictured. With deep regret we observe the material in-

34101

STATE LIBRARY

crease in the number of these pests and in the range of their defoliations. The Department has purchased another large and effective sprayer and we have rendered such service as our funds would permit especially in regions where shade trees and summer camp properties were threatened.

The European Corn Borer continues as a problem full of menace, difficult of solution, but with the growing hope before us that the insect may not prove entirely hardy under the severe and changeable conditions of our winter season. Some eminent entomologists are ready to declare that in the case of the two brood corn borer which exists in Eastern New England, the second brood, which emerges late in August, must go into hibernation in an undeveloped state owing to the shortness of our season, with a resultingly great mortality during the winter. The interests at stake are, however, too important to be gambled with and we should continue our protective measures and the modest appropriation made for this purpose which may be regarded as insurance upon our valuable corn packing industry. The Department has established four lines of defence, namely, inspection of certain products entering the State for distribution, restriction of shipments from infested to non-infested areas, fall plowing of infested corn-fields and seizure of all corn and dahlias grown in infested areas outside the State at State lines. In carrying out the latter provision, more than two hundred and fifty thousand cars are stopped each summer at the points of entry at Kittery, Salmon Falls and Berwick.

Tuberculosis Eradication

This important work has been carried forward by the Department of Agriculture with the co-operation of the United States Bureau of Animal Industry, so steadily and vigorously that we have already reached a point where we may look forward to the time in the very near future when we shall point proudly to Maine as the first northeastern state to complete its first test giving the designation of "modified accredited area" to our entire territory. The effect is already manifest in the increased demand, at high prices,

for our cattle, and, if we can increase our herds rapidly enough to supply this demand and at the same time maintain the full strength of our dairy units, the benefits of our long and consistent struggle for tuberculosis eradication will be felt for generations to come. In this victorious campaign we have had the unfailing sympathetic co-operation of Your Excellency and Council and the unquestioning support of our Legislators. It is probably true, also, that there is no State in the Union, where Bovine Tuberculosis is found, where farmers and cattle breeders have been so ready to throw aside prejudice and personal interests and reach out, one and all, for the splendid goal of a disease free State.

Farmers' Meetings and Exhibitions

In the course of each year, members of this Department attend and address more than five hundred farmers' meetings and gatherings. So it is that, through the interest and courtesy of Granges, Farm Bureaus and other organizations, we approach probably thirty or forty thousand people at a minimum expense. Mail handled by our various Divisions is also worthy of mention here, since the number of pieces of first-class matter received is increasing at the rate of three thousand per year. An average of two hundred letters per day are now received and considered.

Our Department has taken an active part in displaying the products of Maine at the Eastern States Exhibition at Springfield, Massachusetts, where we have set up each year a complete exhibit of the major products of our farms. Many other exhibitors in the industrial and recreational departments have learned to depend upon the men and women of our force for assistance during Exposition days, and this has been cheerfully rendered with the one object in view of advertising our State and demonstrating the variety and excellence of its products. Displays are also made at the annual Seed Show and Dairymen's Conference and with such Fairs and Associations as request the cooperation of the Department.

Fairs

Fifty-nine fairs sought State aid in 1926, and forty-one in 1927, showing the effect of legislation, passed in 1927, looking toward the reduction of their number. The new law brought about marked changes in the distribution of the State Stipend, but its effect appears to have been generally satisfactory and its justice cannot be questioned since it provides that the bounty of the State be bestowed exactly where it should be, namely, upon those Associations which make the greatest effort to encourage worthy Agricultural Exhibits.

Withal, there are, still, too many Fairs, and financial difficulties threaten several of our best. Expenses increase more rapidly than the fair going tendencies of our people can be stimulated. Those in charge of the affairs of the various Societies have given somewhat more attention to Agricultural displays the past few years, but it is only proper to state my belief that much more might be accomplished along this line. Any Society setting up a worth-while Agricultural display not only keeps the faith with the State of Maine, but also adds to its own attraction and appeal.

Suggested Legislation and Appropriations

There is now no reason apparent why the Department should ask for any radical changes in the Agricultural laws of our State. The present "set-up" of our organization may well be continued with the possible addition of a Bureau of Statistics. This latter is recommended because the practice of using the time of Division Heads or Executives in searching for and compiling the volumes of statistics constantly required in our work, has been proven wasteful and inefficient.

No increase in the total of Departmental appropriations asked from the Budget Committee is contemplated, but some changes in apportionment among our various lines of work may be advisable. The appropriation for Farmers' Institutes should be increased. This has been fixed for many years at four thousand dollars, but deductions for the sup-

port of the Poultry Societies and Dairymen's Conference, have reduced this to two thousand, two hundred and fifty dollars annually, and from this amount all the educational work of the Department must be financed. We do not intend to teach Agriculture, that function being well taken care of by our College, but there are countless calls for lecturers and speakers upon Agricultural topics, many of whom should be brought from without the State. No such call, if made in need and with a desire to listen to up-to-date agricultural teachings, should be refused because of lack of funds.

It is also my purpose to request an increase of two thousand dollars in this fund to establish under proper regulation, a series of substantial prizes to be given to the Maine Agricultural Societies that put on the best and most educational displays of Agricultural products. Such encouragement would, I believe, strengthen the program of some Societies where it is now most lamentably weak. Funds for the support of insect control work have proven inadequate under the trying conditions of the past two years, and with this in mind we propose an increase in the Plant Industry appropriation. Provision should also be made for reasonable increases for the compensation of our Division Heads and other workers who have rendered faithful, efficient service to the State over many years. To these the success of our Department work is due, and in the full knowledge that the eyes of Agricultural organizations in other states are turned upon their achievements, it is only sound business policy to offer financial inducements here which shall be at least comparable with those advanced by other states and other industries.

Recent inroads upon our flocks and herds by bears suggest the thought that an adequate bounty might be set up upon these animals. Such a provision would give impulse and encouragement to a large number of sheep owners.

The time is not far distant when we shall, by legislation, follow the lead of several other states in setting up standards for, and licensing, roadside markets, since the advantages and opportunities of these important distributing agencies are now being lost. The roadside market that wel-

comes supervision and is found to be offering home-grown quality farm products, at reasonable prices, should be licensed and furnished with an official sign for its own advantage and for the protection of the consumer.

Conclusion

In conclusion, I can only repeat the thought conveyed in the final paragraph of my last report. I am deeply appreciative of the consideration and support given me at all times by Your Excellency and the Council. No reasonable request has been refused, and such success as we may have achieved is due in a great measure to your cooperation. I must commend also the loyal, efficient service of the men and women of the Department of Agriculture who have worked with me, and I am grateful for the continued support and cooperation of the Granges, the Farm Bureaus, the Experiment Station and College of Agriculture and Extension Service. In our happy cooperative spirit and in our ability to work together for improved rural conditions we, in Maine, are indeed fortunate. Nor would I forget the many expressions of confidence and support offered to the Department of Agriculture by the farmers of our State. Long experience has led me to the belief that our Maine farmers are the most advanced and appreciative of all their calling. It has been a privilege to work with them and for them.

REPORT OF CHIEF OF THE DIVISION OF INSPECTION

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

I respectfully submit, herewith, my report covering the work done by the Division of Inspection from July, 1926, to July, 1928.

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 Legislature of 1927 passed an act to define "Storage Eggs" and "Processed Eggs," to regulate certain details of the sale and distribution of the same, and granting the enforcement of this act to the Commissioner of Agriculture. In the same session of the Legislature an amendment was made to the Apple Packing Law, thus involving additional activities and changes of enforcement for the Division.

The inspection and collection of samples of seeds, feeding stuffs and fertilizers have been made in the usual manner. Constant inspection has been given in food and drug matters, the inspectors of the Department cooperating with the health officers.

Seed Inspection

The inspection of seed, 1926-1928, was performed by our regular inspectors, who covered practically the whole State and obtained many samples. The results of the analyses of the samples collected, together with samples from dealers, may be found in OFFICIAL INSPECTIONS, No. 122.

Feeding Stuffs Inspection

The feeding stuffs inspection for 1926-1928 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. 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:

	1927	1928
Number of brands registered.....	618	636
Number of samples drawn from Sept., 1926, to May, 1927.....	300	
Number of samples drawn from Oct., 1927, to May, 1928		257

The results of analyses of the samples taken may be found in OFFICIAL INSPECTIONS, NO. 124.

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.

There were 412 brands registered during 1927-1928, the usual number of samples being collected, the results of which may be found in OFFICIAL INSPECTIONS, NO. 122.

Fertilizer Inspection

During the spring months of 1927 and 1928, 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 fertilizers on hand, and were for the most part properly registered.

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

	1927	1928
Brands registered	353	311
Samples collected	402*	405*

*Many brands sampled in duplicate.

The results of analyses of the samples collected may be found in OFFICIAL INSPECTIONS, NO. 125.

Drug Inspection

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

Food Inspection

We have endeavored in every way possible, 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. Particular attention has been given to the bakeries, especially to the proper handling of bread.

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, maple products, 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.

Bottling Establishments

During the past two years, a very 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.

	1927	1928
		6 mo.
Number of bottling establishments licensed.....	70	67
Inspection of number of samples taken	30	0

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. Again, as in 1925, in 1926-1927 two-thirds of the factories canning blueberries received definite full time inspection under the arrangement provided in Sections 23 and 24 of Chapter 36. 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 above referred to by the Legislature of 1926-1927, a large amount of field work has been done by the 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, and in the summer of 1927 a system of inspection was installed at various shipping points in Maine, principally at Rockland and Camden, where tests were made as to the quality of raw blueberries being shipped outside the State, and in general a very fine co-operation was given by shippers of berries to the inspectors in charge.

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.

Shell Fish

As reported for the period from July first, 1924-1926, an unusual situation has arisen relative to the marketing of shell fish, which in Maine means clams as there are no oysters recovered in commercial amounts within the borders of the State, that bids fair to present a problem of considerable importance. This situation is somewhat accentuated by the fact that the Massachusetts Legislature of 1928 passed a special act prohibiting the introduction of clams unless such shell fish were given an accredited quality and certified at point of origin by the officials of the State. This

is a matter that will need considerable attention during the shipping season which begins in Maine September 15.

Ice Cream

Ice Cream samples have been collected and upon analysis it has been found that the ice cream in general is of good quality. Occasionally, a local manufacturer, through ignorance and sometimes by wilful violation, attempts to sell ice cream considerably below standard. In such cases, violators have been cited to hearing and proper settlement 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 seems unnecessary that any statement regarding the work of this Bureau should be made a part of this report.

Apple Inspection

The Legislature of 1927 again made definite changes in the names of grades, having in mind to make the Maine Law conform to the United States Standard Grades and during the shipping season of 1927 inspectors of this Division worked in cooperation with agents from the Division of Markets, mostly along educational lines, visiting the packers, explaining the workings of the law, and giving instructions as to the best methods of packing.

Apparently, the changes effected will work to an advantage in raising the standard of Maine Apples, but it is probably too soon to predict with certainty what the full advantage will be, but it is our plan to proceed carefully and along educational lines until the law is fully understood.

Federal Cooperative Work

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

In brief, to 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.

Since the publishing of the last report, considerable information has been obtained by investigations of the Committee on Standards, working in Washington, regarding the idea of establishing definite food standards for the Federal Government and various State agencies charged with the duty of enforcing food laws.

The food standards of the State of Maine have not been altered or a publication made of the standards since 1913. It is recommended, therefore, that these regulations should be revised and printed at the earliest opportunity.

During the last two years, there have come from various sources a demand for standardizing bread in the loaf, and legislation will probably be proposed at the next Legislature. This is a matter that should have careful attention.

As it has been frequently recommended in previous reports, it is our belief that legislation is necessary to remedy the conditions existing, especially in country towns, for the country slaughter house where animals are killed for food without adequate inspection.

In conclusion, kindly accept my thanks for your advice, wise counsel, and hearty cooperation in the administration of the affairs assigned to me. The cooperation of the Clerks and Deputies of this Department and of other Departments of the State House, also 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 SEALER OF WEIGHTS AND MEASURES

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

As State Deputy Sealer, I herewith submit to you a report of the work done by this Bureau covering the period from July first, 1926 to July, 1928.

During the summer months when motor transportation was available, a great deal of field work was accomplished. This covers a number of activities, testing gasoline pumps, heavy duty scales, re-weighing packages and assisting the numerous local sealers throughout the State.

As the work of collecting feeding stuff samples has been done by me for several years, I have from time to time checked up the weights of this commodity and have found no serious discrepancies.

In the last Legislature two bills were presented affecting this Bureau; one relating to the sale of firewood, which failed to pass, and the other relating to the capacity of milk bottles which passed and became effective in July, 1927, and provided that bottles of one-half pint, one pint and one quart capacity only, could be legally used in this State for the sale of milk.

The statutes provide that every five years city and town standards must be verified by the State Standards. During the years 1927 and 1928, all such standards must be tested. So far, this year, eighty cities and towns have submitted theirs to this office and have been tested and sealed. Only a few pieces of this equipment failed to pass this inspection and were condemned.

I find there is a better understanding between the local sealers and the people whom they serve. Occasionally, we find dealers who are antagonistic toward sealers in general, apparently, thinking that a visit to their place of business is

a hindrance and imposition rather than a help, but on the whole, conditions are much improved.

During October of each year, a meeting of Local Sealers is held, generally, at the State House. This brings together men from all parts of the State and gives them a chance to exchange ideas and air their troubles. We have been very fortunate in securing the services of Mr. Ralph S. Smith from the National Bureau of Standards at Washington. His talks have been very instructive and helpful.

I feel that the corps of Local Sealers are doing better each year and are more interested and are giving greater care and more time to their work, even though some of them are receiving a very small remuneration for their labors.

A summary of the work done by Local Sealers is hereby appended.

Respectfully submitted,

C. O. BROWN,

*State Deputy Sealer of
Weights and Measures.*

State Report of Weights and Measures for the Year 1926

NUMBER TESTED AND SEALED

NUMBER CONDEMNED

Counties	NUMBER TESTED AND SEALED										NUMBER CONDEMNED														
	Scales	Weights	Dry Measures	Liquid Measures	Yard Sticks	Gas. Pumps	Milk Jars	Ker. & Oil Pumps	Molasses Pumps	Taxi Meters	Measuregraphs	Vehicle Tanks	Scales	Weights	Dry Measures	Liquid Measures	Yard Sticks	Gas. Pumps	Milk Jars	Ker. & Oil Pumps	Molasses Pumps	Taxi Meters	Measuregraphs	Vehicle Tanks	
Androscoggin	2,135	1,543	96	326	41	371	6	437	24			6	34	7	2	3		1							
Aroostook	1,236	1,123	11	437	83	257	338	108	64				15												
Cumberland	3,798	3,925	304	2,291	340	934	17,342	302	48	26	49	2	297	20	1	62	2	75	145	8		6	3		
Franklin	413	662	17	231	25	111	1	42	38			3	5	1											
Hancock	628	747	46	392	65	169	397	133	31				4	1	5	2	5			1	1				
Kennebec	986	1,120	53	443	146	296	6	123	62		16		42	200	6	10	63	19		1				4	
Knox	895	1,518	83	802	94	311	1,902	84	35			4	16	23	5	16	4		21	2					
Lincoln	413	767	27	149	32	94	601	48	16			2	4												
Oxford	574	269	34	190	50	160	167	136	4		1		5		1	4	2	3							
Penobscot	1,176	1,102	72	488	108	326	33	205	74			4	42	29		5	4	9	5	2					
Piscataquis	365	522	14	149	52	91	0	47	24				1	1											
Sagadahoc	407	675	101	174	29	95		52	3				5		5	1	5			5					
Somerset	569	487	75	202	58	224		59	20		3		15	19		1	3	13						1	
Waldo	522	1,061	35	247	24	103	65	80	43				10		1			3							
Washington	737	1,112	83	470	81	221	538	119	69				10	1	3	1		2							
York	1,246	483	38	395	25	242	4,027	320	77				9	3			1	3	46						
Total	16,100	17,116	1,089	7,886	1,253	4,005	25,423	2,295	632	26	68	23	514	304	19	113	82	145	217	21	1	6	7	1	

State Report of Weights and Measures for the Year 1927

Counties	NUMBER TESTED AND SEALED										NUMBER CONDEMNED															
	Scales	Weights	Dry Measures	Liquid Measures	Yard Sticks	Gas. Pumps	Milk Jars	Ker. & Oil Pumps	Molasses Pumps	Taxi Meters	Measuregraphs	Vehicle Tanks	Scales	Weights	Dry Measures	Liquid Measures	Yard Sticks	Gas. Pumps	Milk Jars	Ker. & Oil Pumps	Molasses Pumps	Taxi Meters	Measuregraphs	Vehicle Tanks		
Androscoggin	2,145	1,396	90	309	27	539	4	393	49			2	39		1	6		10	2	1						
Aroostook	1,249	1,427	20	901	82	320		208	67				35	3	17	7				3						
Cumberland	3,600	3,308	299	2,632	292	1,056	13,884	266	68	99	36	2	278	37	6	9	23	105		4			23	2		
Franklin	342	378	11	143	59	123		54	36				5	1												
Hancock	479	514	58	215	36	170		343	60				2													
Kennebec	1,260	1,504	82	358	162	372	49	157	61		15		45	106		24	30	38		6	7	2		3		
Knox	858	1,627	93	972	51	372	1,855	103	45				9	15	1	6	3		14		1					
Lincoln	313	512	18	76	27	82		500	59				2													
Lincoln	561	226	55	183	35	193		122	11		1		18	6						1						
Oxford	1,158	1,150	30	627	116	504	55	301	57		1		77	15		7		16		2	7					
Penobscot	356	631	11	147	36	117		49	20				3			1					1					
Piscataquis	384	669	25	123	32	100		46	2		2		13	2		13										
Sagadahoc	672	491	109	236	57	225		97	27				25	14	1	5	7	11		10						
Somerset	616	1,317	29	319	10	149		72	33				5							1						
Waldo	818	1,194	162	385	68	241		555	112	75			15	4	2					2						
Washington	1,164	355	37	377	24	363	4,321	235	48				5	2	1			6		2						
York																										
Total	15,975	16,694	1,129	8,003	1,114	4,926	21,620	2,316	638	99	55	4	571	205	29	73	71	197	24	39	3	23	5			

COMMISSIONER OF AGRICULTURE

REPORT OF THE CHIEF OF THE DIVISION OF PLANT INDUSTRY

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

I submit herewith my report of the work of the Division of Plant Industry from July 1, 1926 to July 1, 1928. It is planned to make the report so that the work of the three branches, namely: Horticulture, Insect Control, and Seed Potato Certification will be distinct from each other.

During this period there has been no attempt to assume or to become interested in any other lines of endeavor than those mentioned in the Statutes. With the money available it has not been possible to meet all the demands made, especially in Insect Control work. When our last report was made a warning was given that a general spread of the Gipsy Moth might be expected. A complete defoliation in many sections during the seasons of 1926 and 1927, have borne out our prediction and at this time it looks as though this condition would be repeated. A detailed account of this work will be given later in the report.

The Seed Certification work has been handled by me personally and the following report is offered.

Seed Inspection and Certification

After having passed through a season when table stock prices ruled high, there was not the interest shown in seed certification; so that when the field work began in July, 1926, there were but 11,289 acres entered, of which number 6,655 passed inspection and at the close of the shipping season in the spring of 1927 there had been moved under the blue tag 512,123 barrels, which was the second largest year in the history of the work. The average yield was better than in 1925. A noticeable feature was the wide variation in yield in different parts of the State. The quality of the crop was generally good, owing to the perfect weather conditions

after the middle of August. This is the first year that any potato-growing section had a larger acreage entered for seed certification than Maine, and this year Prince Edward Island seems to have taken the lead. It will be noticed that the leading variety passing inspection was the Cobbler, as in previous years, and it is apparent that our largest seed trade still lies in the Cobbler-growing sections of the country.

From a disease standpoint, this particular growing season was disastrous to the Green Mountains, only 37% of which passed inspection. A few additional figures may be interesting to bring out in detail some of the problems connected with seed certification work. During the growing season of 1926, the total number of fields inspected was 1,130, the average size of each field being about ten acres and the rejections were made as follows:

Disease	No. of fields	No. of acres
Mosaic	208	1977
Spindle Tuber	58	668
Distance Ruling	120	1212
Leaf-Roll	15	82
Mixtures	17	131
Wilt	6	24
Blackleg	5	79
Poor Stand	2	22
Weak Hills	1	6
Off-Type at Digging	2	44

An analyses of the above will show that the mixtures which for many years caused trouble are of little concern now and the fact that this is so, shows that those who handle Maine potatoes are reasonably careful, because the different varieties are handled in the same house and it would not be unreasonable to expect some mixtures. Blackleg, while apparently not very important, is showing an increase although not sufficient to reject many fields for inspection. With a good average price for this 1926 crop, the entry which was offered the Division in July, 1927, was somewhat higher. Five hundred ninety-five applicants entered a total of 18,332 acres for inspection. There was finally passed 10,781

acres by varieties as follows: Cobblers, 4,377; Mountains, 4,126; Spaulding Rose, 2,064; all others, 215. This shows a 62% increase in passing acreage over that of 1926, the percentage of rejections remaining about as usual. This speaks well for our growers because in 1926 we had the heaviest infestation of aphid that we have had for a great many years and evidence from certain farms and certain lots of seed leads us to believe that the disease spread was tremendous.

In my judgment had our growers gone along as they used to do, and planned their acreage with no regard for disease content, we would have this year been back where we were in 1921. Instead, many took especial care to secure good seed from whatever source available, and were able to maintain their standard in certified seed work. Just as a matter of information there were not more than three lots of Mountains grown in Maine in 1926 that were able to meet the inspection requirements unless they were from tuber unit seed plots.

The 1927 shipping season ended in June, 1928, and it was found that there had been moved 694,820 barrels to twenty-one States and two foreign countries by varieties as follows: Cobblers, 352,125 barrels; Mountains, 180,982 barrels; Spaulding Rose, 143,938 barrels and all others, 17,775 barrels.

The points within the State from which our heaviest shipments were made, follow in order: Presque Isle, Fort Fairfield, Caribou, Mars Hill, Washburn. The remaining cars were from the different stations. We have on file in the office a record showing to which State this 1927 crop was shipped by varieties and this information is available to our shippers if they care for it.

This year's crop presented a hard problem for the Department for the reason that the Cobblers carried many hollow hearts and an unusual number of off-type and bruised tubers. It is believed, however, that a reasonable grade was put up by our growers because the number of complaints received has been almost negligible.

There have been interesting developments in the 1927 crop so far as facts relating to seed certification were con-

cerned. During the shipping season we were bothered quite a bit trying to decide just which was an ideal type to let remain in the seed sack and which ought to be thrown out. We submitted to Dr. Folsom of the Experiment Station some tubers which were decidedly not true to type, and these were grown during the season of 1927 at Aroostook Farm. The progeny were harvested and examined carefully and the summary of this work is interesting to everyone who is interested in seed potatoes. I have read with a great deal of interest Dr. Folsom's report and the conclusions which he drew seem to be worthy of repeating at this time.

(1) In the Spaulding Rose, "The shape of the planted tubers as a group was no indication of what was to be seen in the plants."

(2) "The large and starring vine did not mean the same, as to tuber characteristics, in the Spaulding Rose lots."

(3) "In the Green Mountain plants—good shape was not a sign of freedom from vine disease."

"Mosaic present—was not correlated with the shape of the mother tubers except for being most abundant in the healthy or good shape tuber group."

(4) "A great majority of tubers are not closely like the parent tubers even in the one characteristic, facial outline."

(5) "The results—oppose the idea of inheritance of shape characteristics in the Green Mountains except those symptomatic of giant hill and spindle tuber." "Smallness of stem end cannot be depended upon to appear again in the progeny, nor smallness of the bud end nor ideal facial outline."

(6) "While the spindle tuber characteristics were generally perpetuated in the group, there was no dependable perpetuation of facial outline from each tuber to its tuber progeny."

(7) "With giant hill, inheritance of tuber shape is much less dependable than inheritance of vine type."

(8) "One cannot be sure of picking either spindle tuber or giant hill stock out of partly diseased stock, judging by tuber shape. Some of the suspected tubers will produce healthy vines. Furthermore, among tubers known to come

from stock with either of these diseases, one usually can find tubers that look like healthy tubers."

The report of Dr. Folsom on his work covers several pages and is of sufficient interest to be commented upon. During this entire shipping season we have found it necessary to throw out a great many tubers in order that a good looking sack might be sent to the purchaser. A practical question submitted to us by our growers was this: "Why did you give us a slip showing nearly disease-free fields and then at shipping time grade our stock so hard?" The only answer we can make is that we were trying to put on the market a package which would merit favorable consideration. Most of the potatoes thrown out when grading, were refused on account of bruises and poor type. What really happens then is that the grower takes the pickouts which we will not allow him to ship, plants his crop the succeeding year, passes certification and may or may not have good grade stock to put up at shipping time.

The point that stands out in this entire discussion is that there is no ideal type for a variety which can be depended upon to run true to type year after year, and in my judgment we are on the wrong track grading seed as we are forced to do. We are making it more expensive for our own growers and the Southern man who buys from us. We hope that the time will come when potatoes will be bought on the basis of the field reading rather than on the general appearance of the package.

Summary

While there has been a rise and fall in the number of acres entered for inspection over a period of years, there has been a steady increase in the number of barrels of seed sold which would seem to indicate that our growers have been sending a worth-while product to market. There is always in any line of work some outstanding items of interest, and in our work at the present time it is the uncertainty in the growing of the Green Mountain crop for certification that seems to be the outstanding problem. Much work has been done in tuber unit plot work and there have

been instances of success. For some reason, however, there have been many failures even when the tuber unit plot has been planted and carefully rogued by some of our best men. It leads to the thought that there may be something in location. In general, it is known that there are factors which are not clear and much work remains to be done before growers can be advised clearly regarding the weak spots in the Green Mountain variety. We are still dependent upon imported stock from various sources, for our best foundation stock.

The above is not true of the Cobblers or Spaulding Rose. There is sufficient acreage of these two varieties available for seed, so that there is no need of anyone planting any other than the very best seed. Several samples of Maine Cobblers planted in the Long Island, New York, test plots in the last two years, have been practically free from disease.

Some of the problems which we used to think were solved, come to the surface in a new light. Blackleg, which we thought of little account, has presented a new problem in that, especially in the Mountain variety, we have had a large increase toward the end of the growing season, the count getting as high as eight or ten per cent, and when the tubers were dug there was no evidence of Blackleg in them. The question arises, "Will or will not the progeny of these hills reproduce Blackleg next year?" We are asking the Station to help us on this problem and hope that eventually it will be answered.

This Division, with the resources at its command, has done all that it could to increase the sale of certified seed. We have furnished the trade each year a list of the growers who had certified seed for sale. We have agreed, in many instances, to make a personal inspection to assure the buyer that he would get good stock. We have visited Long Island, Virginia, and all the Southern States this year as far South as Florida, calling on the different growers, trying to find out just the weak spots in our certification system. We think we have most of the weak spots taken care of, so far as the inspection service can do it, and all we need and ask at this time is the cooperation of our own growers, and we believe in all sincerity that there is no State that can produce any better seed potatoes than we can.

It may not be out of place at this time, to comment on the fact that our keenest and only strong competition comes from Prince Edward Island and New Brunswick. It is known that an investigation will be carried on here this summer by the Tariff Commission, and it is hoped that before the 1928 crop is marketed, an increased tariff will be put in effect which will help our industry to better withstand the years of low prices which apparently come to us quite often. We need an increased tariff to make our conditions as favorable as those of Prince Edward Island, which has such a desirable water freight rate.

Insect Control Work

During the summers of 1926 and 1927, and this year to date, more complaints have been received relating to the amount of damage being done by the Gipsy Moth and Brown-Tail Moth, than have been received before for a great many years. As has been stated so many times by this Division, these insects, especially the Gipsy Moth, are scattered over such a large woodland area that artificial means of control are practically out of the question. The painting of egg clusters and the spraying of trees can be done where the trees have a high value or where the comfort of a great many individuals is at stake.

Among the numerous complaints referred to were many from owners of summer camps. By this it is meant camps engaged in the commercial business of handling so many boys and girls for a period of weeks during the summer. Conditions became so bad in the woodland growth there that the caterpillars were being carried into the buildings on the clothing of the guests and cases of pupating taking place within the building was brought to our attention. It seemed almost essential that something be done in an attempt to show these owners how insect pests could be controlled and complaints from their guests reduced to a minimum.

To help out this situation in the fall of 1926 egg clusters were painted on the trees near the buildings in a great many of the summer camps and in the summer of 1927 these trees were sprayed and a real measure of control noticed.

In order that a real index to the situation might be had, the Federal officials working in cooperation with our Department during the winter of 1926-1927, placed egg clusters on thirty-eight known points, so that temperature and weather control could be studied and in the following spring an analyses of these colonies showed that there was a good hatch of eggs at all but four points, and a complete non-hatch at only one point. These egg clusters were all above the snow protection line. It is always true, of course, that the egg clusters below the snow protection line develop a good hatch. The result of these investigations indicated that there would be an increase in the Gipsy Moth caterpillars during the summer of 1927. The two machines owned by the Department were kept busy during the entire period in which spraying was effective, and while but a small part of the territory could be attended to, much overtime work helped to relieve the situation. The same towns were sprayed, as were sprayed the previous year, with some additional summer camps taken on with the smaller machine.

In the fall of 1927 egg cluster painting was continued in spots where it was thought the most good could be accomplished. Places chosen were public camps, picnic groves and gathering places where a spread would take place in a more or less wholesale way. The weather during the fall and winter was unusually mild and we were able to keep our men at work with only a small loss of time.

In the spring of 1928 the Governor and Council gave the Department permission to purchase a new Fitzhenry-Guptill spraying machine, with the result that a great deal of work has been accomplished. Spraying has been done with the use of three machines in Kittery, Eliot, South Berwick, Berwick, Sanford, Rumford, Saco, Biddeford, Auburn, Augusta and Westbrook. Twelve Boys' and Girls' camps were sprayed, besides many overnight camps, and places similar to Wilson's Camp Grounds at Crystal Lake in Gray and the section near Jordan Bay at the Mineral Springs in Windham, also Lakeside Park. These latter places were in the most heavily infested area in the State and were sprayed from the standpoint of not only saving the trees, but also of preventing the spread to the territory north and east.

Briefly, most of the spraying work has been done where it would seem to do the most good for the greatest number of people, and to prevent the spread so as not to injure the property. The territory chosen in which to do the spraying was based on winter scouting following the defoliation reports of 1927, which are available for study in our office. There was an area of about twenty-two towns bounded on the east by Poland and New Gloucester and extending nearly to the New Hampshire line, which seemed to be badly infested, with the heaviest infestation through Windham and Gray.

Parasite Work

The distribution of parasites made in the spring of 1297 was as follows: Sebago, 63 colonies; Otisfield, 44; Casco, 60; Poland, 27; Fryeburg, 65; Brownfield, 83; Porter, 61; Hiram, 75; Denmark, 45; Bridgton, 67, and Naples, 60. These were a parasite known as the *Anastatus*. The parasites were received from the Federal laboratory at Melrose Highlands, Massachusetts, and were allotted to the State of Maine, without cost, by the U. S. Department of Agriculture. The distribution was made by our men acting under instructions from the Federal officials with whom we work very closely. In my opinion, even though parasite work has not shown the results that many of us expected, there is no other source to which we can turn for relief, and this work must be continued in the hope that a parasite may be found that will give results under our extreme climatic conditions.

This year a little different system of parasite distribution was tried in the heart of the heavily infested area. In the town of Standish 670 acres of woodland were chosen, in which 500 parasites to the acre were distributed. In the town of Cumberland near the Gray town line in the section around Forrest Lake, 258 acres of woodland were colonized. This was an attempt to see if the parasite will do better when more thickly distributed than formerly. At the same time the parasites were distributed, a collection of Gipsy Moth egg clusters was made for the purpose of studying the number of parasites which had worked on the egg clusters,

and also study the egg hatching. These eggs were all sent to the Federal Laboratory for observation.

The Brown-Tail Moth is slowly increasing in York and Cumberland Counties. A few webs have been reported as far east as Livermore, and one isolated colony reported in Castine. Where spraying work has been done along the highways in cities and towns, Brown-Tail Moth control can easily be had, but where no spraying work has been done it is only a question of time when the Law requiring towns to remove the webs, will have to be enforced. Some few towns in York County have, the last two seasons, been obliged to remove the webs in some parts of the town.

The Elm Leaf Beetle, which is common in our State and feeds very heavily upon the elms, is not nearly as bad this season in those cities and towns where spraying has been done. The recommendation which the Division has made so many times, that towns having valuable shade trees should own a power spraying outfit and spray their trees each year, is still worthy of consideration. It might be possible for two or three towns to own jointly a machine that would do the work at a reasonable expense.

The Satin Moth

June 22, 1920, the Satin Moth was discovered in some poplars along the parkway near Malden-Medford city line, a few miles north of Boston. This insect has, for its food, the poplar and willow tree and has, in the past few years, found its way into Maine, and this season has been reported as being quite destructive in several towns. The general distribution of this insect in New England has been toward the North and Northeast, as is the case of practically all insect life. The report comes to us from some cities that conditions were so bad, the trees were entirely defoliated and the caterpillars found in large numbers on the residences, making conditions very bad. A State quarantine has been declared on the spread of this insect, and owing to the fact that the poplar has such a high commercial value, it will be necessary for our State to make a careful study of this particular insect pest as to its habits and distribution, especially toward our northern wooded area.

This insect derives its name from the white, satin-like appearance of the moths, which are larger than most of the white moths native to Maine, and have no colored markings on the wings.

As is common with all this insect life, spraying in the spring is recommended and the addition of fish oil or linseed oil to the arsenate of lead, is strongly advised.

Conclusion

It will be necessary, within a few months, to publish a bulletin giving in detail the Certified Seed Potato work. Many requests are received for information and at present we have no publication available.

I want to take this opportunity to thank you for the help which I have received in carrying on the work of the Division. To my immediate associates, both in the office and in the field, I wish to express my appreciation for their loyalty. Upon them rests the burden, and as near as I can tell, each one has done his or her part in the interest of the Department.

Our relations with the Experiment Station and the College of Agriculture have been, as usual, very pleasant, and to them we owe our thanks.

Respectfully submitted,

E. L. NEWDICK,

Chief, Division of Plant Industry.

REPORT OF BUREAU OF HORTICULTURE

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

I herewith submit my report briefly covering the work of the Bureau of Horticulture for the period from July 1, 1926 to July 1, 1928.

Of necessity, we have followed along lines similar to those pursued in previous years. We have laid particular stress on orchard renovation and eradication of the undesirable varieties of fruit that have small market value. Where

orchard planting was contemplated we have strongly urged that the "New England seven" be strictly adhered to, which are McIntosh, Wealthy, Gravenstein, Baldwin, Northern Spy, Rhode Island Greening, Red Delicious. These varieties have been selected because of their commercial standing.

If a whole community grow the same varieties there will be volume enough to attract buyers who pay good prices for car lots which means much to those growers who have not arrived at the point where they can as individuals load a car of one variety. In order to produce fancy and number one fruit, the orchards must be well cared for. To this end we have held demonstrations in pruning, spraying and fertilizing in the different sections of the State where the fruit interest was neglected. We are glad to state that as a direct result of these demonstrations, spraying outfits have been purchased and quite a number of the neglected orchards have been pruned and fertilized, thus bringing them into profitable production. These spraying demonstrations have proven to the skeptical that the trypeta (railroad worm) can be controlled by the arsenical sprays if applied early in July, to be followed by a second spraying fifteen days later.

Inspection

We have inspected 129 nurseries the past season. The most serious disease that we have to contend with is Mosaic in raspberry bushes. In some cases we have had to make three inspections of the plot during the growing season from the fact that the virus is carried from plant to plant by the aphids and other sucking insects, hence the necessity of keeping a close watch over those fields from which plants are being sold. We have found but little trouble with the strawberry plants and as a whole they have passed inspection very creditably. Since some of the states have passed laws compelling the shippers to have an inspection tag attached to each consignment of dahlias and gladioli we have been obliged to inspect those fields when called upon to do so.

Since blueberry growing has become such an important industry we have felt that we should endeavor to give assistance to this line also, when called upon. We have

advised about clearing land, burning old bushes and debris to get plots in condition for raking, and have instructed growers in preparing the berries for market.

We have given considerable time to insect control, especially to those who have home gardens and are not familiar with the pests that attack them. We have identified a great many insects that have been sent to the Department and given instructions in their control.

Many calls have come to us for assistance in beautifying the home grounds. We have responded to these and given suggestions for making the lawn, variety of shrubs, where and how to plant them, the perennials to use for the permanent flower beds and other hints along those lines.

We have assisted the growers of small fruits by recommending those varieties that were best adapted to their soils and environments. This has meant the difference between profit and loss in many instances. Another thing we have tried to impress upon them is the importance of properly grading and marketing the berries in clean, attractive containers.

Lecture work has made quite a demand on our time, having spoken 84 times to an aggregate audience of 9,742, and to reach them have traveled 6,467 miles.

The bee-keepers have had their share of troubles the past two years. We have cleaned up a number of cases of foul brood and responded to many calls for assistance and advice. Realizing the importance of bees in pollinating the blossoms of our fruits, we are always ready to render any aid to the bee-keepers.

Respectfully submitted,

G. A. YEATON,

State Horticulturist.

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, 1926 to July 1, 1928.

The live stock on the farms of Maine show to better advantage than in my last report. Three-year-old, two-year old and yearling cattle show an increase, but the great demand for Maine cows for replacements in southern New England states because of the reputation our cattle have for freedom from tuberculosis has caused a decrease of over ten thousand in our cow population, and there is not enough increase in the young stock to offset this. The total figures on all classes of cattle show a decrease of 7,278 head in the past two years. In the past six years cattle have decreased 47,383, sheep 5,410 and swine 2,831. I wish all good farmers in Maine that are interested in live stock could see the advisability of raising more good, grade heifers. A great deal of time, money and effort has been expended in conducting a better bull campaign, but this work is all wasted if the heifers of these better bulls are all sold when calves. There is at the present time no market for hay in any quantity, and there is no likelihood that there will ever be again, but there is a great demand for cows, and dealers within and from without the State are scouring every section for every available cow that is giving a good quantity of milk. Because of this demand, the price of cows has advanced in many localities fully 50%, many of the strictly fancy grade cows bringing from one hundred and fifty to two hundred dollars. With good pastures in summer and early cut hay, especially clover, to feed growing heifers, they can be developed without any great amount of grain being fed. In this way, under favorable conditions, a heifer can be developed to saleable age

with no large expenditure of money. And at the present range of prices, that, by the way, are bound to hold for several years to come, there is no brighter outlook from my viewpoint than the raising and developing of the right kind of grade cattle. I mean by "right kind" no special breed, but heifers selected from high-producing dams and sired by "better bulls," and so grown that when matured they will be of normal size, or above, for the breed, and in good flesh. It does not matter so much about the breed, as each breed has its friends, and if you have the quality you can find a customer no matter what the breed.

I know that with the prevailing high price of meats of all kinds it is a temptation to turn many very desirable heifer calves for veal. Then again, there is the unaccountable practice of many farmers to sell a calf when it is a week or ten days old (sometimes younger), to a cattle dealer for whatever he will give. These calves are, in most cases, sent along to Brighton and what becomes of them I do not know, but I do know that the farmer gets comparatively little for them, and it seems like an inexcusable waste. The only reason that can be given for such sales is that it is the easiest way.

Beef Prospects

There has been for several years a growing interest in the production of beef, and the beef breeds here in Maine. There are many places in the State where beef can be raised to advantage. As with the raising of dairy cattle, good pastures and early cut hay containing a good percentage of clover will grow any of the beef breeds with very little, if any, grain. Then when the animal is ready to fit for market, either as baby beef or an older animal, a short period of heavy grain feeding will put it in prime condition. Farmers who are interested in beef have been watching with satisfaction the steady increase in beef prices. There may be slight seasonable fluctuations in prices, but the trend will gradually be upward. It cannot be otherwise. And many farmers with foresight are seeing an opportunity in this direction and are laying the foundation for a herd of some one of the beef breeds.

The following is a comparative table showing the increase or decrease in the various classes of live stock:

Number of cows	1925	139,823
	1926	134,440
	1927	129,745
Decrease in two years		10,078
Number of oxen	1925	3,119
	1926	2,783
	1927	2,579
Decrease in two years		540
Number of three-year-olds	1925	15,573
	1926	16,532
	1927	17,304
Increase in two years		1,731
Number of two-year-olds	1925	25,335
	1926	26,825
	1927	26,448
Increase in two years		1,113
Number of one-year-olds	1925	34,017
	1926	32,731
	1927	34,513
Increase in two years		496
Number of sheep	1925	78,641
	1926	84,151
	1927	81,567
Increase in two years		2,926
Number of horses	1925	91,806
	1926	87,498
	1927	84,572
Decrease in two years		7,234
Number of colts, all ages	1925	1,523
	1926	1,343
	1927	1,251
Decrease in two years		272

Interstate Shipments

I have spoken of the increasing demand in other states for Maine cows. The following figures show how this demand has increased during the past five years:

Year	Exported
1923	4750
1924	5526
1925	7258
1926	8260
1927	9409

Up to 1927 most of our cattle found a market through Maine dealers in Brighton, but during the past year a change has been taking place. Cattle buyers from other states, more particularly Massachusetts, Connecticut and Rhode Island, are coming direct to Maine and personally directing the buying of their cattle. I find the reason for this is not usually because they expect to buy cattle cheaper, because, in most cases, they are willing to pay the farmer what they have previously paid the dealer in Brighton, but because by buying and shipping direct in clean cars and from clean loading places and avoiding Brighton Stock Yards, where many a disease-free cow has picked up the germs of infection, that such cattle will stand up under a re-test for tuberculosis a year or so later to considerably better advantage.

The following table shows where the cows shipped out of Maine during the past two years have gone:

	1926		1927
Massachusetts (mostly Brighton)	7550	Massachusetts	5967
Connecticut	100	Connecticut	2367
Rhode Island	373	New Hampshire	192
New Hampshire	180	Rhode Island	496
Vermont	24	Canada	108
West Virginia	15	New Jersey	43
New York	5	Porto Rico	10
Iowa	4	New York	9
Nebraska	3	Pennsylvania	3
Ohio	2	Ohio	2
Indiana	1	Missouri	1
Montana	1	Vermont	209

Tennessee	1	Minnesota	1
Florida	1	California	1
	<hr/>		<hr/>
Total	8260	Total	9409

Milk and Dairy Inspection

There has been no change in the personnel of this branch of the division. Mr. Clayton P. Osgood, whose report is submitted with this, has continued as inspector and he has been assisted throughout the two years by Gordon W. Drew. Both have given tireless effort in the discharge of their duties. I will not go into details on this subject, as it would be a repetition of Mr. Osgood's report.

Sheep Husbandry

While figures show that there has been an increase of 2,926 sheep in the past two years, yet unfortunately 1927 shows a decrease of 2,584 over 1926. This is accounted for to considerable extent by the ravages of dogs, bears and other wild animals. During 1927 there were 2,749 sheep so killed, or 165 more than the decrease shown. The appended report of Charles H. Crawford, sheep specialist, of this division, will give his work in detail.

Live Stock Sanitary Work

The figures given below will show in a concise way the increase of work accomplished in tuberculosis eradication during the past seven years, or since it has been under the direction of the Department of Agriculture, also the steady decrease in the amount of disease found.

	No. of Cattle tested	No. Reactors	Percentage
July 1, 1921 to July 1, 1922	50,727	1,288	2.53
July 1, 1922 to July 1, 1923	64,709	1,197	1.84
July 1, 1923 to July 1, 1924	71,624	1,074	1.47
July 1, 1924 to July 1, 1925	75,695	1,122	1.48
July 1, 1925 to July 1, 1926	90,535	1,011	1.11
July 1, 1926 to July 1, 1927	106,627	914	0.8
July 1, 1927 to July 1, 1928	143,934	1,051	0.73

The test work for the past two years has been practically all area work in which I have employed local accredited veterinarians to some extent while working territory adjacent to them. This accounts for the extra large number of cattle tested in the past two years. The personnel of the State veterinary inspectors remains the same as for several years, Dr. C. W. Purcell of Biddeford, Dr. E. B. Beals of Greene, and Dr. R. E. Libby of Richmond.

Modified Accredited Areas

In my report of two years ago I described in detail the Modified Accredited Area Plan and reported that Piscataquis County had been quarantined and the cattle tested in the fall of 1925. And at the time my last report was written, the test work was nearing completion in Penobscot County. That county was finished and Somerset County completed during 1926. In 1927 nine counties were quarantined and the work completed in seven of them. In Androscoggin and Kennebec Counties the work was not completed until early in 1928. Last March Cumberland County was placed under quarantine and in April Oxford County was added to the quarantined area. The test work has now been completed in these two counties, although they have not as yet been declared modified accredited areas by the Federal Bureau because the reactor herds in Cumberland County have got to be re-tested before this county can be recommended for accreditation, the percentage of disease on first test in that county being 0.71 and it has to be reduced to less than one-half of one per cent (0.5%), and we wish to recommend the two counties at the same time. Aroostook County was quarantined July 9, and work in that county is being pushed at the present time as rapidly as possible.

Following are the counties that have been quarantined and tested, and all have been declared modified accredited areas with the exception of Cumberland and Oxford:

County	No. of Cattle	No. of Reactors	Percentage
Androscoggin	14,399	52	0.36
Cumberland	17,029	121	0.71
Franklin	14,484	68	0.46
Hancock	7,750	13	0.17

Kennebec	24,965	76	0.3
Knox	6,604	13	0.19
Lincoln	7,500	32	0.42
Oxford	18,125	74	0.4
*Penobscot	29,578	259	0.87
Piscataquis	7,375	32	0.44
Sagadahoc	4,194	14	0.33
Somerset	22,330	109	0.48
Waldo	14,827	28	0.19
Washington	8,133	1	0.001

*The percentage of disease was more than 0.5% on first test, therefore the reactor herds had to be re-tested before the county could be recommended for accreditation.

Because of the higher percentage of disease in York County, it has not been advisable to place a quarantine on the whole of this county at one time, but I have quarantined groups of towns. In June, 1927 seven towns were quarantined, namely: Old Orchard, Saco, Biddeford, Buxton, Dayton, Limington and Hollis, and all the cattle tested. There were 3,487 cattle tested in this group and 85 reactors found, or 2.43%. In January and February, 1928, another group of six towns were placed in quarantine, namely: Kittery, Eliot, York, South Berwick, Berwick and North Berwick. In these towns 3,112 cattle were tested, 281 reactors found, or 9%. There is no question but that the last named group contained the largest percentage of tubercular cattle of any area in Maine. All herds in the quarantined towns in York County where disease was found, have been re-tested and on this re-test 39 reactors were found against 366 on first test. Premises where diseased herds were kept have been thoroughly cleaned and disinfected to the satisfaction of the veterinaries working in that county before payment for reactors was made. Work in York County is still progressing. The towns of Parsonsfield, Cornish, Newfield, Limerick, Waterboro, Acton, Shapleigh, Lebanon, Sanford and Alfred will be quarantined July 9, 1928, and are being tested by three veterinarians at the present time. I expect to have York County once covered under quarantine by January 1, 1929, after which I hope on second test of the whole county, it will also qualify for a modified accredited area.

What This Test Work Means to Maine

Very few realize the actual standing of the State compared with the other states regarding bovine tuberculosis eradication, and its effect on the demand for and price of Maine cattle. Maine is the only state in New England having a whole county in the modified accredited area standing, and Maine has twelve such counties and two more that will be added before this report is printed. In other states, especially the southern New England States where the war against bovine tuberculosis is going merrily on, there is a great demand for cattle for replacements, and naturally they turn to the State where there is the least disease, and Maine is that State. Some smart Government Alec has figured out that by 1931 there will be a surplus of dairy cattle. Do not be deceived by such unreliable information. When 1931 comes, you will find a good demand for your cows at just as good, and perhaps better, prices, while the live stock prophet referred to will be in seclusion.

The following figures show the work accomplished by this division during the two years ending July 1, 1928:

Work Accomplished from July 1, 1926 to July 1, 1927

	Cattle	Reactors	Percentage
Tested by co-operative men and accredited veterinarians	100,440	722	
Tested by practitioners (not accredited)	6,187	192	
Tested for interstate shipment	9,409	73	
Total	116,036	987	0.85
Amount paid for condemned cattle	\$48,596		
Received and turned into Treasury for salvage	\$17,889.90		
	Number		Amt. paid
Maine cattle tested and condemned at Brighton	9		\$418.48
Number of cattle brought in from other states on permit	304		
Number of cattle permits issued	127		
Number of horses brought in on permit and examined for glanders	6,020		
Number of swine brought in on permit	2,347		
Number of swine permits issued	1,175		

Work Accomplished from July 1, 1927 to July 1, 1928

	Cattle	Reactors	Percentag ^e
Tested by co-operative men and accredited veterinarians	122,897	898	
Tested by practitioners (not accredited)	9,341	120	
Tested for interstate shipment	11,696	33	
Total	143,934	1,051	0.73
Amount paid for condemned cattle	\$65,988		
Received and turned into Treasury for salvage	\$27,718.78		
Maine cattle tested and condemned at Brighton		Number	Amt. paid
Number of cattle brought in on permit from other States and Canada		2	\$81.51
Number of cattle permits issued			780
Number of horses brought in on permit and examined for glanders			161
Number of horse permits issued			4,021
Number of swine brought in on permit			341
Number of swine permits issued			1,639
			829

Other Contagious Diseases of Animals

Glanders in horses is practically a disease of the past. Of course it has to be watched, and during the past two years several cases have been investigated, but in only two cases has the disease been found. In the year ending July 1, 1927, one horse was found diseased, and in the year ending July 1, 1928, three horses were found diseased. In both cases the animals were destroyed and the premises thoroughly cleaned and disinfected.

Hog Cholera is not a serious menace, although as long as city garbage is fed, there will be infection and the only way owners that use garbage, or are in an infected area, can protect their hogs, is to have them immunized with the serum and virus treatment. Hog owners generally realize this and the situation is largely handled by the owners and the veterinaries.

Rabies. There have been no cases of rabies reported in the State of Maine for many years until within the last year or so, but I am sorry to say that within the past twelve or

fourteen months there have been several. This is not to be wondered at considering the prevalence of the disease in some sections of New England. The most serious outbreak in the State was in Bangor, where one child died of the disease and several dogs and one cat showed positive to laboratory examination. Great credit should be given the local health department of Bangor for the immediate control and stamping out of this serious outbreak.

Hemorrhagic Septicemia. Apparently this disease has been more prevalent in Maine the past year than ever before, although it is my belief that many of the sudden and mysterious deaths of the past, that have been attributed to forage poisoning, anthrax, etc., were in reality this disease. Last winter there were some sections where it was quite prevalent and buyers would not ship animals until they had been protected by inoculation, and many individual herds had to be treated also. During the winter there were in many cases pneumonia symptoms in connection with the disease. Unless it is treated by a skilled veterinary in its early stages it is usually fatal, but immunization seems to be a pretty sure preventative. It develops very rapidly and oftentimes the animal is dead within twenty-four hours after the first symptoms are noticed. If an animal dies suddenly, and especially if this is followed by other deaths, the owner should get in touch with this department at once, and I will get a veterinary to investigate, and if the trouble is found to be of a contagious nature, I will assist in every way possible to prevent further loss.

Respectfully submitted,

H. M. TUCKER,

Chief, Division of Animal Industry.

REPORT OF STATE DAIRY INSPECTOR

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

I herewith submit my report as dairy inspector for the two-year period ending July-1, 1928.

There has been a marked improvement in the milk supply of the State during the past two years. Many samples of milk and cream have been taken for analyses and many

more inspections of dairies were made than in the two preceding years. The fact that we have been able to make so many inspections seems to have stimulated interest among the producers and dealers to a point where most of them are doing their best to produce milk of the highest quality.

Milk and Cream Analyses

One thousand four hundred and twenty-five milk and cream samples have been purchased and analyzed to ascertain whether or not they complied with the State standards. Twenty-one dealers and producers paid fines for the sale of milk which did not conform to the standards of strength and quality established by Statute. One hundred and sixty-five letters have been written to dealers, producers and stores calling attention to the sale of milk which was either dirty or partially skimmed. Sixty-one dealers, producers and restaurant owners were cited in for civil hearings, but forty of these were simply warned and their cases placed in abeyance.

Many of the samples which were found to be below standard were purchased in restaurants or stores where the milk was being handled in cans. This practice has been discouraged until at the present time nearly all the restaurants and stores handle their milk as it is bottled on the farm.

Inspection of Dairies

With the help of the local milk inspectors, two thousand eight hundred and fifty-three dairies have been inspected during the past two years and many re-inspections have been made of these places. In most cases it has been found that the dairymen are doing their best to produce milk in a sanitary manner. No less than one hundred and fifty dealers have begun to use steam for sterilizing their utensils during the past two years.

The United States Department of Animal Industry score card has been used with very good results and the average score of all dairies inspected in Maine during this period is fifty-nine and three-tenths per cent, which I con-

sider a good average score. About five hundred dairies supplying milk to the many summer camps have been given inspection. All time possible has been given to this work so as to insure a safe milk supply for the thousands of boys and girls spending their summers in this State.

One license has been revoked and at the present time five others are pending, and one dairyman has been refused a license.

Creamery Inspection

Two hundred and seven excluded creamery patrons have been reinstated with the Boston Board of Health through this Bureau. In answer to fifteen complaints made by patrons of the different creameries, three hundred and fifty composite samples have been carefully checked. In addition to this, seventy-five creameries have been given regular inspection and all samples checked as often as possible.

In cooperation with the College of Agriculture at the University, six creamery men have been given an examination to determine whether or not they were competent to operate the Babcock test.

Nine creamery men have been ordered to have their glassware marked at the Maine Experiment Station at Orono, and three sets of scales have been condemned.

Local Milk Inspectors

More work than usual has been done with the local milk inspectors and I have found that they are more than ready to cooperate with me at all times. I am very grateful to them for the assistance I have received and wish to express my appreciation. By working with the local inspectors, it has been possible to keep in much closer touch with the milk dealers themselves, which is indeed, a great help in inspection work.

Meetings and Exhibits Attended

I have delivered short talks on the production of sanitary milk at several Pomona Grange meetings and at a number of the subordinate granges. Under the direction of Mr.

Washburn, Commissioner of Agriculture, I have arranged a dairy exhibit at the Eastern States Exposition at Springfield for the last two years.

During the present year, I was very fortunate to be able to attend the World's Dairy Congress held in London where a number of interesting speakers of international importance were on the program.

In closing I wish to express to the members of the Department my appreciation of their kindness and helpfulness during the last two years.

Respectfully,

C. P. OSGOOD.

REPORT OF SHEEP SPECIALIST

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

I herewith submit my report as sheep specialist for the two-year period ending June 30, 1928.

Many farmers once having fine flocks fell to the tremendous "get rich quick" temptation of potato growing, sold their sheep and devoted the proceeds to purchasing fertilizer, tools and equipment. After years of hard work they found themselves with sorrowful experience, broken-down and worn-out equipment, neglected fences and fat mortgages, but without sheep—the source of steady and sure income.

Our farmers have found that the recent years of inflated prices and short working hours, together with an overloaded, expensive equipment, have contributed largely to the depletion of our farm live stock, and now find the farm income inadequate to take care of the overhead.

Maine farmers are harvesting a large crop of hay with no market that will pay cost of production and harvesting, and only a small per cent. of them have sufficient sheep and cattle to convert it into cash.

Owing to an ever-increasing demand for our high-producing, disease-free live stock, our farmers are unable to repurchase at prices they received, with the result that live stock continues to leave Maine farms to enrich farmers of other states.

The sheep industry of Maine is looking much better than at any time during the past few years, which is evidenced by a steady increase in demand from many sections, also the opportunity for going into the sheep business on a large scale is recognized by sheep men from other New England and Western states. Many letters inquiring where large tracts of land are for sale, for marketing facilities, etc., are received. Also, personal interviews by others seeking an opportunity to raise sheep on a large scale, show that sheep men outside our State recognize the wonderful chances for sheep farming here.

There are many farmers with small flocks realizing an annual net profit of 100%, and no one familiar with the industry questions the possibility for a net profit of at least 75% with normally large flocks, when good care, management, and selection is practiced.

Sheep provide a steady and sure semi-annual income that the owner can use as a basis for planning his farm program, and are the only farm animals that can be kept entirely on the products of Maine farms and return satisfactory profits.

Their requirements for housing and equipment are inexpensive, labor requirements are slight, especially when demand for the same is so valuable in producing hoed crops, which, in view of an unsatisfactory farm labor situation, appeals to our farmers strongly.

During the past year I have widened my field program by creating and attending more sheep meetings, visiting sheep farms, advising in more careful selection of breeding ewes, also ewe lambs to replace discarded ewes with the idea of materially increasing the per cent. of income with the same number of animals, also stressing the advantage of greatly increased profits by using pure bred sires of merit, which apparently is bearing fruit as there is a greater demand for them this season than in the past.

Wool has maintained a more satisfactory level of prices during the past few years, which, together with an increasing demand for lamb at good prices, gives the sheep industry a greater money making prospect than ever before.

Reports received from all the wool producing countries indicate that there is no surplus wool beyond the normal need of the ever-increasing population which indicates a steady demand at satisfactory prices.

Economy of lamb for meat diet in families is recognized as never before, which causes an ever-increasing demand that gives promise of a good market for many years to come.

There are a few sheep men in our State who specialize in hot-house or early lambs for mid-winter sale with very satisfactory financial results.

The supply of early lambs for February and March deliveries are far short of the demand and warrants more farmers in entering this line of specializing with sheep.

Our surplus hay could be marketed through sheep, with a greater return than in any other way, and sufficient manure returned to maintain soil fertility.

Boys and girls are becoming interested in sheep as never before and everything possible should be done to encourage and advise them in getting started with good producing, foundation stock, also, assisting in care and management so the financial results will encourage them to greatly increased activities with sheep.

The grazing season of 1927 being unusually rainy, there was a pronounced development of parasitic trouble among flocks which, with much late-cut hay, caused a greater per cent. of losses than for several years. Requests for assistance in eliminating these troubles have been greater in every section than at any time since 1918, and I have devoted much more time to this work than usual, having been called to one hundred and nine farms where two thousand, three hundred sheep and lambs have been inspected and treatment advised.

Assistance has been given beginners in planning and building the necessary equipment to protect the health of the sheep and in keeping the fleeces free from straw, chaff, etc. There has been a considerable increase in the number of beginners. Others who once had sheep have come to realize the mistake in selling the entire flock from the farm and now are re-purchasing in various numbers.

The sheep industry, State-wide, is giving promise of a substantial increase in numbers and with assistance in purchasing, together with proper instruction in care, breeding and management, we can reasonably expect a substantial increase in farm income.

It is regrettable that each year many experienced sheep men living in the northern sections, and those near large villages and cities, are forced to entirely abandon their flocks because of lack of sufficient and well-enforced laws for protection against bears and dogs. While it is true, the State makes liberal adjustments on such losses, it is equally true that the price obtained by the farmers does not replace the sheep killed nor the loss in income during the remainder of their producing life.

Respectfully,

C. H. CRAWFORD.

REPORT OF CHIEF OF THE DIVISION OF MARKETS

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

The biennial report of the Division of Markets for the period July 1, 1926 to July 1, 1928, is submitted for your consideration. During this time the work of the Division of Markets has increased materially over the preceding biennial period. This has largely been brought about through increased interest in better grading and standardization of farm products. The regular full time personnel has remained practically the same, being the Chief of the Division with one assistant and clerk for general work. Shipping Point Inspection of potatoes has nearly trebled, consequently, the extra work of making the collection of fees at the close of the season, as well as getting things in readiness at the beginning of the succeeding season, has made it necessary to put the head inspector and the clerk at Caribou on practically full time.

Crop and Market Information

The plan of cooperating with the other New England States and the United States Department of Agriculture in assembling and distributing information about crops and live stock has been continued. The work grows in popularity each year on its merit as an aid to farmers and business men in planning their operations from year to year. The annual Crop Review is issued early in February, which gives a complete summary of the principal crops of the state by counties. Much of this statistical matter is presented in a more easily understood form by the use of graphs and charts, that the comparison of various values and changes of value from year to year may be seen at a glance. With the increasing competition from Prince Edward Island in the certified potato deal it was thought best to add the acre-

age and yield figures from this Island Province of Canada, as well as New Brunswick and Nova Scotia.

The figures secured from the U. S. Bureau of the Census covering the 1925 Agricultural Census by towns, has been published in bulletin form. The publication was done in cooperation with the Maine Agricultural Experiment Station in order to reduce the cost. Professor Charles H. Merchant prepared several maps showing at a glance the location and extent of various branches of Agriculture in the different towns of the State. If this work by towns can be repeated for the next few census, valuable comparisons can be made as to the trend of certain types of agriculture in each town of the State.

A collection of dairy statistics from the large milk companies, creameries and cheese factories of the State has been brought up to date each year with comparisons of the preceding three or five year period. A note of warning is revealed from these annual reviews which seem to show a steady decline in the amount of dairy products being sold. While the Division of Markets is particularly interested in marketing problems it is, nevertheless, true that decreasing volume of any product means increased marketing costs. Therefore, the production of farm commodities is vitally linked up with its marketing.

For several years repeated requests have come to the Department of Agriculture for reliable figures on the extent and value of the blueberry pack in Maine and during 1926 this work was taken up and repeated again after the 1927 pack was concluded. Following is a summary of the statistics secured and it should be said to the credit of the blueberry packers that in 1927 they made a 100% report.

The 1927 pack of blueberries was considerably larger than in 1926 and gross returns to the farmers increased accordingly. The amount received by producers being \$756,851 compared with \$610,581 the year before. The following table gives some interesting comparisons.

	1924	1925	1926	1927	4 yr. av.
Number bushels bought					
by canners	98,473	157,272	169,136	239,666	166,098
Price paid per bushel	\$3.00	\$3.37	\$3.61	\$3.16	\$3.28½

Number cases No. 10					
canned	86,001	146,694	150,244	222,812	151,438
Number cases No. 2					
canned	17,356	21,971	33,729	47,119	30,044

Cooperation

The Grange Stores and Farmers' Unions which have now been organized many years, on the whole are showing a healthy condition and there have been a few notable examples of persistent and courageous efforts among these Unions. As a result of the sudden fall in prices in 1919 and 1920, several of the Unions were confronted with staggering deficits.

At the time several gave up the struggle entirely and distributed the losses among their members, others took up the burden and now have the satisfaction of having wiped out their deficit. Two striking examples of those who suffered the most heavily and still were able by good management and the loyalty of its members, to overcome their financial losses are Bangor and Norway, having a loss approximately of \$24,000 and \$20,000 respectively. On June 19, 1928, over one hundred of the stockholders of the Bangor Union met at their Grange Hall and had a jubilee dinner over the fact that their deficit was wiped out and the balance sheet showed a surplus of a little over \$2,000. The Norway Union has also prospered and in its prosperity has extended its activities by establishing a branch at Harrison, which is serving that community very satisfactorily in the distribution of grain. Along with these bright spots come the failure of a Union or Grange Store here and there from various reasons, chief among which are the extension of too liberal credits and the development of factions in the memberships which too often results in frequent changes of management. In many cases the manager is inexperienced and eventually the Union pays for the inexperience of the new manager. These two points suggest the need for all the Unions considering seriously the proposition of binding themselves together into a chain store system. This idea is further suggested by the fact that already the chain store plan is beginning to develop in the local distribution

of grain. Should this plan become as generally used in the distribution of grain as it has already become in the distribution of groceries the results may well be as disastrous to the local grain dealers and Farmers' Unions as it has already proven to the local grocerymen who have maintained expensive credit and delivery systems.



Apparently the future holds continued keen competition in the distribution of grain, not only from the probable growth of chain stores, but also the continued increase in the distribution of grain from the car door. Comparison of the expense of distribution through local grain stores in

New York conducted on similar plans to our Farmers' Union, reveal that the average expense is around 11%. In this overhead cost it appears that two or three per cent may be laid directly to bad debts, and interest charges on credit accounts. Over against this overhead one of the largest car door distributors in New England, reports that their average country expense is around 3%. It is needless to pursue this comparison further as the figures quoted plainly reveal that there are no exorbitant profits made in the distribution of grain.

The Turner Centre System which is now entirely in the control of its patrons, has passed through a period of readjustment made necessary by a too rapid expansion and for the year closing in December, 1927, showed a substantial increase in its net profit over the year preceding. Through the efforts of the New England Commissioners of Agriculture, a more stable condition has been created in the Boston Milk Market and there is no reason why Turner Centre System should not benefit along with other milk dealers from this stabilization.

The record of the two years would not be complete without mentioning the passing of the Maine Poultry Producers' Association. Several factors entered into this, among which might be mentioned the starting in business of the Association at the flush period of the year when everything was in favor of the buyer for getting his supplies, and conditions entirely against the seller, so that the Association was unable to return to its members prices comparable with what commission men were paying. Later the members withdrew their shipments and the volume was so reduced that the overhead rapidly created a deficit. In settling the affairs of the Association, the members who withheld their shipments have been asked to settle their proportional part of the deficit. Naturally, this has created a great deal of hard feeling and dissatisfaction, but in the end it is hoped the lesson of better cooperation may have been learned. The members at any time were absolutely in control of the organization and could have called a meeting at which, had they been dissatisfied with the management or Board of Directors, changes could have been made, or if, in their

judgment, the business was impractical, it could have been discontinued long before it was. To sum up briefly, the purposes of cooperatives are to perform service for the producer which, hitherto, other agents have performed. Naturally, if farmers propose to perform these services for themselves, they must not only expect to reap whatever legitimate profits might come from performing this service, but also to assume the necessary speculative risks and overhead expenses.

The service rendered by the Division of Markets for so many years in furnishing tried plans for cooperative organizations, as well as assistance in bookkeeping and the preparation of balance sheets for cooperative organizations, has been continued during the past two years.

Lectures and Demonstrations

The work carried on with three Fruit Growers' Associations for the purpose of determining the costs of packing and the practicability of making the grading of apples more uniform, was completed in the fall of 1926, and since that time a complete summary of the three years' work has been issued in mimeograph form. Credit for the valuable information secured through this demonstrational work, belongs to Mr. Sturtevant who carried on practically all the field work connected with it. With the completion of this particular line of demonstrations, Mr. Sturtevant had more time for carrying on work with individual growers and handlers of apples. This has been particularly true during the 1927 apple shipping season, when the changes in the Maine Apple Law came into effect, which brought the grades in harmony with U. S. Grades for barreled apples.

The work with the Maine Sheep and Wool Growers' Association in assisting in their annual wool pool has been continued and the last of the 1927 pool is being assembled. Even as this is written, Mr. Sturtevant reports that the amount of wool is much larger than a year ago, and this is partly due, at least, to the fact that the Association is adjusting its system of payment for the 1928 clip, so that it will be paid

for within a very short time after the wool is delivered to the Association. Owing to the mild winter of 1927-1928, the demand for the finished products of the Association was much lighter than usual and this created a very embarrassing situation for the Association, as they were unable to make settlement for the 1927 clip until quite recently. Practically all their surplus is tied up in stock which is being carried over to the coming season. Thus very little of the present year's clip will be required for manufacturing purposes, and the most of it has been sold already to a Woolen Mill, the proceeds making possible an early settlement on this year's clip.

There has been a constant demand for Lectures on various subjects connected with marketing. The most popular subjects are those connected with the better grading or standardization of farm products which will be treated at greater length a little later in this report.

These talks were given by members of the Division before Granges, Farm Bureaus, Fruit Growers' Associations, Farmers' Unions, Churches and Service Clubs, as well as one lecture each before a class in economics at the University of Maine, and before the annual conference of agricultural teachers in secondary schools. In all, 198 meetings and conferences have been attended in the biennial period, with an average attendance of 45 or a total attendance of 8,930. In many instances, sets of lantern slides have been used to emphasize the subjects of Fruit Growers' Association work, the hopeful side of cooperative organizations and the factors which enter into the establishment of grades for farm products.

Advantages of Better Grading

The work commenced in 1921, known as Shipping Point Inspection of potatoes, has continued to grow and now has become practically self-sustaining, with over 2,000 cars inspected. The experience gained in the 1925-1926 season, demonstrated the value of the service to the shippers. The next year there was more general use of this service and during the 1926-1927 season, 5,567 carloads of potatoes were inspected, mostly in Aroostook County. In order to give the

shippers service in the various sections of the State, it was necessary to employ fifteen men on full time and during the rush season other men were employed on a per car basis. This latter plan was used where the demand for the service was too small to warrant a full time man. In 1927-1928 the demand for service at the smaller shipping stations was more insistent than ever, and at the beginning of the season when shipments were heavy, 21 men were employed. The average for the season being 18 full time men and two men on a per car basis. The season, as a whole, has been most satisfactory, the number of inspections being 5,573. This volume would have been much larger had the Cobbler variety of potatoes been up to their usual high standard of quality. Owing to climatic conditions, this particular variety developed a large percentage of Hollow Heart and when the shippers found that this defect was almost sure to throw their stock out of grade, they ceased using the inspection on Cobblers. The fact is that inspections of Green Mountains increased materially over the year before, thus a little more than offsetting the loss in inspections from the non-use of the service on Cobblers. The following table of the last two seasons' work shows the generally high standard of grading which is practiced by our Maine shippers.

How Inspected Maine Potatoes Grade

	Carlots in Grade	Carlots out of Grade	Carlots part in & Part Out Grade	Restricted Certificate	Reversals
1926-1927	5,298	229	40	510	16
1927-1928	5,248	237	88	668	14

To show how generally this service is appreciated by the potato shippers it may be well to mention that during the season of 1926-1927, 217 shippers used the service and in 1927-1928 this number was increased to 242.

The same fees, namely \$4.00 per car, plus actual travel expense of the inspector when away from his designated station have been maintained and the wisdom of the law making these into a revolving fund is again shown. The total appropriation for all work of the Division of Markets is only \$11,000, while the cost of rendering Shipping Point Inspection Service has been close to \$23,000 for each of the

last two seasons. Thus, while the Division of Markets is provided with an appropriation sufficient to do a reasonable amount of educational work and in starting Shipping Point Inspection, the actual cost of the service is largely borne by the shippers who receive the benefit. It takes considerable time to train the inspectors, assign them to their stations and get them at work inspection, then, of course, there must necessarily be two or three weeks between the time the inspection is made before the fees can be collected, carried through the books to the State Treasurer and become available for use in paying the inspectors' salaries. This creates the situation at times that less than \$300.00 has actually been available in the State Treasury for paying current bills for the Division of Markets. However, at the close of both the fiscal years ending June 30, 1927 and June 30, 1928, it has been found that shipping point inspections of potatoes has been more than self-sustaining. Therefore, as the law reads, the "fees shall be reasonable and as near as may be cover the cost of the service rendered," a rebate has been made to the shippers for this overcharge. In 1927 the rebate was fifty cents per car and in 1928 twenty-five cents per car.

While shipping point inspections of potatoes has given the movement for better graded farm products a big start in Maine, it was perhaps left to the New England Council to develop the public opinion which has resulted in a general interest for the establishment of grades and their application to many more farm products.

At the Western Maine Fruit Growers' Conference meeting at Auburn early in 1927, Mr. Lloyd S. Tenney, Chief of the Bureau of Agricultural Economics, U. S. D. A., delivered a masterly address showing the basic value of standardization. The sentiment crystallized at this meeting plus the interest of the Grange and Farm Bureau in the subject, resulted in the passage of the so-called General Standardization of Farm Products Bill by the Legislature. This bill in brief, authorizes the Commissioner of Agriculture, after hearings with the producers of farm products to promulgate voluntary grades on farm products. Under this law grades have already been promulgated for eggs. In the early effort toward establishing these grades it was recognized that uni-

formity of descriptions and interpretations would be highly desirable. With this in view, the marketing officials of all the New England States met and carefully discussed the U. S. grades and it was agreed that they would form the best basis for presentation to the producers at the hearings prior to putting out the voluntary grades. This practice proved very satisfactory and the egg grades now promulgated in all the New England States except New Hampshire are for all practical purposes identical with the United States grades.

Along with the establishment of grades, the general standardization bill recognizes the principle that the grades should be properly identified with brands or trade marks and again the New England Departments of Agriculture cooperating through their Division of Markets, have developed a trade mark which may be used on the best grades of farm products, a reproduction of which is given on page following.

The closest kind of cooperation has existed between the various New England States and the U. S. D. A. in developing uniformity in the interpretations of egg grades and arrangements are now complete for a four day training school at Providence, Rhode Island, conducted by an expert egg grader from Washington. This school will be attended by the Marketing Officials of New England, the Extension Poultry Specialists of the Colleges of Agriculture and at least some of the Pure Food Inspectors. It is hoped by this method to be able to accomplish the same uniformity that has been brought about in Shipping Point Inspection of potatoes where the last two seasons only 16 and 14 certificates, respectively, have been reversed out of a total of over 5,500 cars inspected each season. This desirable result was made possible only by the closest cooperation between State and Federal Inspectors.

The State Grange through its officials and Subordinate Granges, should be given a great deal of credit for the rapid progress which is being made in popularizing standard grades for farm products. An annual report on standardization has been presented at the State Grange the last two years. A general Marketing Conference was put across by the Grange at Auburn in May, 1927, and many programs of Subordinate and Pomona Granges have been devoted exclu-

sively to standardization. The spirit of cooperation has extended to the State Chamber of Commerce which has provided special space on several of its regional meetings for a discussion of the standardization program.

This report on standardization would not be complete without mention of the fact that the Maine Apple Law was brought in harmony with the U. S. grades for barreled



apples. From the fact that Maine actually ships into the larger markets a large percentage of its total commercial apple crop, it is much easier to be able to sell this crop if the

grade terms are in harmony with nationally recognized terms. Until this was brought about, it was almost impossible in case of dispute to adjust differences with the receiver satisfactorily, but now it is possible to secure government inspection and if this inspection sustains the inspection at shipping point, the receiver is bound to accept the shipment. The same plan was used in training three inspectors for apple work which is used in the potato region. The Federal Supervisor, Mr. Warren, was loaned to Maine from September 12, 1927 to March 31, 1928. He spent ten days in training the apple inspectors, both of the Division of Markets and the Division of Inspection, in order that there might not be any difference in their interpretations of the apple grades. The results have been most encouraging. The Division of Markets has cooperated with the Division of Inspection to the extent of detailing Mr. Sturtevant and two special men for educational work on the New Apple Law. Because of the small funds available, the Division of Inspection has been practically tied to strictly police work in the administration of the apple law. By supplementing this with the educational work of the Division of Markets, real progress has been made in showing the value of the Maine Apple Law in the better marketing of apples.

A total of two hundred, twenty-six growers were visited who cooperated with the Inspectors in packing their fruit according to the new regulations. These demonstrations brought a very interesting condition to light. The work was carried through until the apples were placed in the New England Cold Storage at Portland and it was discovered that during the 1926 season, forty-one carloads of apples from other States, mostly Washington and Virginia, were stored there for local distribution. This out of State fruit represented approximately \$58,000 and it hardly seemed right for so much money to go out of the State for products which could well be furnished from our own orchards, consequently, in the fall of 1927, Mr. Sturtevant took special pains to explain this condition to some of the better growers and as a result less than 50% as much out of State fruit went through the New England Cold Stor-

age as in the preceding season, Maine grown fruit taking its place.

It will probably require several years of demonstrational and educational work among the handlers of Maine apples before shipping point inspection is as generally used for apples as it now is for potatoes. There can be no question, however, but that this service will be of as much benefit to the apple handlers as it is to the potato shippers.

Miscellaneous

The weekly price list which furnishes producers with the general trend of feed and grain prices, hay markets, poultry, eggs, potatoes and various other farm products is now entering on its fifth year. Because of the cost of postage, no effort is made to enlarge the mailing list, but the first of each year notices are sent out and unless returns are made by the subscribers, the price list is discontinued. In spite of this revision of the mailing list, however, it remains practically constant at five hundred.

The Maine Farm Loan Commission makes frequent calls upon the Division of Markets for assistance in appraising farms of applicants for loans. While this loan fund in many instances is doing a vast amount of good, it is also true that the work of appraisal is more or less unsatisfactory. It is quite difficult to really size up the applicant in the short time which it is possible to spend on the appraisal work. Needless to say the type and energy of the applicant has more to do with the desirability of the loan than the actual value of the property itself. A total of eighteen appraisals have been made during the two year period.

During the year an almost complete set of the agricultural reports of the Department of Agriculture, since its organization in 1852, was discovered and returned to the Department. This was due to the courtesy of an elderly couple who had come into possession of the set, but felt that with their advancing years, the reports should be kept where they would be of service to the public. This was very welcome to the Department as in several instances only one copy of a particular year's report was left in the files.

Considerable time and effort of the members of the Division have been spent on exhibits showing better grading practices and marketing methods. At Farmers' Week held at the University of Maine in March, 1927, an exhibit was made showing actual prices paid by the consumers for different barrels of apples that actually appear on the Portland market. The object of the lesson was very striking and alongside this apple exhibit was shown a demonstration of the potato grades accompanied with specimens of defective tubers illustrating various grade defects. At the session of the National Grange in November, 1927, a portion of the exhibit used at the Eastern States Exposition the preceding September was set up illustrating the importance of the potato industry in Aroostook County. This included a miniature starch factory in operation, a typical potato warehouse. Supplementing this exhibit were county maps showing the value and relative importance of the crop and livestock products in each county. The exhibits at the Eastern States Exposition are maintained at their usual high standing. For the first time in September, 1927, the dairy industry of Maine was emphasized, showing its development from the home dairy of fifty years ago, where the kitchen was used as a butter and cheese factory. In this section of the exhibit Mrs. E. E. Additon of Auburn, actually made cheese as our grandmothers made it in a former day, then the next section showed the modern dairy room of the farm with electrical refrigeration and proper cooling equipment for the milk immediately after it came from the milking machine. From this room passing to the Country Milk Station were large pasteurizing, cooling and bottling equipment preparing the milk for shipment to the city consumers in the best possible condition. A fancy exhibit of Maine Butter and Dairy products was next and the section below was a sales booth at which Maine made ice cream and cheese were dispensed to the public. To show how valuable such an exhibit may be in selling the advantages of Maine farms to the outside world it is well to note the fact that during the six days which the exhibit was open to the public 161,000 people viewed it. This shows what a drawing card the State of Maine Building is to the patrons of the Eastern States

Exposition, when it is realized that the total attendance was only 280,000.

In concluding the report credit should be given to the members of the Division who have so loyally done the services which are expected of this Division. In Aroostook County the work of shipping point inspection has been carried on by a fine type of young men at the head of whom has been Mr. Vernon L. Palmer who has been with the service for six years. In the office at Caribou has been a very efficient clerk who is now needed practically on full time. The federal government has loaned to the Division a supervisor each year. Mr. Harsha filled the position for the 1926-1927 season and Mr. Warren for the 1927-1928 season. The work of the Division has also been made more efficient by the cooperation of the Grange and Extension Service as well as by the help of the other members of the Department itself.

Respectfully submitted,

C. M. WHITE,

Chief, Division of Markets.

OFFICERS OF AGRICULTURAL SOCIETIES

Name of Society	President	P. O. Address	Secretary	P. O. Address	Treasurer	P. O. Address
Central Maine Fair.....	Ralph A. Jewell	Fairfield	Dr. P. R. Baird	Waterville	Carl C. Piper	Fairfield
Eastern Maine State Fair.....	Frank W. Weeks	Bangor	A. B. Peckham	Bangor	G. L. Coffin	Bangor
Maine State Agri. Society.....	Dr. R. N. Randall	Lewiston	J. S. Butler	Lewiston	A. W. P. Cobb	Auburn
Maine State Pomological Society.....	E. W. Dolloff	Standish	E. L. White	Bowdoinham	F. E. Chase	Buckfield
Maine State Poultry Association.....	H. M. Tucker	Augusta	Chester T. Adams	Woodfords	Edna D. Smith	Portland
Andro. Poultry & Pet Stock Ass'n.....	Harry C. Greenleaf	Mechanic Falls.	Harry C. Crowley	Lewiston	I. F. Blaisdell	Auburn
Androscoggin Valley Agri. Society.....	John T. Lindley	Canton	C. G. Walker	Canton	C. E. Mendall	Canton
Greene Town Fair Ass'n.....	A. E. Odiorne	Greene	W. L. Mower	Greene	L. C. Mendall	Greene
Leeds Agricultural Society.....	S. B. Parker	So. Leeds	F. A. Thomas	Leeds Center	W. B. House	Leeds Centre
Caribou Fair Ass'n & Agri. Soc.....	Edgar W. Russ	Caribou	J. C. Briggs	Caribou	J. H. Marr	Caribou
Houlton Agricultural Society.....	J. C. Rose	Houlton	O. A. Hodgkins	Houlton	A. E. Carter	Houlton
Northern Maine Fair.....	Herbert W. Kitchener	Presque Isle	Clayton H. Steele	Presque Isle	M. S. W. Dingwall	Presque Isle
Bridgton Agricultural Society.....	Walter P. Dow	Bridgton	Fred S. Hanson	Bridgton	Carl T. Plummer	Bridgton
Cumberland Co. Agri. & Hort. Soc.	J. W. Sturgis	Portland	F. E. Moulton	Gorham	C. M. Foss	Portland
Cumberland Farmers' Club.....	A. B. Lawson	Cumberland Ctr.	H. H. York	Walnut Hill	Howard L. Winslow	Cumb. Ctr.
Freeport Poultry Association.....	C. I. Davis	Waterville	Luther G. Cushing	Freeport	A. W. Goodwin	Freeport
New Gloucester & Danville Agri. So.	John P. Witham	New Gloucester	C. L. McCann	New Gloucester	Lewis P. True	New Gloucester
Franklin County Agri. Society.....	Fred C. Luce	New Vineyard	Frank E. Knowlton	Farmington	Jarvis L. Tyler	Farmington
Franklin Grange Fair.....	Albert Russ	Bryant's Pond	G. W. Q. Perham	Bryant's Pond	Florence E. Cushman	Bryant's Pond
No. Franklin Agricultural Society.....	G. V. Blanchard	Phillips	H. H. Worthley	Phillips	H. E. Dunham	Phillips
County Agricultural Society.....	R. V. N. Bliss, M.D.	Bluehill	E. G. Williams	Pittsfield	M. R. Hinckley	Bluehill
Eden Agricultural Society.....	C. L. Shand	Bar Harbor	Geo. P. Fogg	Hull's Cove	Chas. F. King	Salisbury Cove
Hancock County Fair Assn.....	M. L. Adams	Ellsworth	E. W. Robinson	Ellsworth	E. F. Small	Ellsworth
Cochnewagen Agri. Society.....	C. H. Berry	Monmouth	W. E. Reynolds	Monmouth	R. L. Moody	Monmouth
Kennebec County Agricultural Soc.....	E. E. Peacock	Readfield	Louise Childs	Readfield Depot	Fred E. Walker	Readfield
Litchfield Farmers' Club.....	J. Elmer Purinton	R.17, Litchfield	E. M. Lapham	R. 17, Litchfield	Chas. E. Walker	R. 17, Litchfield
So. Kennebec Agri. Soc.....	Fred T. Sproul	Windsorville	Arthur N. Douglas	R. 9, Gardiner	Arthur N. Douglas	R. 9, Gardiner
North Knox Agri. Society.....	J. C. Creighton	Union	H. L. Grinnell	Union	M. A. Lucas	Union
Lincoln County Agri. Society.....	Geo. D. Pastorius	Newcastle	Edw. B. Denny, Jr.	Damariscotta	Edw. R. Castner	Damariscotta
North Oxford Agri. Soc.....	John F. Talbot	Andover	Roger L. Thurston	Andover	Fred A. Milton	Andover
Oxford County Agri. Society.....	Leslie E. McIntire	Ea. Waterford	W. O. Frothingham	South Paris	W. O. Frothingham	South Paris
West Oxford Agri. Society.....	Geo. H. Walker	Fryeburg	Olive L. Goldthwaite	Fryeburg	A. D. Merrill	Fryeburg
North Penobscot Agricultural Soc.....	F. L. Judkins	Springfield	I. R. Averill	Prentiss	O. O. Abbott	Springfield
Penobscot & Piscataquis Agri. Soc.....	C. J. Trickey	Corinna	C. R. Smith	Exeter	M. A. Peabody	Exeter
East Dover Grange Fair.....	Elwin Dow	Dover-Foxcroft	Marion Dow	Dover-Foxcroft	Eug. B. Smith	Dover-Foxcroft
Guilford Athletic Ass'n.....	S. J. Jackson	Guilford	R. D. Pearson	Guilford	C. S. Douglass	Guilford
Parkman Agricultural Society.....	Edwin H. Ayer	Parkman	Ruel W. Kimball	Parkman	Ernest W. Austin	Parkman

Piscataquis Valley Fair Ass'n	Edw. J. Mayo	Dover-Foxcroft	Frank W. Mason	Dover-Foxcroft	Frank W. Mason	Dover-Foxcroft
Richmond Farmers' & Mech. Club	Harry W. Douglass	Richmond	Mrs. Sadie A. Wood	Richmond	Mrs. Hazel K. Libby	Richmond
Sagadahoc Agri. & Hort. Society....	H. A. Rackley	Topsham	E. C. Patten	Topsham	I. R. Morrell	Brunswick
Embden Agri. Society	Dana C. Waham	R. 1, No. Anson	Grant Witham	Solon, R F. D. 2	Geo. W. Moulton	Solon, R F. D. 2
Norridgewock Agri. Society.....	Albert Blaisdell	Norridgewock	Roland E. Everett	Norridgewock	H. F. Tobey	Norridgewock
Solon Agricultural Society.....	W. R. Tuscan	Solon, R.D. 1	Joseph Matson	Solon	Leon M. Wyman	Solon
Somerset Central Agri. Society.....	Walter H. Hight	Skowhegan	Errol O. Chase	Skowhegan	Ralph T. Jenkins	Skowhegan
Somerset County Agri. Society.....	J. Frank Withee	Madison	C. O. Flanders	Madison	C. O. Flanders	Madison
Wesserunnett Valley Fair Ass'n.....	W. A. Dore	Athens	W. A. Dore	Athens	W. A. Hilton	Athens
New Belfast Fair Ass'n.....	James H. Cilley	Belfast	H. C. Buzzell	Belfast	James H. Cilley	Belfast
St. Georges Agri. Society.....	James J. Clement	Belfast	E. B. Bean	Thorndike	E. B. Bean	Thorndike
Tranquility Grange Agri. Society....	Parker Young	Lincolnville Ctr.	Lawrence Rankin	Lincolnville	I. O. Eugley	Lincolnville
Unity Park Fair Association.....	Nicholas Walton	Unity	C. W. Taylor	Monroe	J. O. Pillsbury	Unity
Waldo & Penobscot Agri. Society....	C. A. Palmer	Monroe	G. A. Palmer	Unity	F. M. Nickerson	Hartland
Washington County Agri. Society.....	E. S. Hill	Machias	G. W. Mawhinney	Machias	W. Plummer	Machias
Cornish Agricultural Ass'n.....	William R. Copp	Cornish	Leon M. Ayer	Cornish	Sam'l G. Sawyer	Cornish
Goodwin's Mills Grange Agri. Soc.	Benj. J. Goodwin	R. D. 4, Biddeford	Beatrice Duvall	Biddeford, R. D. 4	Byron A. Hills	Biddeford, R. D. 4
Shapleigh & Acton Agri. Society....	Ellsworth N. Murray	Emery Mills	Fred E. Young	Emery Mills	Lawrence E. Staples	Shapleigh Corner
South Berwick Poultry Ass'n.....	Gerald A. Lynch	So. Berwick	Earl W. Stevens	South Berwick	Charles N. Harvey	South Berwick
Waterboro Grange Fair.....	Wilber G. Roberts	R. D. 1, Alfred	M. E. Ricker	Waterboro	Freda L. Andrews	Waterboro
W. Kennebunk Fair & Agri. Soc....	Chas. H. Hall	Kennebunk	Amos D. Boyden	W. Kennebunk	Amos D. Boyden	W. Kennebunk

FINANCES, 1927

Name of Society	Amount received from State	Receipts for Membership	Receipts from Loans	Entry Fees for Poultry	Entry Fees and Trotting Purses	Gate Receipts	Receipts from All Other Sources	Total Receipts	Attendance Total
Central Maine Fair.....	\$2,500 00	—	\$1,800 00	—	\$871 00	\$17,793 60	\$4,223 08	\$27,187 68	13,862
Eastern Maine State Fair.....	2,500 00	—	—	—	2,250 00	17,343 30	7,952 95	30,046 25	23,128
Maine State Agricultural Society....	2,000 00	\$75 00	1,500 00	—	655 50	27,425 85	20,613 05	52,269 40	31,259
Maine State Pomological Society....	2,000 00	52 00	—	\$1,130 00	—	—	1,300 00	3,352 00	2,500
Maine State Poultry Association....	1,288 22	78 00	1,600 00	—	—	—	1,687 20	5,733 42	2,000
Andro. Poultry & P. Stock Ass'n	221 72	69 00	200 00	—	—	—	669 55	1,160 27	2,000
Androscoggin Valley Agri. Society....	177 88	1 00	200 00	—	402 50	1,680 00	867 48	3,328 86	3,360
Greene Town Fair Association.....	64 59	No report	—	—	—	—	—	64 59	—
Leeds Agricultural Society.....	83 21	No report	—	—	—	—	—	83 21	—
Caribou Fair Ass'n & Agri. Society..	332 16	No report	—	—	—	—	—	332 16	—
Houlton Agricultural Society.....	—	—	—	—	180 00	13,133 51	8,004 60	21,318 11	25,000
Northern Maine Fair.....	1,913 50	—	—	—	155 00	28,014 77	5,576 48	35,659 75	35,000
Bridgton Agricultural Society.....	205 51	—	—	—	735 00	2,768 50	1,366 15	5,075 16	5,899
Cumberland Co. Agri. & Hort. So....	965 17	—	—	—	1,173 00	5,388 45	2,670 86	10,197 48	7,184
Cumberland Farmers' Club	154 96	40 00	—	—	243 50	1,272 25	760 05	2,470 76	2,545
Freeport Poultry Ass'n	341 55	1 00	—	311 75	—	—	140 45	794 75	1,000
N. Gloucester & Danville Agri. Soc.	307 31	5 00	670 00	—	120 00	2,576 79	434 49	4,113 59	4,200
Franklin Co. Agri. Society.....	1,474 93	1,501 00	250 00	—	1,540 00	8,433 75	5,175 07	18,374 75	24,319
Franklin Grange Fair.....	48 62	No report	—	—	—	—	—	48 62	—
No. Franklin Agri. Society.....	88 08	400 00	—	—	200 00	595 11	—	1,283 19	2,000
County Agricultural Society.....	207 36	—	—	—	15 00	5,152 91	780 91	6,156 18	12,000
Eden Agricultural Society.....	81 55	No report	—	—	—	—	—	81 55	—
Hancock County Fair Association....	115 95	309 10	725 00	—	183 50	4,084 70	1,613 86	7,032 11	8,700
Cochnewagen Agri. Society.....	188 45	—	150 00	—	—	252 02	219 05	809 52	1,300
Kennebec County Agri. Society.....	97 94	1 00	—	—	297 50	1,200 50	269 05	1,865 99	2,500
Litchfield Farmers' Club.....	63 22	—	—	—	—	471 30	145 45	679 97	1,800
S. Kennebec Agricultural Society....	149 29	—	280 00	—	30 00	2,450 65	531 30	3,441 24	5,500
North Knox Agricultural Society....	274 60	6 00	—	—	270 00	5,024 88	2,202 93	7,778 41	12,000
Lincoln County Agri. Society.....	291 71	12 00	2,200 00	—	321 00	4,506 15	2,908 97	10,239 83	9,500
North Oxford Agri. Society	177 90	—	—	—	38 50	1,510 50	540 05	2,266 95	3,150

Oxford County Agri. Society.....	1,080 04	3 00	4,200 00	—	1,745 00	10,366 25	7,377 46	24,771 75	20,722
West Oxford Agri. Society.....	581 30	No report	—	—	—	—	—	581 30	8,200
North Penobscot Agri. Society.....	105 52	—	—	—	600 00	1,698 80	1,108 F6	3,512 83	2,500
Penobscot & Piscataquis Agri. Soc.	458 45	50 00	697 83	—	—	4,672 25	2,671 08	8,549 61	15,000
East Dover Grange Fair.....	31 01	No report	—	—	—	—	—	31 01	—
Guilford Athletic Ass'n.....	95 36	—	—	—	—	1,651 50	326 16	2,073 02	3,478
Parkman Agri. Society.....	46 00	No report	—	—	—	—	—	46 00	—
Piscataquis Valley Fair Ass'n.....	—	—	—	—	—	2,183 82	39 02	2,222 84	4,500
Richmond Farmers & Mech. Club....	149 98	No report	—	—	—	—	—	149 98	—
Sagadahoc Agri. & Hort. Society....	998 96	297 00	—	—	2,085 00	6,973 50	6,683 05	17,087 51	10,000
Embden Agri. Society.....	19 60	No report	—	—	—	—	—	19 60	—
Norridgewock Agri. Society.....	115 20	No report	—	—	—	—	—	115 20	—
Solon Agri. Society.....	96 59	No report	—	—	—	—	—	96 59	—
Somerset Central Agri. Society.....	1,488 27	140 00	2,000 00	—	392 00	17,888 85	7,003 33	28,912 45	32,500
Somerset County Agri. Society.....	107 64	No report	—	—	—	—	—	107 64	—
Wesserunett Valley Fair Ass'n.....	257 45	5 00	1,300 00	—	—	1,656 35	729 50	3,948 30	3,290
New Belfast Fair Ass'n.....	136 35	—	4,185 75	—	700 00	2,561 50	1,479 20	9,062 80	4,406
St. Georges Agri. Society.....	161 27	—	—	—	40 25	1,423 00	307 00	1,921 49	2,900
Tranquility Grange Agri. Society....	34 62	No report	—	—	—	—	—	34 62	—
Unity Park Fair Association.....	119 38	No report	—	—	—	—	—	119 38	—
Waldo & Penobscot Agri. Soc.....	184 54	—	—	—	490 00	2,645 50	133 25	3,453 29	5,000
Washington County Agri. Soc.....	—	—	750 00	—	—	2,264 75	428 25	3,443 60	4,500
Cornish Agricultural Association....	275 34	—	—	—	740 00	3,075 75	5,188 69	9,279 78	4,100
Goodwin's Mills Grange.....	104 70	No report	—	—	—	—	—	104 70	—
Shapleigh & Acton Agri. Soc.....	114 57	No report	—	—	—	—	—	114 57	—
South Berwick Poultry Association....	181 70	24 00	—	160 00	—	—	237 10	602 80	500
Waterboro Grange Fair.....	63 49	—	—	—	—	284 30	597 36	945 15	600
W. Kennebunk Fair & Agri. Soc....	37 60	No report	—	—	—	—	—	37 60	—
	\$25,360 28	\$3,069 10	\$22,708 58	\$1,601 75	\$16,473.25	\$210,425 6	\$104,962 04	\$384,600 61	363,902

COMMISSIONER OF AGRICULTURE

FINANCES, 1927 (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 Not Including Premiums and Gratuities	Value of the Property Belonging to the Society	Amount of Liabilities
Central Maine Fair	\$1,405 53	\$3,654 00	\$5,470 56	\$1,008 20	\$18,181 59	\$7,000 00	\$17,247 15
Eastern Maine State Fair.....	—	7,791 15	15,245 36	—	28,227 26	—	—
Maine State Agri. Society.....	2,626 61	9,650 00	32,514 63	6,872 62	58,129 29	143,279 00	32,000 00
Maine State Pomological Society.....	—	—	—	1,915 75	3,200 00	—	—
Maine State Poultry Association.....	84 40	—	1,539 27	93 75	4,556 35	1,049 97	1,600 00
Andro. Poultry & P. Stock Ass'n....	100 45	—	288 51	202 93	1,192 14	905 29	343 40
Androsoggin Valley Agri. Society....	92 00	552 50	1,696 08	—	2,743 08	5,500 00	4,590 00
Greene Town Fair Ass'n.....	No report	—	—	—	—	—	—
Leeds Agri. Society	No report	—	—	—	—	—	—
Caribou Fair Ass'n & Agri. Society	No report	—	—	—	—	—	—
Houlton Agricultural Society.....	—	4,952 00	9,788 34	4,054 64	20,615 33	29,255 61	2,750 00
Northern Maine Fair.....	1,497 94	4,975 00	14,449 10	9,883 44	38,462 03	75,000 00	5,000 00
Bridgton Agricultural Society.....	1,075 00	2,295 00	1,338 23	908 09	6,200 37	5,500 00	1,600 00
Cumberland Co. Agri. & Hort. Soc....	831 73	2,660 00	1,261 63	2,496 35	11,303 66	31,775 00	12,000 00
Cumberland Farmers' Club.....	165 54	900 00	374 40	183 23	2,041 42	4,500 00	—
Freeport Poultry Assn.....	50 00	—	297 18	—	918 93	1,000 00	154 10
N. Gloucester & Danville Agri. Soc.	150 50	1,036 50	1,390 26	696 39	4,102 75	3,200 00	—
Franklin County Agri. Soc.	2,862 75	2,310 00	2,407 34	3,232 25	16,193 96	46,000 00	—
Franklin County Grange Fair.....	No report	—	—	—	—	—	—
North Franklin Agri. Society.....	100 00	300 00	250 00	—	1,146 20	2,000 00	1,600 00
County Agricultural Society.....	211 20	1,355 00	526 24	1,235 00	3,883 69	5,000 00	—
Eden Agricultural Society.....	No report	—	—	—	—	—	—
Hancock County Fair Ass'n.....	150 00	1,406 00	4,851 78	717 67	7,529 20	32,301 31	21,000 00
Cochnewagen Agri. Society.....	—	55 50	73 02	188 57	783 02	—	200 00
Kennebec County Agri. Society.....	163 89	750 00	821 05	—	2,431 47	2,000 00	—
Litchfield Farmers' Club.....	175 00	—	189 23	12 50	884 98	1,000 00	100 00
So. Kennebec Agri. Society.....	5 00	560 00	588 68	919 53	2,623 54	2,500 00	—
North Knox Agricultural Society.....	1,740 50	1,174 00	3,207 44	787 13	7,808 06	7,000 00	—
Lincoln County Agri. Society.....	2,844 83	1,560 00	—	4,921 05	10,243 91	13,000 00	2,200 00
North Oxford Agricultural Society....	400 00	800 00	228 21	120 15	2,175 11	5,400 00	—
Oxford County Agricultural Society..	4,865 00	4,750 00	4,545 00	4,189 34	22,003 04	50,000 00	14,000 00

West Oxford Agricultural Society.....	No Report	—	—	—	2,295 00	—	—
No. Penobscot Agricultural Society	600 00	1,500 00	732 31	250 00	3,507 06	3,000 00	—
Penobscot & Piscataquis Agri. Soc.....	1,930 92	1,200 00	1,645 58	511 84	7,087 34	5,000 00	2,300 00
East Dover Grange Fair.....	No Report	—	—	—	—	—	—
Guilford Athletic Assn.....	—	—	—	776 09	1,276 04	2,500 00	—
Parkman Agricultural Society.....	No Report	—	—	—	—	—	—
Piscataquis Valley Fair Ass'n.....	193 39	—	1,123 36	456 50	2,192 75	7,500 00	2,500 00
Richmond Farmers and Mech. Club..	No Report	—	—	—	—	—	—
Sagadahoc Agri. & Hort. Society....	1,000 00	4,800 00	3,590 00	3,820 00	16,569 53	10,000 00	—
Embden Agri. Society.....	No Report	—	—	—	—	—	—
Norridgewock Agricultural Society	No Report	—	—	—	—	—	—
Solon Agricultural Society.....	No Report	—	—	—	—	—	—
Somerset Central Agri. Society.....	400 00	4,500 00	1,165 00	14,867 13	28,159 48	45,000 00	30,000 00
Somerset County Agricultural Soc...	No Report	—	—	—	—	—	—
Wesserunsett Valley Fair Ass'n.....	2,603 81	—	1,686 82	622 65	5,993 88	3,500 00	1,300 00
New Belfast Fair Ass'n.....	437 43	1,468 00	778 04	211 00	3,367 82	1,829 62	4,304 12
St. Georges Agri. Society.....	100 00	621 50	275 30	199 45	1,616 95	2,000 00	—
Tranquility Grange Agri. Society....	No Report	—	—	—	—	—	—
Unity Park Fair Association.....	No Report	—	—	—	—	—	—
Waldo & Penobscot Agri. Society....	175 00	1,250 00	678 14	300 98	3,026 32	6,000 00	3,651 36
Washington County Agri. Society....	692 75	804 25	1,308 75	—	3,443 00	400 00	750 00
Cornish Agricultural Association.....	1,090 00	3,200 00	1,610 00	—	6,884 75	8,000 00	5,000 00
Goodwin's Mills Grange Agri. Soc...	No Report	—	—	—	—	—	—
Shapleigh & Acton Agri. Society....	No Report	—	—	—	—	—	—
South Berwick Poultry Association	—	—	71 96	95 25	583 32	40 00	69 53
Waterboro Grange Fair.....	—	—	176 83	10 00	602 38	6,500 00	2,450 00
W. Kennebunk Fair & Agri. Soc.....	No Report	—	—	—	—	—	—
	\$30,821.17	\$72,774 90	\$118,166 11	\$66,759 52	\$864,186 00	\$575,435 80	\$168,709 66

COMMISSIONER OF AGRICULTURE

REPORT

OF THE

State Pomological Society

1926-1927

OFFICERS FOR 1926-1927

President

W. G. CONANT Hebron

Vice-Presidents

E. W. DOLLOFF Standish

A. K. GARDNER Orono

Secretary

E. L. WHITE Bowdoinham

T. E. CHASE Buckfield

*Executive Committee*THE PRESIDENT, FIRST VICE-PRESIDENT,
SECRETARY AND TREASURER, ex-officio

G. A. YEATON Augusta

C. M. CONANT Winterport

L. K. LEE Dover-Foxcroft

TRUSTEES FOR 1927*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*—N. D. Stanley Pittsfield*Waldo County*—C. C. Clements Winterport*Washington County*—Millard H. Wiswell East Machias*York County*—Katharine Perkins Limington

LIFE MEMBERS

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

Richards, John T.	Gardiner	Sturtevant, Robie	Hebron
Richardson, Herbert A., 82 West St., Woodfords		Sup. Maine Sanatorium Farm	Hebron
Ricker, A. S.	Turner	Taylor, Frank H.	Winthrop
Ricker, Fred P.	Turner	Taylor, Miss L. L. (Lakeside)	Belgrade
Roak, George M.	Auburn	Thomas, D. S.	North Auburn
Robinson, W. C.	North Anson	Thomas, William W.	Portland
Rogers, Mrs. Jeannette, No. Newburg		Thompson, A. E.	New Gloucester
Sawyer, Andrew S.	Cape Elizabeth	Thurston, Edwin	West Farmington
Sawyer, Charles F.	Hebron	Twitchell, George M.	Auburn
Saunders, Ernest	Lewiston	Verrill, Ernest	No. Raymond
Seavey, Mrs. G. M.	Auburn	Verrill, H. E.	Hebron
Sewall, W. F.	Bowdoinham	Verrill, Harry M.	Portland
Shaw, R. W. E.	Sebago Lake	Vickery, James	Portland
Shields, T. O.	Winterport	Walker, Charles S.	Peru
Skillings, C. W.	North Auburn	Walker, Elmer V.	Oxford
Smith, Frederick O.	New Vineyard	Waterman, Willard H.	East Auburn
Smith, V. N.	Buckfield	Waugh, F. A.	Amherst, Mass.
Stanley, H. O.	Winthrop	Wentworth, H. G.	Skowhegan
Stanley, N. D.	Pittsfield	Weston, Joseph	Gardiner
Staples, George W. 904 Main St., Hartford, Conn.		White, Charles M.	Augusta
Stilphen, Asbury C.	Gardiner	White, Edward L.	Bowdoinham
Strout, Charles S.	Biddeford	Whitman, L. E.	Hebron
Sturtevant, F. C.	Hebron	Yeaton, George A.	Augusta
		Yeaton, Samuel F.	West Farmington

ANNUAL MEMBERS 1926

Alleman, Dudley	Portland	Gardiner Farm	Gardiner
Andrews, Irving	South Paris	Jordan, Ira	Milbrigg
Bacon, R. S.	Oakland	Lowe, Reuben	No. Shapleigh
Blandhard, R. N.	Cumberland Ctr.	Merrill, Harry	New Gloucester
Calderwoud, J. F.	Union	Sinclair, Will	Winthrop
Canham, V. W.	Lewiston	Sweetser, H. P.	Cumberland Centre
Davis, Ray G.	E. Wakefield, N. H.	Warring, J. H.	Orono
Emmons, George N.	West Paris	Woodman, George, R. D., Woodfords	

ANNUAL MEMBERS 1927

Barrett, N. F.	Hope	Maloon, W. L.	Sabattus
Butler, Charles	Wiscasset	Mower, W. L.	Greene
Canham, V. W.	Lewiston	Ricker, W. J.	Turner
Copeland, R. L.	Brewer	Start, Mrs. A. O.	Union
Jones, Virginia	So. China	Wallace, F. S., 376 Water St., Haverhill, Mass.	
Jordan, Ira	Milbride		

ANNUAL MEETING OF
 MAINE STATE POMOLOGICAL SOCIETY
 PORTLAND, MAINE

Friday Morning Session
 Nov. 12, 1926

The President, Mr. W. G. Conant, called the meeting to order. He extended his thanks for the way he had been assisted in making this such a wonderful exhibit.

The Treasurer, Mr. T. E. Chase, then submitted the Report of the Treasurer.

Buckfield, Me., Feb. 1, 1927.

Annual report of the Treasurer to the Honorable Commissioner of Agriculture.

Receipts (working funds)

Feb. 1, 1926	Cash on hand	\$18.00
Feb. 1, 1926	Rec'd Interest on bonds.....	22.50
Apr.	“ from State Treasurer	663.53
May	“ from State Treasurer	723.58
July	“ Interest on bonds	22.50
July	“ Interest on bank stock.....	16.00
July	“ from State Treasurer.....	493.24
Oct.	“ Interest on bonds	2.75
Oct.	“ One life membership.....	10.00
Nov.	“ Portland Chamber of Commerce.....	761.00
Dec.	“ Interest on liberty bond.....	42.50
Dec.	“ Sale of apples.....	1.75
Dec.	“ Annual membership dues.....	12.00
Dec.	“ Life memberships	20.00
Dec.	“ from State Treasurer	765.72
Jan. 1927	“ Interest on bank stock.....	16.00
	Total receipts.....	\$3,591.07

Permanent Fund Invested as Follows:

Four shares Farmington National Bank Stock.....	\$ 400.00
One Liberty Bond	1,000.00
On deposit in Mechanics Savings Bank	550.00
On deposit in Savings Dept. Nat'l S. & L. Bank.....	1,000.00
Due for transfer from working funds	30.00
Total.....	\$2,980.00

Disbursements

1926		Paid	
Order No.			
42	Apr. 2	W. G. Conant, expenses	\$19.26
43	March	J. P. Hutchinson Co. Treas. Bond	5.00
44	April	Lyman K. Lee, Exec. Committee, expenses	11.66
46	April	W. H. Conant, expenses	21.54
47	April	W. G. Conant, expenses	21.02
48	April	T. E. Chase, Exec. Committee, expenses....	9.04
49	April	Portland Chamber of Commerce, dues.....	25.00
50	June	E. L. White, 6 mo. salary and expenses.....	92.39
51	June	C. M. Conant, Exec. Committee, expenses	33.51
52	June	T. E. Chase, Exec. Committee, expenses....	6.00
53	June	E. W. Dolloff, Exec. Committee, expenses	14.00
54	June	T. E. Chase, 6 mo. salary and expenses.....	17.50
55	June	E. L. White, expenses	5.00
56	June	W. G. Conant, expenses	4.60
58	July	E. L. White, expenses	10.00
59	Aug.	Dues to Agricultural Federation.....	6.00
60	Aug.	N. D. Stanley, expenses	9.73
61	Aug.	W. F. Dunham, printing	5.25
62	Sept.	Walter Dolley, speaker field meetings, ex.	16.15
63	Sept.	J. H. Waring, speaker field meetings, ex.	36.80
64	Sept.	Victor R. Gardner, speaker field meet., ex.	132.01
65	Sept.	W. G. Conant, expenses.....	16.54
66	Sept.	W. F. Dunham, printing	11.25
67	Sept.	Wm. R. Cole, speaker field meetings.....	127.75
68	Dec.	Irene Evans, stenography, annual meeting	12.74
69	Dec.	Lyman K. Lee, expenses and supplies.....	31.70
70	Dec.	E. W. Dolloff, expenses	51.65
71	Dec.	W. G. Conant, expenses	21.29
72	Dec.	A. L. Tisdale, photographer, annual meet.	16.50
73	Dec.	L. B. Raynes, stenography.....	10.00
74	Dec.	Premiums	576.00
75	Dec.	Special premiums, bbls., boxes, etc.	726.00
76	Dec.	T. E. Chase, expenses	24.80
77	Dec.	Nat'l Shoe & Leather Bank, safe dep. box	3.00
78	Dec.	N. D. Stanley, expenses	18.60
79	Dec.	Falmouth Hotel, for officers, speakers, etc.	135.40
80	Dec.	A. K. Gardner, judge annual meeting.....	44.75
81	Dec.	Bastian Bros. Co. Badges annual meeting.....	30.39
82	Dec.	E. F. Hitchings, judge annual meeting.....	39.80
83	Dec.	T. E. Chase, expenses	33.95
84	July	B. A. Hutchinson, govt. envelopes.....	11.04
85	Dec.	E. L. White, 6 mos. salary	75.00
86	Dec.	E. L. White, expenses	94.98
87	Dec.	Hayden & Dingwell, carpentry, ann'l meet.	272.29
88	Dec.	A. M. White, clerical work.....	10.00
		Forward	\$2,896.94
89	Paid	Jewett Printing Co.	6.75
90	Paid	E. H. Doughty & Son, trucking at Port.	50.00
91	Paid	T. E. Chase, 6 mos. salary	12.50
92		City of Portland, police	19.00
93		H. P. Sweetser, judge annual meeting.....	25.00
94		Transfer of life mem. to permanent fund	60.00
95		Nat'l Shoe & Leather Bank, note and int.	201.00
96		W. F. Dunham, printing	7.00
97		Hannaford Bros., for box apples.....	3.25

98	O. C. Buck, premium	2.00
99	Apples bought for Portland C. of Commerce	135.00
	Total	\$3,318.44
	Cash on hand Feb. 1, 1927	172.63
		\$3,591.07

Respectfully submitted,
T. E. CHASE, *Treasurer.*

The Report was accepted.

Secretary E. L. White then submitted the Report of the Secretary, as follows:

Secretary's Report

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

The first meeting was in Auburn in February. At the same time the members from the other State Associations met to make arrangements for the Annual Fall Exhibitions.

The Secretaries of the several organizations were made a Committee on Arrangements.

The Secretary of the Pomological Society has been into Portland three times to meet with the Committee.

The second meeting of the Executive Committee was held in Augusta, The premium list and the programs for field meetings were made up.

The Committees were called together in Dover-Foxcroft. The details of the Annual Exhibition were gone over.

Three field meetings were held during the summer. The first was at Highmoor Farm, the second with Mr. Henry Wentworth of Skowhegan, the third with Mr. Lyman K. Lee in East Guilford.

The attendance was of usual numbers and the programs included speakers from outside the State as well as men from our own State.

Respectfully submitted,
(Signed) E. L. WHITE.

This report was accepted.

Mr. Wilson Conant then read the report by Mr. Donald Folsom for State Pomological Society on Apple Disease Work, as follows:

"In last year's report reference was made to two bulletins which have since been printed. Bulletin 325 entitled 'Apple Spraying and Dusting Experiments, 1918 to 1924,' and Bulletin 333 entitled 'Apple Spraying and Dusting Experiments in 1925,' contain all the information received to the beginning of the present season.

"In making plans for this season it became apparent that a number of lines of work that might be of interest could not be undertaken with the available time and money. However, during the summer it was possible to hire an assistant which adds at least 150 per cent in the way of time and 50 per cent in the way of funds to the apple research work on diseases, especially scab. The work was carried on by Folsom up to the middle of August and after that by the assistant, Mr. T. T. Ayers. The part of the report that follows has been compiled by Mr. Ayers as the result of his work at Highmoor Farm.

"In the Ben Davis orchard on the Highmoor Farm dry lime sulphur was applied according to four different schedules. The same schedule was applied to three plots scattered around in the orchard. Each plot consisted of 14 or less trees in two rows. There were also two plots which were sprayed last year, but were not sprayed this year, and finally, two plots which were not sprayed this year or the preceding year.

"Certain trees in each plot were examined at different dates as to the amount of scab on the leaves. The fruits were examined once on the trees and also after picking.

"With five applications, viz.: pre-pink, pink, calyx, ten-day and four-week, there was about one per cent scabby leaves, less than one per cent scabby fruit and 16 per cent russeted. With four applications, viz.: the pink, calyx, ten-day and four-week, the leaves were about two per cent scabby and the fruit was about one per cent scabby and 16 per cent russeted. Apparently the pre-pink application reduced scab a trifle and did not increase the russetting.

"With five applications, viz.: the pink, calyx, ten-day, four-week and August, the leaves were about two per cent scabby and the fruit was about two per cent scabby and 26 per cent russeted. Apparently the August application did not reduce the amount of scab on the leaves or fruit and increased the russetting.

"With three applications, viz.: the pink, calyx, and ten-day, which used to be the standard schedule, the leaves were about five per cent scabby and the fruit was about two per cent scabby and 17 per cent russeted. Leaving off the four-week application increased the scabby leaves somewhat and increased the scabby fruit slightly, but had very little effect upon russetting.

"Leaves from trees with no fungicide or insecticide were about 24 per cent scabby and the fruit was about 43 per cent scabby and four per cent russeted. Apparently scab was not quite so severe this year as usual. There were more fruits scabby without the spray than were russeted with the spray.

"McIntosh trees were also sprayed on Highmoor Farm. These are in two rows. Every fourth tree in each row received a different schedule including a schedule with no applications. With five applications, viz.: the pre-pink, pink, calyx, ten-day and four-week, the leaves were about one per cent scabby and the fruit was about one per cent scabby and four per cent russeted. With four applications, viz.: the pink, calyx, ten-day and four-week, the leaves were about four per cent scabby and the fruit about one-half per cent scabby and four per cent russeted. Apparently the addition of the pre-pink application did not decrease the amount of scabby fruit, although it decreased the amount of scabby leaves. With five applications, viz.: the pink, calyx, ten-day, four-week and August, the leaves were about one-half per cent scabby, while the fruit was free of scab and about nine per cent russeted. Apparently the August application reduced the amount of scab on the leaves but not much on the fruit, while it increased the russetting. The unsprayed trees were about 14 per cent scabby as to leaves, and the fruits were 43 per cent scabby and free from russetting. Although the McIntosh trees are smaller and more in the open, the fruit was as scabby as that of the

Bens in the unsprayed trees. On the other hand, russetting was not as bad.

"In both varieties there was not a clear correlation between the percentage of scabby leaves and the percentage of scabby fruits. With spray the effects of scabby leaves may not be bad on the fruits, but without spray a few scabby leaves may dose up many fruits.

Twig Infection

"From the results of observations made while on a survey of the apple growing sections of the State to determine the efficiency in the control of apple scab when the recommended spray and dust applications were used in the orchard, it was apparent that twigs infected with apple scab played an important role in the dissemination of scab during the season while the leaves were on the trees, and there were indications that the infected twigs acted as overwintering agencies for apple scab. Twigs on the McIntosh trees infected with scab could readily be detected because the leaves around the cankers were infected with scab. In many instances, the leaves had dropped off around the cankers. These lesions were found on the previous season's growth. The scars from the cankers on the older sections of the branch could be seen, but the bark had begun to slough off. Twigs which are growing rapidly seem to be the most susceptible to infection by scab. Water sprouts seem to be very susceptible. In one instance, a tree which was approximately 30 years old, bore numerous water sprouts and every one of these sprouts was infected with scab.

"So far, no satisfactory method of control for twig infection has been demonstrated. It is one of the many problems which need attention as far as the Maine orchardists are concerned, even though it does not seem very important in the apple sections of the other states.

Apple Scab in Storage

"Some preliminary experiments on this problem have been conducted by Dr. Folsom. The results are reported in

Maine Bulletin 333, entitled 'Apple Spraying and Dusting Experiments in 1925.'

"This year a more extensive experiment has been planned and is now being performed at the New England Cold Storage Co.'s plant at Portland.

"Some of the questions which we are attempting to answer are:

- (1) What is the effect of different spray schedules on apple scab in storage?
- (2) Does apple scab spread in storage?
- (3) Does apple scab develop in storage?
- (4) Is apple scab spread by handling when the apples are wet or dry?
- (5) What is the effect of humidity and temperature on apple scab?
- (6) When does infection of the fruit by apple scab which appears in storage occur?
- (7) Does storing in barrels or baskets have any effect on apple scab appearing in storage?
- (8) Does the weather play any part in the appearance of scab in storage?"

Report on Apple Insect Work for 1926*

"In the preparation of this report for the State Pomological Society, we have included a brief statement regarding the general apple insect situation this season, and also a short summary of our experimental work in connection with the blueberry industry.

"The current season has been marked by the unusual abundance of three insect pests of the apple. The apple maggot, codling moth, and leaf-hopper have been exceptionally numerous and destructive. The maggot, in particular, has attacked such varieties as McIntosh, Baldwin and Spy, which are normally resistant in well sprayed orchards. Probably this increase may be due in part to the fact that in some orchards, at least, the infested crops, especially those of early sorts, were not destroyed last

*Prepared for the State Pomological Society by the Department of Entomology, Maine Agricultural Experiment Station.

season. In the case of the codling moth we have noted an increase during the season of 1925, and a recent report from Canada states that the codling moth has been increasing there. Leaf-hoppers have been reported in sufficient numbers to whiten the foliage in orchards in the western part of the State.

An Apple Pest, Newly Recorded

"In the fall of 1924 a few small beetles were sent into the Experiment Station. They were reported from an apple orchard in Winthrop where they were injuring the fruit.

"Strangely enough, this insect was named in 1824, exactly 100 years before. It has been known for years as an unimportant leaf feeder on the oak, beech and elm, and has a general distribution throughout the eastern United States and Canada and as far west as Texas.

"In the infested region in Maine the adult beetles migrate from other host plants to the apple in September, and in the course of two or three weeks they may ruin the market value of the crop. The beetles spoil the appearance of the fruit by making abundant shallow feeding punctures over the surface.

"The beetles were found in tightly curled dry leaves during the day, for they are night feeders.

"In 1925 over 75 per cent of one grower's Russet apples were injured. During 1926 about 50 per cent were attacked. Thus far it has not been found in destructive numbers except in this one orchard, although it has been present elsewhere.

"This beetle appears resistant to arsenical sprays at standard strengths. When its early life history is known it is possible that some means of control, other than spraying, may be worked out.

Blueberry Insects

"*Cutworms.* The most spectacular blueberry insect outbreak in recent years took place in the spring of 1925. The black-lined cutworm was responsible for this attack.

This cutworm, which has been known since 1806, had never before been recorded as a blueberry pest. It appeared in the fields in such vast numbers that large areas were stripped of blossom buds and leaves. A survey of the commercial districts during the spring and summer revealed the fact that the damage had been distributed throughout the entire blueberry producing territory of Maine instead of being concentrated in Hancock County, as was at first supposed. Moreover, the insect is probably not as new an enemy of the blueberry as was at first supposed, for reports of similar injury during certain seasons were common, although frosts had always received the blame.

“Further observations in 1926 resulted in the capture of several other species of cutworms attacking the swelling buds. The best known among them is the W-marked cutworm which has a wide range of food plants.

“Results obtained with poison bran mash as a control measure in 1925 and 1926, were very encouraging.

“*The Blueberry Maggot*. This insect was present in its usual abundance during the past season. The work begun in 1925 in connection with the life history and control of this pest is being continued.

“*The Blueberry Flea-Beetle*. This insect, usually of minor importance, was quite destructive during the 1926 season. The grub-like young appeared in the fields early in June.

“Spraying with arsenate of lead (as suggested by this department) proved effective in checking the outbreak.

“This flea-beetle hibernates in the egg stage in surface rubbish. Therefore the practice of burning normally keeps down its numbers. Due to the loss of crop occasioned by the black-lined cutworm during the preceding season, many fields were not burned over in 1926 and the outbreak was doubtless largely due to this fact.

A New Species of Thrips

“A species of thrips, never previously observed, has been found in considerable abundance on the blueberry bushes this season. The leaves curl up tightly around the stem, become red in color, and eventually the plant dies. We have

no previous record of thrips injury in connection with the blueberry."

This report was accepted and made a part of the record.

Mr. G. A. Yeaton then submitted the following resolution and moved that same be placed on the records:

"Resolutions on the Death of William C. Robinson.

"It is eminently fitting that on this 52d anniversary meeting the Maine State Pomological Society should make official record of the recent death of its former President, William C. Robinson.

"During his long service as a member and two years as president, he gave to the organization the influence and helpfulness of his strong character, his delightful personality, his wise suggestion and his readiness to do his full part in every line of service.

"The indomitable nature that made him a nationally outstanding example in railroad building, years ago, still held sway, and whatever he took hold of in the line of public service was sure to terminate successfully.

"He was a great sufferer during his latest years, but no one ever heard him complain. With him the sun was ever shining, and he radiated happiness.

"His death is a great loss to this organization, to the State which he dearly loved, and to the up-building of Maine agriculture."

(Signed)

G. A. YEATON,

E. L. WHITE,

LYMAN K. LEE,

Committee of Maine State

Pomological Society.

Portland, Maine, Nov. 10, 1926.

Mr. G. A. Yeaton then read the following Resolution:

"The Pomological Society feel greatly indebted to the merchants of Portland and others who have made it possible to hold the Annual Exhibit and Meeting of the Pomological Society, and we want to express our thanks to them."

(Signed)

G. A. YEATON,

E. L. WHITE,

L. K. LEE.

Resolution adopted.

The Report for the Maine Pomological Society was then read by Mr. W. H. Conant as follows:

"Largely through the efforts of the Pomological Society the Maine Agricultural Experiment Station acquired about 30 acres of land adjacent to Highmoor for a demonstration orchard. Last spring about 300 trees were planted, 150 Spys and 150 McIntosh. These trees were obtained from Kelly Brothers and from Stark Brothers. All of the trees which were planted lived and made a very good growth. Next spring the Baldwin block will be planted with McIntosh fillers and when the McIntosh block is added there will be approximately 1,000 trees, including 150 Baldwins, 150 Spys and 150 McIntosh as permanent trees, with McIntosh fillers throughout. This orchard, together with some of the young orchards set out previously, will make a well balanced group of varieties to work with. In the stock and scion orchard we have about 10 varieties, including Tolman Sweet, Baldwin, Stark, Spy, Wealthy and Wolfe. In the Golden Delicious orchard there are about 300 Golden Delicious trees and 100 trees of McIntosh and Cortland. In the bud selection orchard there are about 400 trees including McIntosh, Delicious, Spy and Ben Davis. The Ben Davis are planted as fillers and will be removed after they have borne for several years. A large proportion of the old Ben Davis trees have been removed, so at the present time there are only about 500 trees of this variety on Highmoor as compared with about 2,000 Ben Davis trees on the Farm when the State purchased it.

"The breeding work with apples is progressing very well. The crosses between McIntosh and Spy in order to get a late variety of McIntosh have made a good growth and should be set out next spring in the orchard. Many of the more promising seedlings of this cross have been grafted into older trees to hasten fruit production. A considerable number of seedlings from the Cross of Golden Delicious and McIntosh are now growing in the nursery at Highmoor and a large number of crosses were made during the past season. The primary object in the breeding work is to develop a McIntosh type of apple which will be later in maturity and which will hang on the tree better than the present McIntosh variety.

"Grafting experiments indicate that scions five or six inches long give better results than scions two or three inches long. In both cases the topmost bud on the scion was placed directly over the graft union. The use of a liquid grafting wax worked very well. This was made up by mixing the ordinary grafting wax with denatured alcohol, so that it could be applied with a brush. The wax applied in this way hardened in good shape and in no case did it peel off or expose the wound in any way. Every graft treated with the liquid wax made a good growth.

"Additional nursery work was done during the past season. Seedling trees from Highmoor Farm are being compared with French Crab seedlings imported from France and with seedling trees used by commercial nurseries in Washington State. The results so far seem to indicate that the imported French Crab seedlings make the best growth. All three classes of seedlings were budded with McIntosh buds during the past summer. Our previous experiments would seem to indicate that the Tolman Sweet and McIntosh seeds made the best seedlings and it is possible that another year will show the superiority of the Tolmans. The Tolmans grown at Highmoor were naturally not so large as the French Crab seedlings grown in France and Washington where the growing season is considerably longer.

"During the past few years we have done considerable work on shaping the young tree. If the nursery tree is permitted to grow in the orchard without care, most of the branches will develop in the upper five or six inches of the tree. However, if some of these topmost branches are pinned back, the lower ones will shoot out and the branches can be spaced as they should be. During the past season another method of causing the branches to develop where they are wanted was tried with fairly good results. Buds were selected on the one-year-old whip where permanent branches were desired. A small notch was made above each one of these buds so that the sap from the roots will be accumulated at the buds which are selected for permanent branches. In most cases these buds which were notched developed vigorous branches, although in many cases the buds which were not notched also made good growth. A

combination of notching the buds and pinching back the uppermost branches, will undoubtedly be a satisfactory method of controlling the spacing of the branches on young trees.

"The work with fertilizers is being continued with essentially the same results as found in previous years. This summer's results show that 12 pounds of nitrate of soda per tree is superior to 6 pounds, but the trees which received 12 pounds had rather poorly colored fruit and the trees are becoming somewhat too thick in the top."

Report accepted.

Mr. Gardner: "There is another matter I would like to make a suggestion on. It seems to me that we have advanced just a little bit beyond where the 12 plate exhibit is desirable. I personally feel that we should do away with that emphasis. I suggest that the 12 specimen plate be discontinued altogether, and that certain varieties be more strongly represented by having 25, 50 or 100. I would make a suggestion that a committee be appointed to report back at a later meeting.

The following officers were elected:

W. G. Conant, Hebron	<i>President</i>
E. W. Dolloff, Standish	<i>First Vice-President</i>
A. K. Gardner, Orono	<i>Second Vice-President</i>
T. E. Chase, Buckfield	<i>Treasurer</i>
E. L. White, Bowdoinham	<i>Secretary</i>
Lyman K. Lee, Dover-Foxcroft	
	<i>Member of Executive Committee for three years</i>
W. H. Conant, Buckfield	
	<i>Member of Experiment Station Council</i>
F. P. Washburn, Augusta	
	<i>Vice-President of New England Fruit Show</i>
G. A. Yeaton, Augusta	
	<i>Representative to American Pomological Society</i>
W. H. Conant, Buckfield	
	<i>Visitor to College of Agriculture</i>
W. G. Conant, Will Sinclair and W. H. Conant	
	<i>Delegates to Federation of Agricultural Societies</i>
	<i>Committee appointed to revise premium list—A. K. Gardner, E. L. White and G. A. Yeaton.</i>

**ANNUAL MEETING MAINE STATE
POMOLOGICAL SOCIETY
LEWISTON, MAINE, NOV. 15, 1927**

**Business Meeting
10 A.M.**

President's Address

“The time has arrived to open our business meeting. First is the President's address. It will be very brief, as I am not much of a speaker. I simply wish to thank the members for the way in which they have assisted me in putting on the show for the last two years. I have enjoyed the work very much, and I will continue to take hold and help boost the Pomological Society in any way in the future. I think that is all I have to say.”

Treasurer's Report

Buckfield, Me., Feb. 1, 1928.

Annual Report of the Treasurer to the Commissioner of
Agriculture

RECEIPTS

1927			
Feb. 1		Cash on hand	\$172.63
April 1	Rec'd	from State Treasurer	1,107.77
July 5	“	Dividend on Bank Stock.....	16.00
Aug. 1	“	from State Treasurer	92.48
Aug. 1	“	Interest on Liberty Bond	42.50
Nov.	“	Sale of apples	6.50
Dec. 10	“	Lewiston Chamber of Commerce.....	500.00
Dec. 13	“	Discounted note at Bank.....	495.00
Dec. 15	“	from State Treasurer.....	490.91
Dec.	“	Annual Dues	9.00
Dec.	“	Life memberships	40.00
1928			
Jan. 4	“	Dividend on Bank Stock	16.00
		Total.....	\$2,988.79

Permanent Fund Invested as Follows:

Four shares Farmington National Bank Stock.....	\$400.00
On deposit Mechanics Savings Bank.....	550.00
On deposit Savings Dept., Nat'l Shoe & Leather Bank....	2,030.00
Due for transfer from working funds	40.00
Total.....	\$3,020.00

DISBURSEMENTS

Order Number		
99	Paid	J. H. Waring, expenses as speaker..... \$13.15
100 & 101		paid at Augusta and deducted from stipend
102	Paid	A. K. Gardner, expenses as speaker..... 11.54
103	"	W. W. Chenoweth, speaker 36.02
104	"	W. G. Conant, expenses..... 24.37
105	"	W. G. Conant, expenses 19.86
106	"	W. H. Conant, expenses 16.31
107	"	Portland Chamber of Commerce, dues..... 25.00
108		Printing paid at Augusta.....
109	"	J. P. Hutchinson & Co., Treas. Bond prem. 5.00
110	"	T. E. Chase, expenses..... 7.45
111	"	E. L. White, six months salary..... 75.00
112	"	E. L. White, expenses 5.03
113	"	E. L. White, expenses 35.63
114	"	Lyman K. Lee, expenses 9.50
115	"	T. E. Chase, six months salary..... 12.50
116	"	G. A. Yeaton, expenses 7.00
117	"	W. F. Dunham, printing 7.50
118	"	W. G. Conant, expenses 7.10
119	"	Ray G. Davis, hotel for speakers..... 6.75
120	"	T. E. Chase, expenses 10.70
121	"	W. G. Conant, expenses 10.50
122	"	W. H. Conant, speaker field meetings..... 40.40
123	"	W. F. Dunham, printing 9.50
124	"	Chas. H. Merchant, speaker field meetings.... 50.30
125	"	Bastian Bros., badges for annual meeting.... 23.64
126	"	F. C. Sears, speaker, field meetings..... 69.51
127	"	E. L. White, six months salary 75.00
128	"	E. L. White, expenses 98.07
129	"	E. L. White, banquet tickets 8.00
130	"	Bates Rem. Store, bunting for annual meet. 38.08
131	"	A. M. White, clerk, annual meeting..... 15.20
132	"	DeWitt Hotel, for speakers and officers..... 124.80
133	"	W. H. Conant, expenses 19.45
134	"	Mrs. D. S. Clement, labor 3.00
135	"	W. H. Conant, apples 17.50
136	"	E. F. Maxim Co., carpenter work annual meet. 177.78
137	"	A. G. Gardner, judge annual meeting..... 48.55
138	"	E. F. Hitchings, judge annual meeting..... 39.15
139	"	Nat'l Shoe & Leather Bank (rent dep. box) ... 3.00
140	"	T. E. Chase, expenses 15.45
141	"	John Chandler, speaker 43.00
142	"	Premiums 558.25
143	"	Premiums, special 626.00
144	"	L. B. Raynes, labor 10.00
145	"	Lewiston Sun-Journal, ad. annual meeting..... 6.00
146	"	R. F. Raymond Paper Co., paper, ann. meet. 7.50

147	Paid	W. H. Cornforth, stenography, annual meet.	30.25
148	"	Auburn Free Press, printing	16.86
149	"	Lyman K. Lee, exec. comm. expenses.....	18.95
150	"	E. W. Dolloff, exec. comm. expenses.....	20.35
151	"	W. G. Conant, expenses	24.65
152	"	Auburn Free Press, printing	32.00
153	"	H. P. Sweetser, judge annual meeting.....	20.00
154	"	T. E. Chase, exec. comm. expense.....	3.80
155	"	Transfer to permanent fund.....	30.00
156	"	R. E. Ferguson, postage	10.99
157	"	T. E. Chase, six months salary and expense...	14.35
			\$2,691.28
Total.....			
Cash on hand Feb. 1, 1928.....			297.51
			\$2,988.79

Respectfully submitted,

T. E. CHASE, *Treasurer.*

On motion of Mr. Yeaton, duly seconded, it was voted to accept the report of the Treasurer.

Secretary's Report

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

The first meeting was in Auburn in February, when arrangements were made for the committee from the Pomological Society to act with the other State Associations for the annual meeting in November. Also plans for the place and dates of the summer orchard tour.

The committee met the second time in Augusta in June to revise the premium list and arrange details for the summer meetings.

The third meeting was at Highmoor Farm in August. The committee was named to arrange for a bank of apples at the annual meeting in November, and several other matters were taken up.

The summer field meetings were held in Newfield, Waterford and Highmoor Farm.

The McIntosh orchards of Ray Davis in Newfield were visited, where important subjects of interest to fruit growers were discussed. The second day's meetings were in the orchards of F. H. Morse & Son, in Waterford. This orchard showed many orchard problems in actual practice and proved a valuable day for all who visited the orchard.

The last meeting, held at Highmoor Farm, showed how many of the problems of Maine farms were being solved, teaching the profitable and unprofitable ways of farming.

The Society appreciates the hospitality extended us at the meeting places on the summer tour, as we partly realize the work it causes the entertaining parties. These summer meetings were largely attended, at Newfield, 75; at F. H. Morse & Son, 230, and at Highmoor Farm, 200.

The President, Treasurer and Secretary have had several conferences with the Allied State Associations, Chambers of Commerce and other bodies relating to orchard problems.

Respectfully yours,

E. L. WHITE, *Secretary.*

On motion duly seconded, it was voted to accept the report of the Secretary.

Report of W. H. Conant, Maine Experiment Station Council

I think it is quite important that the members of the Pomological Society be kept in touch with the work that is being done at Highmoor Farm in the interest of orcharding. This report may not be very extensive, but I do think we ought to keep in mind what is being done there, and go there and look the situation over as often as possible.

The work, the planting of the demonstration orchard, the new orchard, started on the newly purchased land as you go up the hill, was completed this fall, when the McIntosh block, including about 300 trees, was set. This orchard now consists of about 150 permanent Spys, 150 permanent Baldwins, 150 permanent McIntosh with McIntosh fillers throughout, a total of about 900 trees. The Spy block was set two years ago and is making very good growth. The Baldwin trees were set this spring. About half of the trees came from Kelley Brothers' nurseries in New York, while half were grown in the nurseries at Highmoor Farm. This block of trees has made reasonably good growth but was badly infected with scab along one side of the orchard.

The McIntosh trees set this fall were all grown at Highmoor Farm and are an unusually fine lot of nursery trees. They were budded on a special grade of French Crab seedling and the buds were selected from high colored and from striped and poorly colored McIntosh trees in Saunders' orchard near Greene. About 12 different parental trees are represented in this block of McIntosh, so that when they come into bearing we will be able to determine whether the differences in color of McIntosh can be transmitted by bud selection.

The bud selection orchard is making good growth considering that it was set in land which was poorly prepared and has been in sod the entire time since the other trees were set. About 35 trees were lost last winter due to pine mice, and these have been reset. At the present time there does not seem to be any indication that bud selection is effective in producing different sized trees.

Seedlings from different sources,—from Washington State, Tolman seedlings grown in Maine and imported French Crab seedlings,—were budded last year to determine the value of these different seedling stocks for nursery work. Although the data had not been analyzed, it appeared as though the imported French Crab seedlings had given the best one year old whips.

The breeding work, especially the crosses between McIntosh and Golden Delicious, is being continued on a relatively large scale. Last spring, with the approval of the Station Council, a considerable number of these hybrid seedlings were grafted into stock trees in the stock and scion orchard. Many of these trees are of comparatively little value either from a commercial standpoint or for experimental work, and so have been used for top working with hybrid seedlings. Seedlings which do produce unusually good fruit will be budded on seedling stocks and several trees will be grown in the field to study the tree type and resistance to cold. All of the seedlings produced can easily and quickly be tested by top working in these older trees. It will be necessary then to propagate only the most desirable types. These are to be planted on a piece of land which is now being cleared for this purpose.

The work with shaping young trees is being continued as new blocks of trees are set out. It has been found that it is much easier to make a well shaped tree if branches can be produced on the one year old whips. On practically all of the McIntosh trees set this fall, branches were produced in considerable numbers on the one year old whips due to the unusually vigorous condition of the seedling stocks on which the McIntosh trees were budded. Branches produced on one year old whips come out from the trunk at a very good angle and usually enough of them are produced so there is no difficulty in choosing permanent branches for the matured trees. Where branches cannot be established on the one year old whips it is quite possible to induce their formation and make a well shaped tree by pinching back the topmost buds as they start growth at the beginning of the second year.

Fertilizer experiments with Ben Davis trees continue to show the value of nitrate of soda. On the trees at Highmoor Farm approximately six pounds of nitrate of soda per tree should be enough for maximum yields.

A number of new plum varieties and cherries have been obtained from Minnesota to determine their value for Maine conditions. A number of early apple varieties have also been planted in the home orchard for use at the farm."

On motion duly seconded, it was voted to accept the report of Mr. Conant.

**Report for Wilson Conant for State Pomological Society on
Apple Disease Work
November 15, 1927**

By Donald Folsom

Storage scab showing up during the winter of 1926-27 was not nearly so severe as during the preceding season. Even so, it varied somewhat with the spray schedule. So far, then, the chief determining factors for the development of scab in storage are the amount of fungicide used and the nature of the season.

Microscopic examination of leaves early this year showed that ascospores were being matured in the dead leaves much earlier than usual. This condition was preva-

lent over the northern and eastern United States this year. It was, therefore, expected that the earlier sprays would be especially important. This turned out to be the case. A comparison of five different spray schedules with the unsprayed checks shows the following:

In the Ben Davis plots on Highmoor Farm the unsprayed checks had 92% of the fruits scabby and 1% russeted, with 7% clean. Most of the scab was either of the cull type or at least severe enough to throw the apples into the B grade. The old fashioned three-application schedule, pink, calyx and ten-day, reduced the scab to 42%, most of it not throwing apples out of the A grade, with 22% russeted and 46% clean. Adding a four-weeks' application reduced the scab to 31%, increased the russetting to 36% and gave about 33% clean. Adding the August spray reduced the scab to 18% with only 20% russeted and with 62% clean. Where both the four-weeks' and August were added the effect was a considerable reduction in scab with no increase of russetting and with a marked increase of clean. Comparing two five-application schedules, the one with the pre-pink as against the one with the August had less scab, more russetting, and the same amount of clean fruit. With six applications extending from the pre-pink to the August, there was the least scab, only 5%, and also the least russetting and the most clean, 76%. The general conclusions are that the earliest applications were most important, that there was less scab with more applications, and that there was not always more russetting with more applications.

Frequent dusting with certain new sulphur dusts gave 53% scabby, 16% russeted, and 31% clean. This was not quite as good a record as for the three applications of spray. This failure may possibly be due to one or more of several factors—inexperience of the operator of the machine, insufficient engine power of the machine, heaviness of the dust and consequent difficulty of getting even distribution with a measured amount of materials. Dust may possibly stick to McIntosh leaves and fruits better than to those of Ben Davis trees.

Where certain Ben Davis plots have been treated the same for several years there was as yet no evidence of a

cumulative effect, on vigor, either of lack of spraying or of the use of lime sulphur.

The McIntosh on Highmoor Farm showed much more striking results than the Ben Davis. Unsprayed trees lost leaves, lost most of the fruits, looked black because of the lesions on the leaves, and what fruits were finally harvested were small, badly injured, and in volume amounted to about $1/5$ of the fruits from corresponding sprayed trees. During the three seasons in which these McIntosh have been used for spraying experiments, scab injury on the unsprayed trees has become progressively worse in comparison with that on Ben Davis on the same farm. On the other hand, in the McIntosh orchard on the College Campus, where injury to both leaves and twigs was bad two years ago, careful spraying of all trees reduced twig infection to one tree last year and this year eliminated twig infection and reduced leaf infection to about 2 per cent. Further than this, in a commercial orchard in York County where the owner had sprayed 13 times two years ago and 8 times last year, the cumulative effect of careful spraying showed up as follows. Check trees showed practically no scab throughout the season, although even Baldwins just over the fence showed bad injury from scab and neighboring orchards where past control had not been so good, also showed conspicuous scab. By the end of the season on an unsprayed tree a third of the apples were scabby, but very few were infected enough to be considered culls or as belonging outside of the A grade.

In one orchard in Penobscot County where spraying has been careful for a number of years there was not much trouble from scab. In another orchard not far away where past applications have not eliminated twig infection there was, as usual, considerable injury.

Experimental work in commercial orchards has not been as satisfactory as it might be because of reluctance of the owners to leave some trees untreated as checks, or because of their not harvesting groups of trees separately according to the different treatments. I think that it is high time to set out a McIntosh orchard which will be used solely for apple scab experiments. This can be done on Highmoor Farm just south of the new demonstration orchard. Such

an orchard would enable us to study the effects of different kinds of materials such as lime-sulphur spray, sulphur dust, colloidal copper, sulphur dry mix, and absence of treatment, each to be applied to the same part of the orchard for five years or more. Dr. Sax has stated that the land is ready for planting next spring and that trees are on hand at Highmoor Farm with which to plant it.

On motion it was voted that appreciation be shown to Mr. Babb for what he has done for the society, by a rising vote of thanks.

PRESIDENT CONANT: "Next is the appointment of a resolution committee. I will appoint Dr. G. M. Twitchell, Mr. E. N. Hitchings and Mr. G. A. Yeaton."

Election of Officers

PRESIDENT CONANT: "I will appoint as a committee to receive, sort and count ballots, Mr. Gardner, Mr. Thompson and Mr. Sturtevant. The first on the list is the President."

On motion duly seconded, the name of E. W. Dolloff was placed in nomination for President for the ensuing year.

MR. DOLLOFF: "I thank you for placing my name in nomination for the highest place in the society, but to be honest with you, I do not feel I am competent to accept the position, and will be pleased if you will nominate and elect someone else."

There being no other nominations, it was moved and seconded that Mr. Sturtevant cast one vote for Mr. E. W. Dolloff for President, which being done, Mr. Dolloff was declared elected President of the society for the ensuing year.

On motion duly seconded, the name of A. K. Gardner was placed in nomination for first Vice-President, and motion also made and seconded that the secretary be instructed to cast one ballot for Mr. Gardner, and the same being done, he was declared duly elected First Vice-President.

The name of Mr. F. C. Sturtevant was placed in nomination for second Vice-President, and on motion of Mr. Chase, duly seconded, the secretary was instructed to cast one ballot for Mr. Sturtevant for second Vice-President, and the same having been done, he was declared duly elected Second Vice-President.

The name of T. E. Chase was placed in nomination for the office of Treasurer for the ensuing year, and on motion of G. M. Twitchell, the secretary was instructed to cast one ballot for Mr. Chase, and the same having been done, he was declared duly elected Treasurer.

It was moved and seconded that E. L. White serve as secretary for the ensuing year, and on motion of Mr. Yeaton, duly seconded, Mr. Gardner was instructed to cast one ballot for Mr. White for secretary, which was done and he was thereupon declared duly elected Secretary.

MR. CONANT: "Member of the Executive Committee is next. Bring in your ballots for someone to serve on the committee." On motion of Mr. Lee, duly seconded, the secretary was instructed to cast one ballot for W. H. Conant, and the same having been done he was declared duly elected.

PRESIDENT CONANT: "Member of Experiment Station Council is next. Will someone bring in your vote?"

MR. CHASE: "I think it is highly desirable that the work go on as it has been on the Experiment Station Council, and the man that is familiar with it keep on with it, and I nominate Mr. W. H. Conant as member of the Experiment Station Council." Motion duly seconded.

PRESIDENT CONANT: "If there is no objection, the secretary will cast the ballot for W. H. Conant to serve on that committee." The ballot was cast and Mr. Conant declared elected.

The name of H. P. Sweetser was placed in nomination for Visitor to the Agricultural College at the University of Maine, and it was moved and seconded that Dr. G. M. Twitchell cast one ballot for Mr. Sweetser for that office, which having been done he was declared duly elected.

PRESIDENT CONANT: "The next is delegates to the Federation of Agricultural Societies."

MR. WHITE: "It is generally the present president and two others. I nominate E. W. Dolloff for one."

The nomination having been seconded, it was moved by Mr. Yeaton that the secretary be instructed to cast one ballot for E. W. Dolloff, and it being duly seconded and the ballot having been cast, he was declared elected.

The name of Wilson Conant was placed in nomination for another member of the delegation, and the same having been duly seconded and no objection being offered, the secretary was directed to cast a ballot for W. H. Conant, and that having been done, he was declared elected.

The name of George Yeaton was placed in nomination for the third member of the delegation, and there being no objection, the secretary was instructed to cast a ballot for Mr. Yeaton, and it having been done, he was declared elected.

Mr. George Yeaton was nominated to serve as Vice-President of the American Pathological Society, and there being no objection, the secretary was instructed to cast a ballot for Mr. Yeaton, and that having been done, he was declared elected.

The name of Mr. F. P. Washburn, Commissioner of Agriculture, was placed in nomination by Mr. Yeaton, duly seconded, for Vice-President of the New England Fruit Show, and no objection being made, Mr. Gardner was instructed to cast one ballot for Mr. Washburn for that office, and he was declared elected.

PRESIDENT CONANT: "Is there any other business to come up at this time?"

DR. G. M. TWITCHELL: "There are one or two things on my mind. There is time for a little discussion. During the past fall there was published in one of our State papers the most complete, I think, and satisfactory description of spraying, and directions in detail how to go around a tree and do the work, that I have ever seen in any bulletin, because it entered into the details of the work. It was prepared, I think, by Mr. Morse, of Waterford, or Mr. Morse's son, and was published in one of our city papers here. It seemed to me when I read it that this was valuable and that it ought to have a wide circulation among growers, because, after all these years of spraying, you will find so many men that are still uncertain as to how the work should be done and still indifferent as to doing it, and with the evidence before us that spraying must claim attention more in the future than it has in the past, I felt that it was well worth while to bring that matter before the attention of the

Society and see whether, in connection with the increased work that they are doing in the way of summer meetings it wouldn't be possible for this Society to put into the hands of growers that statement of a method of work so complete. I know it would involve a little expense, but at the same time it seemed to me that it is money well expended, it fits the case so completely.

I do not know as it would be best during this meeting to make any motion. I do not feel to do that just now, but perhaps this afternoon, after talking it over, I may feel to do it.

The other matter is that this Society may well endorse the suggestion which has been made by Prof. Gardner in connection with the county agents, looking to the encouragement of growers in grafting over of their trees to reduce the number of varieties which are now being multiplied in the State. That list is already prepared. It seems to me that here is another matter of very great importance. Last year the Society offered prizes on 40 varieties. This year I think it is 24."

MR. WHITE: "We have reduced it quite a bit this year."

MR. TWITCHELL: "It should be reduced to at least seven or eight,—not because the apples are not valuable,—not because they are not adapted to Maine,—not because the quality isn't there, but simply because the market does not want them. Now it is something that has got to come in the near future, and it is well for us to prepare for it, and so it seems to me that this matter should be acted upon by the Society and endorsement given of the work which has been done by Prof. Gardner through the county agents, and this resolution has been presented just now:

'Believing that the selection of proper varieties is fundamental to successful apple growing in Maine and that the best varieties for Maine are represented by the New England Seven, particularly the McIntosh, be it resolved that the Maine Pomological Society hereby endorses the Apple Tree Top Working Campaign proposed by the Maine Agricultural Extension Service and earnestly urges Maine apple growers to top work inferior sorts to the varieties recommended.'

That recommendation of seven varieties was not made by Prof. Gardner, but made by the New England Society, or the New England body; and whether that list shall be followed or not, it would be well for us to fix the varieties, limiting them to as few as possible; and that means that this Society would naturally and inevitably strike out of its list those varieties which are grown now by individuals and are not wanted in the market, or are not in demand in the market, because that demand is for red apples, surely, as well as for certain varieties of red apples, and the cutting out of those varieties from the premium list gives, it seems to me, an opportunity for the extension of the work which this Society is already doing so well in box and barrel and special exhibits.

And right here,—I saw in this morning's paper a notice of sale on Thursday afternoon advertised. Isn't there a suggestion worth following, that we make this week a distribution week as well as an exhibition week. I think that comes right along with the work, and that we put in a little money which might be saved by the cutting out of these many varieties and put a little money into increasing interest and attention upon this and assuring thereby an increased attendance from the public and providing to the growers the opportunity which a great many would not get in any other way of meeting consumers direct and thereby increasing the sales of the product. In these ways it seems to me we can move out of the established lines of work of the farm and increase the facilities which the Society can render, and I present that resolution, and with your consent I move its adoption."

Motion seconded.

MR. CONANT: "It is moved and seconded that the Pomological Society adopt that resolution."

So voted.

MR. CHASE: "In regard to that resolution which we passed, the varieties named were seven in number, but I wish to be understood, the same as Dr. Twitchell has said, that the hands of the Society are not tied by that resolution."

Afternoon Session

MR. WHITE: "The retiring member of the Executive Committee is Mr. Yeaton instead of Mr. Lee. I made a mistake this morning; so it should be corrected at this time, and finish the morning business. W. H. Conant resigned and G. A. Yeaton was elected for three years."

Apple Growing as an Industry

Address by Mr. John Chandler, Sterling Jct., Mass.

"Mr. President and Members of the Pomological Society:

This is the first time I have had the honor of being invited to come to Maine, and I come with a great deal of pleasure, because I am one of the people who believe that Maine is the greatest State in the Union. Ever since I was four years old, we have been coming to Maine in the summer time, down to Small Point, which is in Phippsburg township, and we have always had the most cordial welcome from the people of Maine. I have a great many friends in this State, and if it wasn't for certain controversial matters we have at home over such details as schools and town water, etc., I should want to become a voter and a citizen in the State of Maine. But at the present time, in order to defend *our* local rights in the great State of Massachusetts I shall probably remain there. But I really have a very warm feeling for the people of Maine, and for Maine, and I still believe that it is the greatest State of the Union.

Now I have been asked to talk on apple growing as an industry, and I may wander considerably from the subject, but I hope that you will bear with me. I suppose you have all seen the reports of the result of the survey of the apple industry made in several New England States last year, showing how decidedly the apple industry in New England is on the increase. And I think that is very significant, when we remember what inroads the northwest, with their wonderful potash soil and their tremendous production and their necessity for organization, forced on them by lack of markets, have been made upon New England fruit growers. In fact, the development of the west has made a tremendous

impression, as we all know, on all our agricultural propositions here in New England. Our live stock industry, aside from dairying, was taken away some years ago with the development of transportation and refrigerating facilities and opening up of the plains in the west. A great deal of our grain industry has gone, and I understand now they are even furnishing the dairy industry with improved facilities for bringing in dairy supplies from the middle west. So that, of the basic industries of agriculture, our poultry and fruit and dairying, and perhaps one more here in Maine, I should say potato growing, are the few that are really left to us that are common all over New England.

The apple growing industry, of course, has undergone a tremendous change. Up until about 1910, an apple was an apple with us here on the small farms which supported large and fine families a generation ago, and supplied the vigor and brain that went all over the United States, made up largely of small fields with apple trees around the walls, and now and then a small orchard near the back door. That has all disappeared, or is all going; because about 1910 the development of the northwest had come to that point where they found that their orchards which they had planted, under artificial stimulation, were coming into bearing, and they found they had no market. They were way off there in the woods, and they couldn't sell their apples. And the result was that they got together with their packing associations and selling associations, and they put up a pack and came into our markets with such apples as our people at that time had never seen; and we all know the result. We know the results very well who live near markets like Boston and New York. Our markets were simply gone. Our ordinary farm apples of twenty and twenty-five years ago, which were apples before, were culls. And that condition, as far as the old farm apple goes in my state, and I imagine it is true over all New England, is so today. The old farm apple is just about a cull, and there is no market for it.

As you know, in the history of New England, and it is true in Maine, if not more so than in any other part of New England, it just takes a little adversity to get a Yankee up

on his ear and get him down to business. While everything goes along smoothly, and we are lulled with the feeling that the world is well, outside influences creep in, and the next thing we know, we have to get down and fight.

Not long ago I heard your Governor, Governor Brewster, say that it was a mighty good thing when the Pilgrims came into New England that they came to land at Cape Cod and Plymouth; and it was a mighty good thing that it was winter time, because if it had been summer the conditions would not have been rugged enough to suit their stern characters, and they would probably have gone to Labrador, or somewhere like that, and we would have been originated by nobody knows who.

That has been more or less characteristic of New England people, if they are up against a tough proposition they get to work and meet it. We know today that our textile industries that were thriving and going along comfortably not so very many years ago are right up against it, with the result that a good many of them are failing and quitting. But the old backbone of New England is there. The old pioneer blood is coming to the front, and they are turning to new things, new methods, new ways, and they are going to win out, just as the railroads have won out, I am quite sure.

We all know that our fruit growers have met the situation. We have looked around, and we have found out that our McIntosh and our Baldwins and our Spies are apples that we can grow to perfection here, and when they are grown to perfection they beat anything that is grown anywhere in the world. There isn't anywhere where you can get apples that will touch our flavor, and you have only got to go in the hall there and see the finish that we can put on McIntosh and Baldwins and Spies, and as years go on we will probably discover other varieties, and with that as a starting point, our farmers will discover that if they put other trees in their orchards, and have enough of them to take care of the overhead expense, that they can grow fine apples,—just as fine as they can in the northwest, and they have them beaten a mile, as far as flavor goes. We know that, and it is generally admitted. So the great change

which the development of the northwest has made upon New England apple growing is that it has taken it from the farm and turned it more or less into a specialized industry, and that change is going on all the time, every day, all over New England. People are cutting down the old Tolman Sweets and what we call 'American Beauties' and you could name countless varieties strung along the walls, apples that used to be apples and used to sell and used to supply a respectable part of the farm income. They are cutting them down; but for every tree that comes down there are at least two trees being planted in the orchards,—well cared for orchards,—orchards that are big enough to support good spraying and dusting machines and pay for labor to take care of them, and that change has been going on and is going on all the time, and it is bound to continue, because we all know now, more or less—it is becoming more or less true, that it is only the fine apples as a rule,—good apples,—that will sell, when the northwest can send in good looking fruit in volume in the condition that they have been in the last twenty years.

Now with this new development in orchards, of course there are growing up a group of men whom you might say are orchard specialists of necessity. They have to have a considerable farm, and they have to give a lot of time and thought to it in order to get results. And this group of orchard specialists, or orchardists, we will call them, are necessarily connected with the future of the industry. We are all interested in the industry. Our livelihood comes from it. And that brings up this matter which you have already tackled in Maine, of the possibility of a uniform grading law for New England, which has been under discussion for some years. There is no doubt at all in my mind that the northwest would be nowhere if they hadn't got together and made their grades fancy, extra fancy, that we know so well in the markets today. If they hadn't made them the standard for all their apples and in all the markets of the world, they wouldn't have won out as they have. They simply stamped those standards on everybody's mind. It wasn't that one fellow had one idea of grades and another fellow another. They did the job completely and took our markets with them. Now I want to ask you where will the

northwest apple industry be if New England keeps pressing hard on the markets of the country? For our figures have shown that in a very few years New England will not only have supplied all the apples she uses herself, but will be seeking outside markets in this country. I mean she will be invading the fertile plains of the west, Chicago, Pittsburgh, St. Louis, Cincinnati, and when that time comes, if we aren't prepared here to put on those well recognized brands, well recognized standards of A's and B's and Fancies and Extra Fancies, whatever we want to call them, it is going to take years and years and years before our quality that we can raise and the finish that we can put on our fruit will be recognized as a standard of New England.

This next I have to say is more or less personal,—ideas of what the uniform law should include. But I think that we are going to have a uniform law for grading in New England, and I know it is only a question of time when we have got to have some uniform law that we can agree to. There are two or three fundamentals that have got to be in it. In the first place, I believe it has got to be compulsory in order to be completely effective in the outside markets. In the second place I think this specification—or that isn't the word I want—the part of the law referring to marking—I don't know how familiar you people are with the law referring to marking. It has got to be elastic enough so that they can be applied to grades and private marks already established in the market. I don't think that we ought to take away anybody's present method of marking his fruit with his own brands and names on them in any way, or change them. But make this matter of marking with grades, whatever grades you decide, elastic enough to apply to brands already established, and also elastic enough so that they can be used in the most up-to-date packing methods. At the present time we require too much to be put on labels for proper adaptability to an up-to-date packing plant. Now it isn't necessary. We can get along with less marking and less, we will say, jumbling up a man's established mark.

Thirdly and lastly, I feel that our uniform law, whatever it is, must be high enough so we can capitalize the quality and the finish that we are able to put on our fruit here in New England so that we can grade our stuff high enough so that you people who raise those beautiful Spies and McIntosh will be able to get well paid for what you put on the market. I believe that we people in New England can stand a higher grade than they can in New York State, and you must all admit that we can produce Baldwins of much higher color, call them A grade, and have the majority of our stuff go in. There isn't anywhere in the world, I suppose, where they can produce such Spies as you people here in Maine, and I am sure I never saw better McIntosh in my life than you have got right in there on the floor; and with those three varieties, if we can have our standards high enough and be able to live up to our standards with those grades, we can go out from New England and capture any market and the northwest won't come in any more than they are coming into Boston now and trying to compete with the McIntosh. They simply withdraw until the McIntosh is over. So much for the uniform grading law.

Now as I have pointed out, the great change which has taken place in the apple industry is the fact that it is becoming more and more every day specialized business. And as it becomes a specialized industry, we are all the time getting away from that old desire for safety that has been preached to us for years and years, of having your farm enterprise diversified so that when your apples fail your potatoes will carry you through, or your cows will carry you through; and that is the standard we have all been brought up on. But when you get into apples more and more, relying on your volume to carry your heavy overhead expense, spraying equipment, etc., in order to produce fine fruit, you have got less and less time and mind and opportunity to work a diversified crop that will mean anything if your big apple crop fails. I should say, if anybody were asking my advice, that the safest way for a man who has found himself really in the fruit industry,—the apple growing industry, is to diversify along lines similar, that is, possibly other fruit lines. It seems to me that it has worked out that way

pretty well with peaches (I don't know as you can grow peaches in Maine), and pears, and small fruits and by-products, such as jellies, jams, and hard cider, and things of that kind. But if you are putting your whole mind on the matter of growing fruit and you are trying to do your spraying just the right time, and you are trying to do your thinking and your cultivation and everything to make your big crop, which is probably your apple crop, come through in fine style, it is pretty hard work to have to go into something entirely different,—to have to take yourself away and your men away for some entirely different crop that doesn't in any way fit in with apple growing.

But we are getting away from diversity. There is no question about it.

I thought that I would bring up to you people here today some figures from my own orchard, where I have no diversity. It is entirely an apple proposition from start to finish. I thought it would give you some idea of the relation of one kind of expense to another, the importance in volume as against the importance of price, and other things along that line. Now if you will excuse me, I will read some of my own figures, which may be of interest to you, because we are talking about apple growing as an industry.

In 1926 we had a big apple crop for us. That was about 15,000 bushels. And in 1924 we had a short crop, 4,200 bushels. Now I will give you these summaries first. In 1926,—that was the year that we had our big crop,—last year. Our cost of raising that crop last year was \$1.24 a bushel, and that means all the expenses,—everything, until the apples were sold. In 1924, the year of the short crop, when we had four thousand and a little more as against 15,000, our expenses per bushel were \$2.41. We didn't have bushels enough that year to spread around over the expense. The harvest expense was just the same, whether you have a few or a lot, as far as we make out, on our farm. We found that in 1926, last year, was 73 cents a bushel; in 1924 it was 83—not much difference. But all the other expenses, which includes such things as pruning, fertilizing, mowing, cultivation, thinning brush, scraping, and rent, interest and taxes,—those are the things that

count when you have got all your eggs in one basket. If you have got a lot of apples and can divide those general expenses over a lot of bushels, you can get those things way down in the per bushel cost. If you don't have many, you get a higher per bushel cost.

Now in the year 1924, when we had the short crop (this will interest you, I know) when our costs were \$2.41 per bushel, we got a great price for our apples, the best price we ever got, and probably the best price we ever will get, but our average net return, that is, sales with commission out,—the money we got back, was \$2.44, so that we made a profit of three cents a bushel. When we got all through, we got \$120 for our year's work.

Last year, you know, prices were low. We had 15,000 bushels. Our costs were \$1.24, and our net sales were \$1.84, which I think was a pretty good price last year, making a profit of 60 cents a bushel on a very low market on 15,000 bushels. So don't ever forget, and don't let these people tell you, because I don't think it works,—I can't see that it does in my figures, and we keep our figures very carefully, that a short crop and big prices in the apple business, where you are carrying a heavy expense right through the season, whether you have one apple on a tree or a thousand—don't let them tell you that a small crop and big prices pays in the apple business, for I don't believe it does. We can't see that it does, and I am very sure that this year, when we have another case of short crop and high prices, is going to be just as disastrous as it was three years ago.

Now I think perhaps I have said about all I ought to say. I should be very glad to try to answer any questions if anybody has any. I have enjoyed coming here very much, and I am a great believer in the apple business, but I think we must all remember, as we are working into a specialized business, and we are certainly doing so, that there are certain factors that we have got to watch. We have got to remember that what we get out of the business is the prices we get less the cost from the volume. If you don't get the price, you aren't taking good enough care. If you have got to put in more care, in order to pay yourself, you probably have got to have a greater volume. It is the price you get,

less the cost, that makes what we get out of the apple business; and with an industry that is getting specialized as it is, requiring as much care to produce fine fruit, expensive machinery, good help, and all that sort of thing, it takes quite a volume to get away with it. Now I will be glad to answer questions. I thank you very much."

Question. "I would like to inquire what your varieties are."

Answer. "We raise largely McIntosh. We have Baldwins and Spies and Rhode Island Greenings; and we have Delicious coming along, and some Cortland."

Question. "What do you think of the Cortland?"

Answer. "I don't know what I think of it. There are people in New York State who have a great deal of confidence in it. Our situation in regard to Cortland is something like this: It comes back to talking about Baldwins. Baldwins are a dandy crop for a farm orchard, but for an orchard specialist a Baldwin isn't such a crop, because you can't get a crop every year, so we are running our expenses two years for one crop, and also, when we get a Baldwin crop prices are generally low, so we are looking for some variety to take the place of it. We don't know what it will be. That is why I am taking a shot at Cortlands."

Question. "Is the Delicious the red one?"

Answer. "Our Delicious, I think, is going to be very good."

Question. "Have you got the red one?"

Ans. "It is a red Delicious, yes, but it isn't the very red Delicious."

Short Talks on Spraying

By Lyman K. Lee, of Foxcroft

"Mr. President, and Members of the Pomological Society and Friends: When President Conant asked me to speak on this topic I assumed that he didn't wish a treatise on spraying, because he would have asked an expert, but I took it that it would be in the nature of an experience meeting, or something of that sort, so I have not prepared any address, but come to tell you a little about my own orchard and what I

do in it, and what results I get, and you will have to judge whether they are good or bad. I certainly know that they aren't all good.

I imagine I have the distinction of having the most northerly orchard of any size in the State of Maine. I haven't looked into it very carefully, but I am some twelve or fifteen miles north of the 45th parallel. My orchard is four miles from where I live. The roads to it are bad. It makes it a little difficult to get there in the spring to spray at the proper time, and to prune. On the other hand, I have no other visible means of support, and have to give all my time to it, and am not bothered with potatoes or corn or anything else to interfere.

I have, perhaps, a couple of acres of old orchard, and the rest I have set myself between 1910 and 1917, except for replacements, which have been considerable. My varieties are McIntosh, 400 trees out of 900, and the other varieties are Milding, Wolf River, Spy, and a few Tolman Sweets. I use a power sprayer now, with a four horse power engine, 200 gallon tank, and carry a pressure of about 350 pounds—between 325 and 350 when it is working right.

The scab is very much in evidence up there, and is the thing I fear, and I get after it the best I know how. Last spring I remember that, being well to the north, our season is later. When the foliage began to show, about the 19th of May, I started the sprayer, hoping to get in about two sprays before the time for the Calyx spray, but it was the third or fourth year of the sprayer, and one thing after another gave way so that I was from the 19th to the 24th getting over it once, and part of the time I had 125 pounds pressure, so I didn't do just exactly as I wanted to do before the Calyx spray, which came along about the 11th of June with us, using for both of those sprays liquid lime-sulphur, 1½ gallons, arsenate of lead 1½ pounds to 50 gallons. I sprayed the 9th to the 11th of July on the McIntosh only with liquid lime-sulphur, 1 1/8 gallons, and the same amount of arsenate. I also used Black Leaf 40 on the younger trees where aphid was working. The first week in August I sprayed the whole business,—every tree, with liquid lime-sulphur, about one gallon and perhaps one-eighth, and being

nearly out of liquid material I used some dry lime-sulphur on part of the McIntosh, using $3\frac{1}{2}$ pounds to 50 gallons, and used no arsenate on the McIntosh at this time, but used arsenate on the other varieties that didn't get it in July. That was all I sprayed. One year, some years ago, I sprayed later than that, but there was a residue of lead that showed on the McIntosh and I preferred to take a chance rather than to spray later than the first week of August.

As to results: The Wolf River and Spy were practically clean, probably not more than one or two per cent scab. The McIntosh I should say had about seven per cent of scab. The Milding, I don't know that I figured it exactly, but perhaps a little higher than that—ten per cent of scab.

Now I think myself that I needed that extra spray early. I presume if I had made some of those other sprays a little bit stronger of lime-sulphur it might have made a little difference; but that is what I did. I don't know that I have anything more to tell unless someone wishes to ask questions."

PRESIDENT CONANT: "Our next speaker is Ralph Litchfield, of Sanford, who is not here."

DR. FOLSOM: "Mr. Chairman, if he isn't here, I can give you a little information about his methods myself."

PRESIDENT CONANT: "I wish you would."

DR. FOLSOM: "This orchard was one of several commercial orchards that the Experiment Station had to do a little work in this summer, and to me it opened up something that we didn't have much evidence on. You have heard a good deal about the effects of spraying—cumulative effects of spraying, both as a means of controlling scab, also on the other hand the effect of hurting the trees.

I understand from some workmen that I met there that some years ago the orchard that Mr. Litchfield has was run down—wasn't working well. He took hold of it, and two years ago he sprayed it about thirteen times, and last year he sprayed eight times, and this year seven or eight times,—something like that. We went into the orchard with the county agent a year ago this summer and found very little scab, I think better control than in any commercial orchard we have been in. We found in about half the orchards we

were in that the infected trees were making trouble. This summer we left some trees unsprayed in his orchard, which we did on Highmoor Farm. We got practically no scab, however, in Mr. Litchfield's orchard. The unsprayed trees had very little scab on the leaves. The fruit had very little scab. In the exhibit in the next room you will see two plates that came off the unsprayed trees of Mr. Litchfield. There was one scab on one apple about as big as your thumb nail. On another apple there are some spots, in the aggregate about the same damage. Those are the two most scabby apples on the unsprayed trees in Mr. Litchfield's orchard. The County Agent took this viewpoint, that it was a very poor demonstration. He said it didn't show very well the effect of spraying. That is, where he didn't spray at all he got practically no scab; but the way I look at it it was a very good demonstration of the effect of spraying last year and the year before, because in the vicinity even Baldwins were pretty scabby, and I think all over the State this year, where not much spraying was done the last two or three years, and spraying was left off this year or not very thoroughly done, there was a good deal of trouble. It seems to me that Mr. Litchfield reaped the results of careful spraying for the last several years. That may be wrong, but it is the only result I can come to from all the evidence I have."

MR. W. H. CONANT: "In view of the situation, I wish to resign as a member of the Executive Committee, my resignation to take effect immediately. I am too busy selling McIntosh to undertake it."

It was moved and seconded that Mr. George Yeaton be appointed to take the place of Mr. Conant, just resigned from the Executive Committee, for the next three years.

PRESIDENT CONANT: "If there is no objection, the secretary will cast the ballot for Mr. Yeaton as member of the Executive Committee, and the same having been done, Mr. Yeaton was declared elected."

Dusting

By Ralph E. Campbell, of Greene

"Mr. President and Members: I don't know as I can say a great deal, but I will try to say a little something in regard

to dusting. I am situated up here on the Saunders farm, just over the Lewiston line in the town of Greene, and this is my first year of dusting, so I don't really think I ought to say too much because I have always been a spray man. But I went there a year ago this fall and took up the work and started in this spring with a dormant application. I used the dormant dust. There was considerable oyster shell scale there at that time, and we cleaned up a large percentage of the oyster shell with the dormant dust, and after the dormant we put on the new fine dust, and in my mind there was a doubt whether it was taking or not. I couldn't see it, so I got in touch with Mr. Howard, and he said he didn't think we need to worry; and I still wasn't satisfied, so I went to work and got a compound microscope to look at those leaves with. The one I got magnified 30, 50 or 70 times, and I found the one using the three lenses, magnifying 70 times, was what I wanted to use, and there was no question but what the dust was sticking all right. There was plenty of it, when you looked at it under the microscope.

After the pre-pink and pink and the calyx of this dust, we put on a ten-day, using a three in one nicotine, because the aphid had begun to show up. That also did pretty good work cleaning it up. At that time we stopped on part of our Baldwins without any more application, and the remainder of the Baldwins we put on one more. With the McIntosh and Ben Davis we put on enough so it made eight applications—complete applications, and on the Baldwins, which we stopped with what is known as the ten day application, it was the poorest lot of stuff that I had, and even with the Baldwin, there were considerable small scab spots on.

And then another thing I might bring up is when I was putting on my dormant application the buds came on pretty fast this spring. We had quite a bit of hot weather there just about that time. I didn't finish with my Ben Davis, and those I didn't dust had considerable more scab than those that I had dusted.

And our McIntosh,—we raised a little better than 500 barrels of them,—they were practically free from scab, with the exception of what we got on a little stumpy piece that we couldn't get in with the duster, and that little piece was all

scab. I don't know as there is much of anything else that I can say in regard to dusting. If there are any questions, I will try and answer them."

Question. "Do you dust any time of day?"

Answer. "No, sir. There is another question I meant to bring up. I started in to dust when the wind wasn't blowing, any time, that is, whether it was the middle of the day or whether it was in the middle of the night, but I changed my method to dust entirely from daybreak until around six or seven in the morning, and then after the sun went down at night I continued as long as I could see, when the trees were a little damp. I found I got more dust to stick than I did to dust in the middle of the day, even if there wasn't a wind. But I didn't get much chance to dust in the middle of the day anyway, because usually there was a pretty good wind."

Question. "Personally, what do you like better, to spray or dust?"

Answer. "Well, now, I am going to tell you. If I owned a small orchard that I could handle with what help I would naturally have on a farm,—say I had my son, and I took a horse and wagon and went out and sprayed, I could do it cheaper than I could dust. And if I had a large proposition, as I am on now, where we hire all the help, I think I can do it fully as cheap to dust. And I am inclined to think it is a toss-up—it wouldn't make any difference, so long as you go ahead and spray or dust thoroughly and get it on at the right time. I think you would get just as good results with the one as the other. I would like to have a sprayer and a duster on our place and watch the difference between the two, but I am afraid there wouldn't be any."

Question. "Aside from the question of results and profits, personally which operation do you prefer to carry on? One is disagreeable in some phases and the other in another?"

Answer. "Well, on the proposition I am on now, I should say all you could use would be dust."

Question. "One man prefers to dust, and another man prefers to spray. Most people do better what they like to do. Now one man doesn't like the sulphur in his eyes, and

the other man doesn't like the lime-sulphur solution on his fingers, and so on."

Answer: "Well, I have no doubt that when it comes to what I rather do, I would rather dust than spray, because I don't think you get quite so dirty if you handle it right."

MR. CHANDLER: "I would like to ask one question. Is the codling moth an important pest here?"

Answer: "Why, last year I went up to the place and was there just at picking time, and they had considerable in their Baldwins of codling moth injury. This year we had practically none."

MR. CHANDLER: "I wanted to know if your dust controlled your codling moth all right?"

Answer: "Yes."

Dusting

By Mr. W. H. Conant

"Mr. Chairman, Ladies and Gentlemen: After what the last speaker has said, it seems almost useless for me to attempt to say anything. He has covered the field very nicely. I think perhaps I might say just a word or two along a little different line. Why do we consider the dust in any case superior to spraying. And I think he perhaps answered that question. One is that you can dust, and dust effectively and thoroughly under conditions, rough conditions, where you can't spray very well, with a heavy tank. I also feel that he hit the nail on the head when he said it is a toss-up as to whether you dust or whether you spray, provided you know what you ought to do,—when you know what your job is when you start out. I have said if I were going to score a man's outfit and the man, and score him and his equipment and the whole business, I would score the man 75 points and give the other 25 to his equipment and conditions under which he sprays, because the man behind is the big thing in spraying those apple trees, to my mind. Because this was very noticeable this year. You go into a man's orchard where he had dusted very thoroughly as he thought and got very little to show for it, and the same with spraying. Men sprayed eight or ten or a dozen times and couldn't see any advantage in what they had done.

Now there is something wrong somewhere, and I think there is no doubt but what a lot of it was by not knowing how to time those applications, whether it is spray or dust. In my report this morning from the Experiment Station Farm, the pathological department, you will notice that the ascospores, which start your first infection of apple scab, were mature, ripening, ready to shoot off much earlier last year in New England than they had been for years. Now the last days of March,—remember the date, now,—and the first two or three days in April, the men were out trapping ascospores on the college campus at that time. Now imagine it,—and perhaps some years he wouldn't get anything for a month. But I think that gave an indication of just what we have gone through this year. And then the weather conditions were favorable for their maturing and shooting off for quite a long period, especially through that long wet spell. It didn't seem to me we could possibly get by. I think if you were to check up pretty thoroughly the men who sprayed and the men who dusted, that you will find that the early applications last year,—last spring, were the ones that got the results for the grower in about every case. Because where you don't check the spores getting into your foliage when it is young, you have apple scab and you have a plenty of it. Your check trees that weren't covered demonstrate that. It was a question of timeliness.

Now I don't advocate that we are ever going to be able to know just when apple scab spores are shooting off, but we don't care how they are shooting off before our foliage comes out on our trees. I don't begin to worry until I see the buds burst open and the little leaves start out. I don't mean to worry very much about apple scab spores, but the minute those little leaves begin to get as big as your finger nail, or something like that, I begin to worry, because if conditions are right for the spores to shoot, that is the time that primary infection will begin to start right on those little tiny leaves. Now you can verify a lot of this stuff. You haven't got to take my word for it. If next year you have some apple scab you start out along the last of June or July and begin to look at your leaves, and there are those little tiny leaves that never get much bigger than your thumb nail,

perhaps not as large as that; and they have scab spots where you can see where that little round infection that took place in that little first leaf right there, that to my mind, started your infection. So it seems to me that year in and year out that that early application is by all means the most important one that we can put on. In other words, it is easy to keep putting off from day to day that first application of spray or dust.

Now then again, last spring we had some warm days and the leaves shot out. And then it came off cold and those leaves wrinkled all up and they didn't grow a mite for practically ten days, and it made it awfully hard to tell whether you should dust or whether you should wait until after that cold spell was over. And lots of men did wait, and they waited 24 or 36 hours too long (I am perfectly satisfied of it) and got an infection. But I think that as a rule we have got to start in when those leaves are small and young and then try to get a good coverage. The speaker covered the matter of getting coverage and application. If you are going to spray you can't go out and spray with the wind blowing forty or fifty miles an hour and get any coverage with the best outfit in the world. I challenge anybody to question that statement. It don't amount to a Harry in Texas, as the old saying is, to go out and attempt to dust with the wind blowing. You better save your material and lie down on the couch and have a nap. It is time and money wasted and thrown away, and there has been too much of it in the last three or four years—too much spray material wasted and too much dust wasted.

Now the ideal time to dust is early in the morning, as the previous speaker said, or in the evening. I don't care how heavy a dew you have got on. If you are using soluble sulphur dust, pile it right on and you get a nice coverage. It sticks and will hold and hang and protect your foliage. We go out with the trees just covered with little drops of moisture and you can stand and drive that sulphur in there until it is a mass all over those leaves. Now you have given some protection in that case, a whole lot of it, and it will stay on there quite a good many days. But of course those leaves are growing. They have got to be covered again, be-

cause they soon throw out new growth. The McIntosh pushes out foliage awful fast, you know, and you have got to follow that up and keep those leaves covered. That is all there is to it. It is just the same with the dust and spray, to my mind. Keep your leaves covered. You can do that better by dusting under damp conditions and late in the evening. When the atmosphere is heavy you get better coverage, some way, a great deal better coverage than in the daytime with the sun shining. You get a better coverage with less material under those conditions, because you go down into an orchard and go along dusting a tree, and if a tree spreads twenty-five feet you can pass by it slowly and you can fill that tree solid full, a regular smudge, so perhaps it is two or three minutes before you have an opportunity to look into it. It is a smudge. That is the way you get results. Why, the atmosphere is so heavy that there is no air current, and it is so heavy that it stays right in that smudge there—and you are bound to get a nice covering and nice protection. Now that is the way.

Now contrast that with going out here in the wind and opening up and seeing the stuff going for miles, and when you have got all done you can't see a thing on the tree. Now that, to my mind, is the way to dust, and while you are out there, put on some. And the same with spraying. Get a good coverage. And that has got to be followed up.

Now this year, also, the wet weather lasted away into July and August, and I think that the last application that we put on gave us fine results. I think we cut down the possibility of storage scab development tremendously by the later application. In other words, I am going to advocate and do advocate to everybody what I call a real program; starting in with at least the pre-pink and following that up down through the growing season into August before you stop, with five to seven applications, according to weather conditions. Last year we could get by with five applications and have better results than we could under the tremendous weather we had this year with seven.

But it is up to the man who is running that thing to know when he ought to put one on, and not sit around and delay and talk about it, but get out and do it. And to my mind I

am dusting because we can do it quicker and do just as thorough a job and get just as good results. Not any cheaper. I don't claim that it can be done cheaper, but I much rather dust and have it over within a few hours than drag around fifty feet of hose all over Christendom and be days and days doing it. Now that is why I am dusting, and I think the reason why so many fell down this spring was that they were dragging around three or four days too late."

On motion it was voted to adjourn.

the fact of my only child's death, and the
 fact that I have no other children, and
 that I have no other property, and that
 I have no other means of support, and that
 I have no other friends, and that I have
 no other means of support, and that I have
 no other friends, and that I have no other
 means of support, and that I have no other
 friends, and that I have no other means of
 support, and that I have no other friends,

and that I have no other means of support,