

MAINE STATE LEGISLATURE

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MAINE PUBLIC DOCUMENTS

1946-48

(In three volumes)

VOLUME I.

Maine

DEPARTMENT OF AGRICULTURE

JULY 1, 1946

Biennial Report



JUNE 30, 1948



STATE OF MAINE

BIENNIAL REPORT

OF THE

Commissioner of Agriculture

TO

His Excellency the Governor

AND

Executive Council

July 1, 1946 to June 30, 1948

**OFFICE OF THE COMMISSIONER
MAINE DEPARTMENT OF AGRICULTURE
STATE HOUSE
AUGUSTA, MAINE**

*To His Excellency, Governor Horace A. Hildreth, and
Executive Council:*

Sirs:

In accordance with the revised statutes, I herewith submit the biennial report of the State Department of Agriculture for the period beginning July 1, 1946, and ending June 30, 1948.

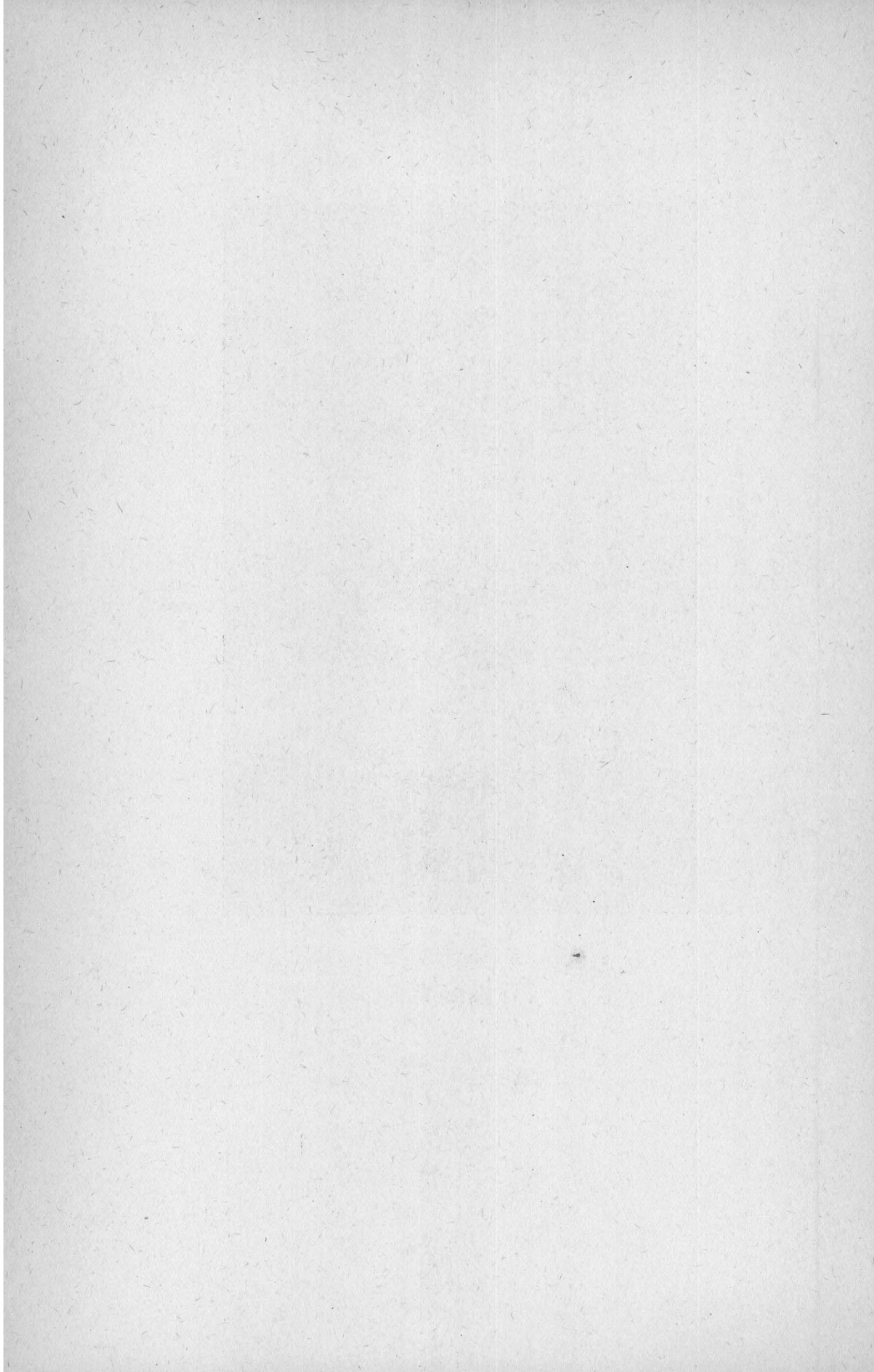
Respectfully yours,

A. K. GARDNER
Commissioner



A. K. GARDNER

Commissioner



MAINE DEPARTMENT OF AGRICULTURE

Commissioner

A. K. Gardner, Orono

STAFF

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<i>Horticulturist</i>	Edward D. Johnson, Monmouth
<i>Deputy Sealer of Weights and Measures</i>	James A. Boyle, Portland
<i>Chief Inspector, Certified Seed</i>	Everett Westin, Caribou
<i>Chief Inspector, Insect Control</i>	Nelson R. Trafton, York Harbor
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Maine potatoes on display at the State of Maine Building, Eastern States Exposition, West Springfield, Massachusetts, in September, 1947. Attendance at the Exposition that year, the post-war opening, established a record of more than 250,000 people.



The Maine State Seed Potato Board. Left to right: Guy Hewitt, Mars Hill; A. K. Gardner, Commissioner of Agriculture; David D. Daigle, Fort Kent; Elmer J. Leland, Sangerville; Edwin E. Parkhurst, Presque Isle; Andrew J. Porter, Sherman Mills; S. A. Wathen, Fort Fairfield.

Report of the Commissioner

Receipts from Maine farm crops and livestock have increased annually during the biennium. Cash farm income (not including government payments) for the year 1945 stood at \$130,109,000. The 1946 figure was \$134,629,000, and that for 1947, \$175,802,000. Nevertheless, some Maine farmers have found themselves losing money despite advancing prices. High costs of labor, all materials and equipment, have been hurdles some agricultural industries could find no way to clear.

Because of an overproduction of potatoes, Maine growers, in common with those in other areas, have been severely and unfairly criticized by the press and radio and by consumers. Obviously, those in charge of the program over-estimated the demand, or underestimated probable yield. This situation calls for better public relations development on the part of agriculture in general, and the potato industry in particular.

Despite energetic protests and logical briefs submitted by the concerned industries, blueberries and potatoes, some Reciprocal Trade Agreements present us with unfair competition. With representatives of industry groups, and the Maine Congressional delegation, we had testified before the Reciprocity Information Committee in January, 1946.

The Maine Department of Agriculture has endeavored to participate, and to lead when the occasion was proper, in regional and national meetings of officials and farmers seeking to protect the farmers' interests, believing that the best interests of farmers in the long run mean the best interests of all our citizens. We have consistently sought the best information and advice available, and we have tried to use them where and how the most good could be done.

Market gardeners in the Portland area sustained losses from drought in the very first month of the biennium, and although rain came shortly to mitigate damages from that first weather trouble, which extended to central Maine on acreage devoted to the raising of peas, the situation was a forerunner of our drought and the consequent fires of 1947.

Damage to crops by deer have shown substantial increase in the post-war period. In the fall of 1946 our Fish and Game Department advised hunters to "gun farm lands this fall," because of an estimated doubling of deer damage claims from 1945-1946. The situation has not improved.

A re-survey of fifty-eight closed clam areas along the Maine coast was arranged in September, 1946, at a conference between us and representatives of the U. S. Public Health Service, the survey to be a joint project of the Sea and Shore Fisheries Department and our own agency. The last sample in this survey was taken April 25, 1947.

Maine's 1946 blueberry crop, amounting to 267,562 bushels, was sold at a record price, receipts averaging more than \$8.00 per bushel. The crop was 27% larger than that for 1945 and a decided contrast to the record short crop of 1944, only 83,410 bushels.

In early 1947, the Legislature repealed Maine's thirty-year-old farm lands loan law. The Farm Lands Loan Commission, of which State Banking Commissioner Homer E. Robinson was the last chairman, was abolished.

Emergency Legislation passed at the 1947 session permitted sardine canneries to open on March 1st instead of April 15th, the legal opening prior to the war emergency period. Passamaquoddy Bay factories alone received 10,000 bushels during the first two days of the season and by March 7th, thirteen canneries were in operation.

In the spring of that year, publication of comparative census findings for 1940-45 led the Census Bureau to point out that the trend was to fewer but larger farms with fewer farmers and larger production. This trend has been evident here.

We found it necessary to ask Governor Hildreth to issue, on August 6th, an executive order prohibiting entry into Maine of potatoes from Nassau County, New York, where acreage infested with the Golden Nematode had been discovered. A week earlier, we had discussed the infestation with other New England Departments of Agriculture and had begun a rigid check of Maine markets and potato processing plants for possible infested shipments. As early as the next month, we received confirmation of our belief that we had been wise in seeking to exclude all Nassau County shipments, although the actual infestation was first reported to affect only some 4500 acres. In September, infestation was found on a farm eight miles from the center of the earlier known infestation of the Nematode, and the New York Department quarantined some 3,000 additional acres.

The dry summer of 1947 was felt first by our dairymen. The hay season was described as "terrible" by the Dean of the College of Agriculture. As the summer progressed, many farmers found themselves carrying water. With the prevailing labor shortage, the drought brought not only increased cost, but many extra hours of back-breaking work and ultimately, serious danger, and loss to some, from fires.

Fryeburg Fair inaugurated the first "calf scramble" in the New England States in the fall of 1947. The event, in which sixteen boys competed for fourteen calves offered by breeders willing to accept \$50.00 per calf upon sale of the animals at the next year's auction, was a success. It will be repeated in 1948.

As secretary of the Maine Building Committee for Eastern States Exposition, the Commissioner of Agriculture worked with other State department heads to aid the Committee at the re-opening at the State of Maine Building at West Springfield during Exposition week in September, 1947. During that period the Avenue of States drew record crowds and much favorable comment was given to the State of Maine Building. It housed displays of agricultural, recreational and industrial facilities. Two new policies were established at the re-opening of the Exposition, both at the request of Exposition officials. The Maine Building acquiesced in eliminating commercial displays, and joined with the other states having buildings in a rotation program under which duplication of featured displays could be avoided.

Our Maine State Seed Potato Board, established by the Legislature of 1945, has continued through this biennium with the membership originally appointed. These men have given freely and generously of their time, and during this period have established a State Seed Potato Farm at Masardis. This purchase and progress achieved is described in detail in the report of our Division of Plant Industry, the chief of which, Mr. E. L. Newdick, is Seed Board program administrator. The Commissioner of Agriculture is ex-officio chairman of the State Seed Board. The members of the Board are: David D. Daigle, Ft. Kent; Guy Hewitt, Mars Hill; Elmer Leland, Sangerville; Andrew J. Porter, Sherman Mills; S. A. Wathen, Ft. Fairfield; Edwin E. Parkhurst, Presque Isle.

Maine hatcherymen have done pioneering work during the biennium. Early in the period a Winterport concern inaugurated air shipments of baby chicks and in the summer of 1947, a Winslow

firm began using an insulated temperature-controlled trailer in shipments to the South.

The adoption of the so-called Boston formula to determine the price of milk in the Boston market required the Maine Milk Control Board, of which the Commissioner of Agriculture is an ex-officio member, to adopt a formula which would maintain the Maine price in line with that at Boston. This has required considerable study and a great deal of attention to the needs of producers, dealers and consumers, as relatively small fluctuations of prices at Boston and in Maine might bring about inopportune diversion of milk from one market to the other.

There have been several personnel changes in the Department during the biennium. Charles M. White of East Winthrop, chief of the Division of Markets for 26 years, retired at the end of 1946. Governor Hildreth wrote to me as follows concerning Mr. White:

"During all these years, his devotion to duty, his character, and his faith in the principles that have made this state great have endeared him to thousands of Maine citizens. That Maine has prospered so much in the past quarter of a century is a fine tribute to men like Charlie White."

George H. Chick of Monmouth was appointed to succeed Mr. White. Mr. Chick served as Mr. White's assistant during the last ten years of his work. He entered the employ of the Department in 1927 after being graduated from Bates College.

Gardner K. Heath of Augusta, Deputy State Sealer of Weights and Measures, retired on May 1, 1948, after 22 years of constructive and efficient service. A. M. G. Soule, chief of the Division of Inspection, which includes the detailed work of the Deputy State Sealer in its administrative setup, says, "Gardner Heath was a devoted, energetic worker who spent most of his active life in Weights and Measures work, and was widely known and greatly respected."

Mr. Heath was succeeded by James A. Boyle of Portland, who had been employed in his home city as City Sealer of Weights and Measures for thirteen years. Boyle is vice-president of the National Association of Weights and Measures Officials.

Other changes in the Department included the transfer of Stanley L. Painter of Monmouth, State Horticulturist, to the job of assistant chief, Division of Markets, formerly filled by Mr. Chick. Merritt Z. Caldwell of South Paris was promoted from senior inspector, Division of Markets, to be inspector in charge for the Division in

central and southern Maine. Edward D. Johnson of Monmouth was promoted from assistant to State Horticulturist.

The progress achieved during the first and second Maine Production and Broiler test has attracted a great deal of favorable attention. Such a test seemed desirable as a measuring stick of progress made by breeders in developing strains with both production ability and meat qualities. The Department was ably assisted by the Maine Extension Service and by members of the industry, including G. E. Coleman of Brunswick, Norris Clements of Winterport, James Pratt of Windham and Waldo Chick of Wells, who served on the Advisory Test Committees and made very great contributions.

The last pages of this report are a detailed description of the organization and work of the Division of Inspection. We hope it will facilitate understanding of Division functions.

Agricultural Societies

A summary of payments is presented as follows:

	1946	1947
No. of Agricultural Societies receiving State Aid.....	24	26
Poultry Societies receiving State Aid.....	2	2
Pomological Society receiving State Aid.....	1	1
	27	29

A. K. GARDNER,
Commissioner.



Charles M. White of East Winthrop, veteran chief of the Division of Markets, who retired December 31, 1946.

Division of Markets

To the Hon. A. K. Gardner, Commissioner of Agriculture:

It seems to me that the period from July 1, 1946 to June 30, 1948 has called the attention of the agricultural groups to the need for improvement in our marketing and merchandising practices. This has been particularly noticeable in our potato and apple industries. The Government support on potatoes has worked out to the disadvantage of the consuming public in a good many instances, as under some of these programs the growers and shippers found it more profitable to sell the better quality potatoes to the Government and ship poorer quality potatoes to the consuming public. This situation has reacted to the detriment of our potato industry. The leaders of the potato industry, realizing that this situation was putting Maine in an unenviable position, started proceedings asking for a Marketing Agreement for potatoes last winter. Mr. Stanley L. Painter cooperated with the agricultural groups in Aroostook in writing up a Marketing Agreement, and hearings were held in the spring of 1948. It seems to me that this is a very progressive step that the industry has taken, and it is now up to the growers and shippers to decide whether or not they wish to adopt a Marketing Agreement for Maine, and thus take the one step available to the industry to regulate their own operations.

Our apple marketing situation is similar to potatoes in that we have met unfavorable reactions from our consumers during the last two years on account of the quality of the fruit displayed in our retail stores. A great deal of this off-grade fruit is the result of rough handling, and this Division is working with the Maine Apple Committee, growers, shippers, and handlers to improve this situation.

Crop and Market Reports

During the past two years the Division of Markets has continued the weekly "Market Report" and "Exchange List" that has been published for the last quarter century. As our mailing list had increased to approximately 4,500 in 1946-47 and as the expense of paper, labor, and equipment to render this service had increased tremendously, we felt obliged to increase our subscription fee from

50¢ to \$1.00 a year beginning January 1, 1948. The result has been a reduction in the numbers using this marketing service to 2,600 a year.

We are continuing our cooperation with Mr. C. D. Stevens of the U. S. D. A. in Boston to issue monthly crop reports on our major farm commodities, and each year publish a "Crop and Livestock Review." I think that we should seriously consider requesting more money to carry out this cooperative venture with the U. S. Crop Reporting Service, as we have not increased our contribution for this work the last few years.

We are also cooperating with the U. S. Department of Agriculture in carrying on the Market News Service in Presque Isle, under the supervision of Mr. Sam Russell. This service has supplied our growers and shippers as well as our customers in wholesale markets with valuable information on prices and shipments of our potato crop.

Personnel

Due to the extreme shortage in competent help, we have had great difficulty the last two years in hiring as many men for potato inspection as we needed to carry on our work in an efficient manner. Just recently the Personnel Board has cooperated and will allow us to make some adjustments in salaries which we hope will aid us in attracting more men to the service.

We have also recently reorganized our work in the Division and Stanley L. Painter is assistant to the Chief of the Division in charge of all marketing work. Merritt Z. Caldwell is in charge of Inspection in central and southern Maine. We plan a further reorganization so that I will have one full-time assistant devoting his entire time to marketing work and another devoting his entire time to inspection work.

On January 6, 1947, Mr. Charles M. White retired as Chief of the Division of Markets. He had been connected with the Department of Agriculture in official capacity for thirty years and four months. During that time he built up a host of friends in agricultural circles. He will be missed by the industry.

Marketing Work

The last two years we have continued our work with the poultry industry in developing a three-way program. First, the project to increase our market for fresh eggs, also to encourage the use of our State of Maine carton, and to encourage our producers and distributors to sell Grade A candled eggs. Through this program we can build

up better consumer acceptance. The last two years have seen our table egg program developed very rapidly with an increase in the number of packers and producers using the Blue, White and Red trade-mark, resulting in an increased volume of eggs being sold under the State trade-mark.

The second project that we have worked on is the development of a better hatching egg program. In carrying out this work, Mr. Leroy C. Brown made contacts in the broiler areas in some of our southern states and developed a State of Maine label to be used on hatching eggs. These eggs are produced, graded, and packed under approved standards set up by the Maine Department of Agriculture.

The third project has been the development of a State of Maine quality label to be used on day-old chicks. In addition, we have also cooperated closely with Francis Buzzell, Chief of the Division of Animal Industry, in his broiler test at the Maine Egg Laying Contest. The production and broiler test has proven to be of great value in promoting the advantages of using Maine hatching eggs. The outstanding features of freedom of disease, high hatchability, hardiness, high production, and supreme meat producers have been featured in our displays at the leading poultry shows of the East.

In addition to the three main projects that I have mentioned, we have also done work with some of our dressing plants to help encourage better grading of poultry meat products. We have cooperated with our turkey growers in promoting the sale of turkeys during the holiday season, and have supplied State labels and inspected turkeys using the label to make sure that they were of Grade A quality.

The last two years have seen a very important step taken in marketing. That is the passage of the Marketing Act of 1946, which is the so-called Flannagan-Hope Act. The Division of Markets has worked very closely with the Maine Agricultural Experiment Station and the Maine Extension Service in developing marketing projects for our major crops. Dean Arthur L. Deering and Commissioner Gardner were instrumental in setting up industry committees on dairy, apples, potatoes, and poultry. The Division has worked very closely with the Maine Agricultural Experiment Station on potatoes, apples, and poultry projects. On potatoes we cooperated with the Maine Agricultural Experiment Station to determine the quality of potatoes offered for sale on Maine markets. We also cooperated in running some consumer preference tests in

our Maine markets. In the quality test studies, inspectors visited the retail markets of the larger cities of Maine and inspected samples of the different lots of potatoes offered for sale. All external and internal defects were carefully noted, and the results were carefully analyzed by the Maine Experiment Station so that this information will be available to our shippers and handlers of potatoes so as to give them an opportunity to improve their present practices.

The consumer preference tests regarding Maine potatoes were conducted in cooperation with the Maine Agricultural Experiment Station in the Portland market for the purpose of determining whether consumers preferred their potatoes closely sized or whether they preferred to purchase them in a large range of sizes. Four different packages were used of uniform quality. The only difference between the package was the size of potatoes in the individual containers. The potatoes were packed in four different size ranges; namely, 1 7/8 inches to 2 1/2 inches, 2 1/2 inches to 3 1/4 inches, 3 1/4 inches to 4 inches, and 1 7/8 inches to 4 inches. These various sizes were offered to the consuming public through ten retail stores in the Portland area in hopes that we could gather some information from the consumers in regard to their preferences in purchasing potatoes. These figures will also be analyzed by the Maine Agricultural Experiment Station and we will cooperate with them in running further tests.

We have worked with our potato shippers and are trying out new packages for potatoes. One package that received quite a bit of attention was a paper boat containing five pounds of potatoes and over-wrapped with cellophane. Further tests will be made on this type package and any other which might be introduced by some of our packaging people in order that our shippers may be kept informed on the introduction of any new packages.

In the handling of apples through the various steps of marketing, a great deal of damage has resulted. Because of the rough handling, we have met consumer resistance. This Division in conjunction with the Experiment Station undertook studies to determine the causes of such bruising and to recommend practical means by which these losses could be reduced. Apples were examined at various stages in the marketing procedure from the time they were picked until they were offered for sale in the retail markets, with complete records as to the amount of bruising caused by each operation. These first studies have not been conclusive and the studies will be carried on this next year.

In conjunction with suppliers of trade-marked eggs and retail distributors, the Division has conducted candling demonstrations in retail stores to show the consumers the meaning and advantages of buying candled eggs. The sales of candled eggs increased and continued to increase during and following these demonstrations with one exception on the international border. The failure of sales to rise in this instance was because of the great price differential of approximately 35 cents a dozen between eggs in Canada and Maine. At the same time that these demonstrations were being conducted, assistance was given the retailer in improving the handling of the eggs in the store, in order that the quality might be maintained until the eggs were sold.

In addition to the project that we are carrying on for apples under the Flannagan-Hope Act, we have taken an active part in our Maine Apple Committee and have devoted considerable time toward the promotion of apples and our apple products.

This Division has also taken an active part in putting on exhibits at local fairs and at Eastern States, and other food conventions and Agricultural meetings outside the state.

Shipping Point Inspection

With the completion of the fighting in World War II, each state was called upon for maximum food production to ease the food situation both at home and abroad. In 1946-47, Maine, with an all time high acreage of potatoes comprising 219,000 acres, produced 78,407,000 bushels. This is by far the largest production of potatoes ever produced in Maine's history.

To harvest this enormous crop and have sufficient and adequate storage, a great deal of thought and careful planning had to be done by everyone in the potato industry. Many laborers were imported from Tennessee, Kentucky, Oklahoma, and all parts of Maine, as well as from our neighbor, Canada.

With the Government supporting the price at 90% of parity, and with the price differential increasing 10¢ per hundredweight each month until March 1, there was an incentive for the farmers to take loans from the Government and hang onto their potatoes as long as possible. Every available inch of storage space was filled to capacity.

After the storages were filled, long pyramids of potatoes were dumped on the ground. These piles were about 12 feet wide at the base and varied in depth from five to eight feet. They were

covered with paper, straw, and boughs, and in a good many instances, were finished off by bulldozing earth up the sides. They were left until early spring and then what could be salvaged were used in starch factories or alcohol plants.

In order for eligible growers to participate in the support program and secure loans from the Federal Government, it was necessary to secure inspection from the Division of Markets, showing the percentage of quality and condition of the stock as it went into storage, regardless of what type of storage. In order to do this work, every available inspector in Maine and those that could be borrowed from our neighboring states along the Eastern seaboard were used. To accomplish this, 136 inspectors were used during the season. We also required an office personnel of fifteen for the clerical, typing, and stenographical work necessary to handle the deal.

As soon as the digging was completed, starch factories and the alcohol plants were running to capacity, which called for inspectors from our Division to determine the quality of the load.

In the late fall and early winter, 10,123 cars were exported to foreign countries such as Belgium, Canada, Germany, Italy, Portugal, Spain, Switzerland, and Trieste. With the exporting, plus stock used for alcohol and starch programs, in addition to shipments in regular commercial channels, it appeared that many potatoes would still remain in the hands of farmers; consequently, a dumping program was inaugurated. This certainly made history and the Government and Maine probably will never live down the criticism that was received from the public because of this dumping program. Some over 13,000,000 bushels were dumped during the late winter and early spring.

From this crop we made 49,829 inspections, of which 31,893 were carload lots for the consuming market, 484 carload lots for stock feed, 9,931 loads both permanent and temporary, and the balance of the inspections were made up of truck and warehouse lots.

Prior to the planting of the 1947-48 crop, the industry cooperated with the Federal Government in trying to arrive at a reduction in acreage. Maine cut back to 186,000 acres and harvested 62,790,000 bushels.

The development of a new insecticide, DDT, has materially

increased our per acre yield in Maine due to the fact that the plants remained green much later in the fall. Due to the plants remaining green so late, digging was delayed and heavy frosts were encountered before digging operations were materially under way, and many of the potatoes near the top of the ground were chilled or badly frozen. This created a hardship for our dealers and shippers, as these potatoes continued to break down after they were in storage and were a disturbing factor throughout the season.

The Government continued the support price program for the year 1947, and through the 1947-48 shipping season they purchased a total of 14,187 carloads up to May 24. In the early shipping season, the Government bought and stored potatoes at Portland, Maine, and several other terminal markets. These potatoes were later moved into export or distributed by the Government to alcohol plants or other diversion outlets. Shipments were made from Searsport and Portland to foreign countries such as Canada, Greece, France, Germany, and Trieste.

This last year brought back the trucking operations from Aroostook County to Winterport, where they were shipped by boat to southern markets.

The total number of inspections for the 1947-48 season totaled 43,641. Eighty-seven inspectors were used on this deal, with an office personnel of fifteen girls at Caribou. In addition, we were again called upon to furnish inspectors at starch factories and alcohol plants.

In 1947 Maine shipped over 63,000 cars which surpassed all previous records. This season we saw trial shipments made with potatoes packed in five pound bags. It is my opinion that we will see a greater volume moving in small size containers in future years.

I would like to call your attention to the fact that in the 1946-47 season, records in the office of Sturges Dorrance in New York show movement of 1,427 cars of "Super Spuds"; and for the 1947-48 season, 2,628 cars.

The following is a breakdown of our inspection for the past two years, as well as a table showing the type of containers used in carload shipments over the Bangor and Aroostook Railroad for the past two years:

<i>Season</i>	<i>No. Cars Inspected</i>	<i>No. Trucks Inspected</i>	<i>No. Warehouse Inspections</i>	<i>Loans, Per- manent and Temporary</i>	<i>Total</i>
1946-1947	31,893	670	78	14,485	
Stock Feed	484	1,281	938		49,829
1947-1948	39,891	2,176	172		
Shipping and Storage Program, Portland				(lots) 1,402	43,641

<i>Containers</i>	1946-1947	1947-1948
10 lb.	1,938	2,189
15 lb.	7,144	6,613
50 lb.	8,140	8,283
65 lb. crates	1	
100 lb.	28,472	32,513
100 lb. crates	219	401
120 lb.	7	4
150 lb.	116	29
165 lb.	72	221
Bulk	639	420
Mixed	5	
	<hr/>	<hr/>
	46,753	50,673*

**Figures available through May.*

Cannery Inspection

During the last two years, we have continued offering inspection service to all canning and processing plants desiring to use the service. We have had fewer calls for this service during the last two years, as with the great demand for food during the war years there did not seem to be as much effort devoted to quality products as was the case in pre-war years. Quantity rather than quality seemed to be the key word. Consequently, in the summer of 1946-47, we had nine inspectors doing grading work at eight bean processing plants, and only five inspectors during the 1947-48 season at four processing plants. In the summer of 1946-47 we used thirty-three inspectors at twenty-eight corn canning factories. In the summer of 1947-48 we used thirty-one inspectors at twenty-five corn factories.

Miscellaneous Inspection

During the last two years, we have offered condition inspection work to wholesalers in all our terminal markets. This work consisted of making condition inspections on fruits and vegetables shipped in from other states. We also offered Federal-State inspection on eggs, poultry, and butter. Most of this inspection was on produce going on ships at Portland.

In 1947-48, we had quite a bit of inspection work for the Veterans Administration at Togus. This was on eggs, fruit, and vegetables. We have had very few calls for shipping point inspection on apples, and have issued only five certificates in all on this work.

In the Spring of 1947, maple syrup producers held meetings throughout the state. As a result of these meetings, eight producers decided to use the Blue, White, and Red trademark to identify their syrup. The Department of Agriculture insists that all syrup so identified with the State trade-mark must meet Grade A or better quality. We made sixteen inspections at syrup houses during the spring of 1947. This work increased in the spring of 1948 when we had ten producers using Blue, White and Red trade-mark on our maple syrup. The quality of the syrup was not as good this last year as in the previous year, due to weather conditions. However, we had good cooperation with all the producers using the trade-mark, and found them very cooperative in using the label only on their best grades.

Fresh Egg Inspection

Fresh egg inspection work has been continued the past two years. In 1946-47, we made 3,801 regular egg inspections at stores, retail outlets, and wholesale establishments. The number of men used

on this work varies from one to five inspectors. Our funds are only sufficient to keep one full time man on this work; but for a short period in the summer, we do use extra personnel to check roadside stands, stores at summer resorts, and wholesale houses to see that the eggs are properly marked as to size and quality. This is also the season when we usually have the major volume of western eggs go on our local markets, and these were checked closely to make sure that they were properly labeled as to grade and size. In 1947-48, we made 5,369 inspections. This number of inspections was materially increased due to the large volume of cartoned eggs being sold under our Blue, White and Red State trade-mark. At the close of this biennium, approximately 40,000 dozen of eggs per week are being packed in cartons bearing this label. Once again, as in the previous years, our funds were not sufficient to keep more than one full time man on this work with three or four other inspectors being used during short periods of time in the spring and summer. I wish to say that in general, we have received good cooperation from retailers and wholesalers in our efforts to enforce the Fresh Egg Law. During the last two years, we have found it necessary to have only one court case.

Miscellaneous

During the past two years, the Division of Markets, through its chief and other personnel, have cooperated with the Maine Broadcasting System and the New England Radio News Service. We have continued additional work with our producers, and at all times have cooperated with our Grangers and other farm groups in furnishing speakers for their meetings. We have had very cordial cooperative relations with the U. S. Department of Agriculture, Maine Agricultural Experiment Station, Maine Extension Service, and other agricultural agencies within the State.

G. Ray Warren has been the Federal Supervisor on shipping point inspection for the last two years, and he has been very faithful and conscientious in carrying on his duties as Federal Supervisor.

This report is the cooperative effort of the Chief of the Division; Stanley L. Painter, Assistant in charge of Marketing; Merritt Z. Caldwell, Assistant in charge of Inspection; and Vernon Palmer, Chief Potato Inspector.

Respectfully submitted,

GEORGE H. CHICK,
Chief, Division of Markets.

Division of Inspection

To Hon. A. K. Gardner, Commissioner of Agriculture:

I respectfully submit my report covering the work of the Division of Inspection from July 1, 1946 to June 30, 1948.

The work of the Division of Inspection consists in the enforcement of laws regulating the sale of agricultural seed, commercial feeding stuffs, commercial fertilizer, drugs, foods, insecticides, and the enforcement of the weights and measures law; also, the certain registration, certification and licensing attendant to the regulations of the quality and purity of certain commodities. In carrying out the statutory requirements, this Division attends to the annual registration of all commercial feeding stuffs, commercial fertilizers, fungicides and insecticides, and for each brand issues annually a Certificate of Registration; the annual licensing of bottling establishments; the annual licensing of all sardine factories and the licensing of canning factories engaged in canning other commodities that voluntarily apply for full-time inspection; the certification (and the licensing being done by the Department of Sea and Shore Fisheries) of all establishments shipping shellfish beyond the borders of the state, as well as all shucking establishments in the state; and the annual licensing of all establishments wherein animals or fowl are slaughtered for human consumption; special items in the enforcement of the food law which amounts to true labeling or branding as the grading and packing of apples, and the branding law covering the grading and packing of potatoes. These are among the more important items which constitute the work of this Division.

Seed Inspection

The analyses of the samples of seed collected by inspectors together with samples from dealers may be found in Official Inspections No. 202 and No. 206.

	<u>1947</u>	<u>1948</u>
Number of samples collected	127	136

Feeding Stuffs Inspection

	<u>1947</u>	<u>1948</u>
Number of samples collected from July 1, 1946 to June 30, 1947	515	
Number of samples collected from July 1, 1947 to June 30, 1948		624
Number of brands registered	1,122	1,115
Number of hearings arranged	159	112

The analyses of the samples taken are to be found in Official Inspections No. 204 and No. 208.

Fertilizer Inspection

In the period covered by this report, samples of practically every registered brand of fertilizer were collected and analyzed. The endeavor was made to obtain all possible samples from the farmers.

Number of samples collected	199	288
Number of brands registered	176	195
Number of hearings arranged	23	37

The analyses of the samples collected are to be found in Official Inspections No. 201 and No. 205.

Fungicide and Insecticide Inspection

The fungicides and insecticides ordinarily employed for repelling and mitigating the attack of insect pests have been collected and analyzed.

Number of brands registered	915	931
Number of samples collected	231	199
Number of hearings arranged	38	21

The analyses of the samples taken for this period can be found in Official Inspections No. 202 and No. 206.

Food Inspection

A summary showing the collection of samples is submitted herewith, although it is only fair to say that the collection of these samples represents only in a small way the great amount of work which is done by those of this Division who carry out the inspection of food and utensils.

Number of samples collected	385	559
Number of hearings arranged	78	23
Number of non-alcoholic beverage licenses issued	290	263
Number of slaughterhouse licenses issued	277	284
Number of shellfish certificates issued	71	622
Number of sardine licenses issued	35	46

Number of sardine licenses issued for herring	<u>1947</u>	<u>1948</u>
in round cans	5	0

The work of food inspection has been conducted as usual by the collection of samples, by hearings and by visiting and inspecting hotels, restaurants, grocery stores, markets, slaughterhouses, bottling establishments, canning plants and all places where food is manufactured or offered for sale.

Federal Agencies

In safeguarding the food supply of the people of the State of Maine, the Division of Inspection enjoys the aid and cooperation of the various agencies charged with similar duties. We are fortunate in enjoying the full cooperation of the United States Food and Drug Administration through their offices at Boston and Portland.

Shellfish

By legislative authority, the Commissioner of Sea and Shore Fisheries and the Commissioner of Agriculture are assigned the duty of investigating and inspecting clam, quahaug, and mussel flats on the coast of Maine. This is in keeping with the program recommended by the United States Public Health Service regulating the quality and purity of all shellfish shipped in interstate commerce. In keeping with our agreement with the United States Public Health Service, samples of shellfish both shucked and shell stock have been taken each month and bacteriological examinations have been made and reports made to the United States Public Health Service.

Sardines

The sardine pack for 1946 was 3,176,063 cases, and for 1947 it was 2,823,859. The number of factories licensed for 1946 was 40 and for 1947, there were 40. Some of the factories which pack sardines, also pack herring in round cans.

Blueberries

Blueberry factories licensed in 1946 numbered 12, and in 1947 there were 11. We have been able to make the necessary examinations for infestation of berries in the field, and whenever contamination of arsenical dusting or spraying was suspected, samples of berries have been sent to the laboratory of the Maine Agricultural Experiment Station at Orono, for determinations.

Branding Law

In the enforcement of the branding law, the results have been most gratifying and satisfactory. On the whole those who have

elected to ship potatoes under the branding law have cooperated with this Division most definitely.

Slaughterhouse Law

Under the Slaughterhouse Law, several new establishments have been built and maintained in accord with the regulations, and numerous old establishments have been renovated and repaired to meet the requirements of the law. Especially gratifying has been the notable improvement in the establishments maintained for slaughtering poultry. In the general enforcement of sanitary requirements in slaughterhouses and in cases of infractions of the law providing for the marketing of meat and meat products fit for food, 13 prosecutions have been made.

Conclusion

Please accept my thanks for your advice, and wise counsel in the administration of the affairs assigned me.

Respectfully submitted,

A. M. G. SOULE,
Chief, Division of Inspection.

Weights and Measures

To Hon. A. K. Gardner, Commissioner of Agriculture:

I respectfully submit the report of the State Bureau of Weights and Measures covering the work performed for the period from July 1, 1946 to June 30, 1948.

There has been a change in the personnel of the Bureau of Weights and Measures since the last biennial report. Mr. Gardner K. Heath retired and James A. Boyle, City Sealer of Portland, was appointed Deputy State Sealer, on June 1, 1948. The Commissioner of Agriculture is the State Sealer of Weights and Measures, and has the power to appoint a Deputy Sealer whose time is divided between the details of the office and field work, which consists of investigating complaints on violations of the laws relating to weights and measures, requests for inspection, testing apparatus submitted to the office, checking food containers, reweighing packages, assisting local sealers in matters connected with weights and measures work, instructing new officials appointed in the various cities and towns to protect the public in matters of trade, and general field work.

As part of the general supervision of the work of the local sealers, 193 cities and towns were visited and 114 large capacity scales were tested. These tests revealed errors which could not be discovered by the use of the average sealer's working equipment, and showed the necessity of repairs or replacements. During the year, special attention was given to scales used in the canning factories and receiving stations. A considerable number of these scales were found to be used for weighing loads beyond their rated capacity for motor-truck weighing. These scales are designed to weigh loads up to 12,000 lbs. for motor-trucks, and are so marked on the weigh beams, but a number of scales were being used to weigh loads up to 20,000 lbs. These scales are being overloaded and the use of them under these conditions is obviously unfair to the seller whose crops are being weighed on these scales. Some instances were found where the weights being used did not belong on the scales and a considerable loss to the seller would result if this situation were not corrected. It is expected that the demand for this type of work will continue

to increase since cities and towns are not adequately equipped to test heavy capacity scales. With very few exceptions local sealers have a small complement of weights for large scale testing purposes, the amount in most cases not exceeding 500 lbs. To apply this amount of known weight as a testing medium on a scale with a capacity of 20 tons does not permit a satisfactory determination of the condition of the scale and it is merely a gesture to test a scale with such meager facilities.

The Bureau of Weights and Measures has never had a sufficiently large appropriation to carry on the functions and proper enforcement of weights and measures laws. The cost of a vehicle-scale testing unit, now owned by a number of States, is estimated at \$15,000. On the face of it, this may seem like a rather large expenditure; however, when one takes into consideration the fact that this equipment will be used to assure the accuracy of the largest vehicle scales and the equipment will probably be in service a number of years, the cost should appear entirely reasonable. The total losses incurred by the use of incorrect scales in a year would undoubtedly exceed the initial cost of the equipment, plus operating expense. Recognition is given to the fact that local town and city governments would not care to invest large sums in equipment needed for this work and which would be required only a few days each year.

During the biennium, all railroad track scales in the state were tested by the National Bureau of Standards No. 1 Railroad Track Scale Testing Equipment under the supervision of Mr. C. A. Dahlrst of the U. S. Department of Commerce, accompanied by a representative of the railroads. They were met at Portland by an inspector from this Department.

The State Bureau of Weights and Measures has acquired a portable 100-gallon test measure, mounted on a trailer. During the year, inspectors with this equipment have made 65 visits to various cities and towns, tested 237 bulk station and tank truck meters: 190 meters required adjustment in order to bring them within the established tolerances or allowable error. Tests have been made of the various meter systems used for the distribution of heating oils, and exacting requirements have been laid down on systems involving the power operated pumping units in the matter of air and vapor elimination before reaching the measuring chamber. We have consistently endeavored to surround the gasoline situation with every safeguard for consumer protection, even to the extent of requiring the use

of non-drip nozzles on pumps and vehicle tank trucks to prevent drainage or milking the hose.

Pursuant to authority granted to the State Sealer by the Revised Statutes of 1944, Chapter 27, Section 243 and Section 3 of Chapter 268 of the Public Laws of 1947, the specifications, tolerances, and regulations for commercial weighing and measuring devices as recommended in the National Bureau of Standards Handbook H-29, and amendments thereto, have been adopted and promulgated and are now the legal requirements of the state.

The National Conference on Weights and Measures which is held in Washington, D. C., each year and is sponsored by the National Bureau of Standards, held its annual meeting September 22-25, 1947. Many constructive accomplishments came out of this conference, and there was much evidence of renewed interest in Weights and Measures throughout the nation.

In connection with this report, you will find a tabulated report from local sealers. It is almost impossible to obtain a report from each town. Many officials are lax in filling vacancies when they occur, and in the small towns, under the fee system, the income derived is not sufficient to make the position desirable.

It is the general opinion today that the fee system in connection with weights and measures supervision is most unfortunate and cannot be recommended or defended except in the most extraordinary cases. This conclusion is based upon the character of the benefits resulting from weights and measures supervision which are primarily of a public nature.

Probably one of the most beneficial steps the State of Maine could take to bring about a better weights and measures situation in the state would be to enact an entirely new general weights and measures law based closely on the model laws recommended by the National Conference of Weights and Measures Officials. The three forms embraced by the model law provide for (1) all weights and measures supervision in a state to be exercised by officials in the service of and paid by the state, (2) both state and local enforcement officials actively carrying on the work, and (3) local enforcement only with the state exercising general supervisory control.

Respectfully submitted,

JAMES A. BOYLE,
Deputy State Sealer.



New portable sealers' calibrating unit now in use checking tank delivery trucks dispensing gasoline and fuel oil in Maine. Inspecting the unit are, left, A. M. G. Soule, chief of the Division of Inspection, and William E. Haley of Caribou, Potato Branding Law Inspector. Authority for the purchase of the new measuring apparatus was voted by the Legislature in 1947.

STATE REPORT OF WEIGHTS AND MEASURES FOR THE YEAR 1946-47

Counties	NUMBER TESTED AND SEALED											NUMBER CONDEMNED																	
	Scales	Weights	Dry Measures	Liquid Measures	Yard Sticks	Gasoline Pumps	Milk Bottles	Kerosene Pumps	Molasses Pumps	Taxi Meters	Measurgraphs	Vehicle Tanks	Vehicle Tanks & Meters	Loading Rack Meters	Scales	Weights	Dry Measures	Liquid Measures	Yard Sticks	Gasoline Pumps	Milk Bottles	Kerosene Pumps	Molasses Pumps	Taxi Meters	Measurgraphs	Vehicle Tanks	Vehicle Tanks and Meters		
Androscoggin.....	827	217		134	2	340		34			3	19		50	12					31									
Aroostook.....	708	184		2	3	331		56				10		13	3					10									
Cumberland.....	2134	601	15	53	116	951		154		263	3	145	159	19	9			1	11	31				15				11	
Franklin.....	264	134		6	3	198	12	40				7		4	2					2									
Hancock.....	512	205	8	85	11	362	309	62	13			25		7				4		2									
Kennebec.....	862	1162	3	185	29	515		92	14		4	36		10	27				4	4						1			
Knox.....	547	122		80	3	177		32				1		11				5		2							1		
Lincoln.....	366	246		5	8	182	27					2								3									
Oxford.....	646	247		19		404		83				11		6	15					4									
Penobscot.....	1352	262		123	38	600	520	107	28		39	28		12	6		3			7									
Piscataquis.....	152	171	9	7		120		20				2		7	1					1									
Sagadahoc.....	202					133		24																					
Somerset.....	530	213		66	14	351		83	8			13		11	4					1	10			1					
Waldo.....	277	162		6		189		27	1			3																	
Washington.....	266	192	4	18	2	232		41	10			4		4	1														
York.....	469	178		356	1	352		45	5			27		2	2														
Totals.....	10114	4296	39	1145	230	5437	868	900	112	263	49	331	163	21	156	87		13	16	123		24		15	1	6	11		

STATE REPORT OF WEIGHTS AND MEASURES FOR THE YEAR 1947-48

Counties	NUMBER TESTED AND SEALED													NUMBER CONDEMNED															
	Scales	Weights	Dry Measures	Liquid Measures	Yard Sticks	Gasoline Pumps	Milk Bottles	Kerosene Pumps	Molasses Pumps	Taxi Meters	Measuregraphs	Vehicle Tanks	Vehicle Tanks and Meters	Loading Rack Meters	Scales	Weights	Dry Measures	Liquid Measures	Yard Sticks	Gasoline Pumps	Milk Bottles	Kerosene Pumps	Molasses Pumps	Taxi Meters	Measuregraphs	Vehicle Tanks	Vehicle Tanks and Meters		
Androscoggin.....	726	115	2	103	2	259		35						46						32									
Aroostook.....	701	332	14	25	15	465		92						13	7					4		5							
Cumberland.....	2454	927	23	87	130	794	4	163		199	5	123	15	24	9				7	12		11				1	11		
Franklin.....	256	54		2		174	4	44	1					5						4		3							
Hancock.....	474	171	65	37	7	309	240	53	3	2				4		3				4									
Kennebec.....	592	131	4	91	4	404		84	7					4	2			1		4									
Knox.....	523	167		62	2	185		34	2					4						4									
Lincoln.....	360	236	5	7	6	180		34													1								
Oxford.....	533	233		11	1	326		64	4					13						4									
Penobscot.....	992	197	6	73	19	595	624	125	20	13	37	54	5	9	23					4									
Piscataquis.....	85	66		2	3	116		21	1					1						3									
Sagadahoc.....	276					126		18																					
Somerset.....	592	239		44	13	430		83	4					6	7					14									
Waldo.....	266	102	2	9	1	182		44	4					2															
Washington.....	245	183		2		216		42	10		1	5		2															
York.....	977	217		334	36	418		49	4		8	8		2			36		1	6									
Totals.....	10057	3370	114	912	241	5179	872	985	81	214	51	270	188	142	48	3	41	8	8	85	1	19		148	1	11			

Division of Animal Industry

To Hon. A. K. Gardner, Commissioner of Agriculture:

Livestock Production

The quality of livestock in the state has shown a steady improvement and the number of purebred herds is on the increase in nearly all breeds. The prominence received by several of our breeders throughout other sections of the country is gratifying.

The artificial breeding cooperatives have contributed considerably to the opportunities of the average farmer to improve the quality of his dairy cattle through the use of better sires. The regrettable part of the program is that far too many of these better calves are not retained for replacements or offered for sale as milkers at a later time. Increased dairy herd improvement testing would greatly benefit the program.

Livestock numbers are on the decline in the state as compared with a few years back. The exact figure is not available but is estimated at about 10% under the 1945 figure. Many factors have contributed to this decrease such as age of farm operators, the close of the war and a general relaxing of production by many who left their duties to produce during the war. Another factor is the number of young people who would like to farm and keep livestock, but who lack the experience and knowledge necessary to successfully carry on a livestock industry. The poor quality of hay and high grain prices (\$120 per ton for dairy feed) during the fall of 1947, coupled with a severe drought in the fall and winter of 1947-48 along with high wages and unexpected high prices for beef resulted in heavy culling of dairy herds and the shipment of large numbers of young dairy heifers which were so much needed on Maine farms, and their loss will be reflected through milk production as well as opportunities for raising replacements for other areas of the country, and the future prosperity of much of the state south of Bangor depends on a diversified agriculture built around a livestock base.

The further development of labor saving machinery will help Maine livestock and dairymen to profitable, further expansion on many of our farms, as well as use of a large number of acres now in a

semi-abandoned state through increased size of operations as well as new farms.

The opportunities for beef production are many, especially when built around a good roughage and pasture program, and more especially on cash crop farms to help use feed and pasture that might go to waste or have little commercial value. Many changes are desirable within this branch of animal husbandry, especially in housing and feeding. Too much labor spent in caring for beef animals in the winter is not justified, and more attention should be paid to better pastures, as grass gains on improved pastures in Maine are as high as in any area, and much higher than many in the country.

Sheep production has decreased and the trend probably will continue downward, as will be noted in the report of the livestock specialist.

Poultry Production

Maine has enjoyed a strong progressive expansion in the poultry industry, especially in the direction of a specialized industry. It has experienced the development of several poultry dressing plants, and the broiler industry has expanded as has commercial and hatching egg production.

Hatching egg production has increased and is about 25% of total production. These are shipped into many states along the Atlantic seaboard for hatching and about 2,400,000 chicks are hatched in the state annually. The general health of the flocks and their location, as well as the climate, is favorable to this industry. Many barns have been converted into sizeable broiler houses and laying houses at very little expense, thus making it possible for the owner to change from other types of agriculture that require more equipment and hired help.

The increased activity in broiler egg production as well as greatly increased production of broilers within the state, and the demand for more information, resulted in arrangements being made whereby the Old Hen Test at our Maine Egg Laying Test was dropped and in its place a limited number of broiler tests was started, to study egg production and other angles of the industry. This was the first of its kind in the country and has attracted national interest. This test is being copied with variations by other states. The need for such a test has been justified but facilities for brooding are limited and should be increased.

Plans were made at the end of the biennium for the First Maine Broiler Day, to be held at Belfast on July 10, 1948, in cooperation with the Maine Poultry Improvement Association and the University of Maine.

Swine

The large number of hogs imported annually testifies to our market within the state for hogs.

The importation of young pigs for family use has dropped off due to high grain prices and the discontinuance of rationing, yet this field is open normally for a few thousand weaner pigs which could and should be produced here rather than imported from garbage feeding establishments outside of the state.

In general, livestock and poultry production is on a sound economic basis, but volume is less than it should be. Opportunities are available for further expansion and improvement to the betterment of the state and its various subdivisions.

Horses

The horse population has declined very rapidly in recent years as tractors have become available, and are used comparatively little as a source of farm power. This change should have resulted in an increase in cattle numbers, but at present it appears that the horses were not replaced by more cattle in many instances. Importations are largely for use in logging and pulpwood operations.

Livestock and Poultry Disease Control

Since the outbreak of foot and mouth disease in Mexico, the Division and practicing veterinarians in Maine have been on the lookout for symptoms of this disease, especially as we are a seaboard state, but it has not been reported. Neither have anthrax, anaplasmosis, infectious anemia (swamp fever), encephalomyelitis (sleeping sickness) or glanders, and no increase has been noted in blackleg, hog cholera or swine erysipelas.

Newcastle disease has appeared in a very few flocks of poultry, but such flocks have been quarantined and the owners instructed as to procedure. The exact way the birds became infected with this disease has not always been determined, but in at least one case it was present in day old chicks shipped in from another state.

Tuberculosis

During the war testing of livestock for tuberculosis was curtailed due to lack of personnel, and there has been an increase of this disease throughout the country. The procedure of retesting 20% of the

cattle population every three years for remodification did not prove satisfactory. The following procedure was adopted on a national basis for future control and eradication of this disease and remodification of areas in the country: "To provide that all cattle in an area shall be tuberculin tested at intervals of not to exceed six years before accreditation or reaccreditation after that date excepting areas in range and semi-range areas."

This change of regulations will make it necessary that we area test the state previous to the deadline of January 1, 1951, or lose accreditation of some counties which would cause a real hardship in those counties in that they could not ship out except from accredited herds and considerable police work would be necessary to enforce these restrictions.

Recent developments would indicate that we will be able to accomplish this and area test in the future some counties each year so as not to have a load after this state is reaccredited under the six year plan.

From March, 1947, to July, 1948, a considerable amount of T. B. work has been done and several badly infected herds discovered and cleaned up.

Brucellosis (Bang's Disease)

This disease has been greatly reduced since the start of the new program in 1941. This is evidenced not only by farm tests but also in dealer tests which ran in 1939 as high as 16% reactors by the month, and for the past year have run around 2.5%. The recent area test in Waldo county showed .89 of 1% infection although its area test in 1945 showed 4.6% reactors. The number of infected herds is being steadily reduced.

Area tests have been slowed up due to lack of personnel, particularly on the Federal force, which has not yet been built up to even the same number maintained during the war.

It would be desirable to area test more rapidly in order that infected herds could be found sooner. Once every two years in some counties is really necessary.

Calfhood vaccination has been of assistance in many herds in cleaning up the disease. However, some have put too much faith in it, and have not taken as many precautions as they should have because it has been clearly proven that the amount of resistance offered is limited, also that the longer after vaccination, the lower the resistance. In badly infected herds many of the calfhood vac-

cinated animals have not stood up to the test nor have they been able to carry calves, and milk samples from some of these vaccinated reactors are definitely positive.

The program followed in the state is undoubtedly the best of any of the various states with comparable conditions.

A livestock dealer law would greatly assist the Tuberculosis and Brucellosis control work and has worked out satisfactorily in all states where adopted, both from a dealer and state standpoint.

Brucellosis in swine is not much of a problem in the State of Maine in that there is very low infection in swine and they are not generally in contact with cattle.

Brucellosis in goats in some sections of the country is a problem but here tests do not indicate widespread infection.

The greatly increased movement of livestock during the past few years has caused greater spread of all livestock diseases than would have taken place had this movement not been as great.

Interstate Shipment July 1, 1946 to June 30, 1947

	<i>Imported</i>	<i>Exported</i>
Number of Cattle Other Than for Slaughter	7,132	4,949
Number of Horses	2,846	
Number of Swine	2,586	
Cattle Imported for Slaughter	20,121	
Swine Imported for Slaughter	13,405	

July 1, 1947 to June 30, 1948

	<i>Imported</i>	<i>Exported</i>
Number of Cattle Other Than for Slaughter	5,829	6,289
Number of Horses	1,950	
Number of Swine	1,135	
Cattle Imported for Slaughter	10,664	
Swine Imported for Slaughter	11,860	

Tuberculin Tests

1946-47	2,901 Herds	48,629 Cattle	175 Reactors
1947-48	5,501 Herds	72,074 Cattle	174 Reactors

Brucellosis Tests

1946-47	10,398 Herds	131,773 Cattle	3,719* Reactors
1947-48	11,382 Herds	140,264 Cattle	3,232* Reactors

*Includes retests of C Herds.

Vaccinations

1946-47	6,269
1947-48	3,971

I wish to express my appreciation for the constant help and cooperation extended by you, and to thank the other members of the Department and all others who have contributed to the success of the work of this Division.

Respectfully submitted,

FRANCIS G. BUZZELL,

Chief, Division of Animal Industry.

The Maine Egg Laying Test

To Francis G. Buzzell, Supervisor, Maine Egg Laying Test:

Herewith is submitted a report of the activities of the Maine Egg Laying Test for the fiscal years July 1, 1946 to June 30, 1948.

The 1945-46 Test closed with a very creditable record of 221 eggs scoring 228.98 points per bird. The high pen for the year was a pen of Rhode Island Reds owned by Crooks Farm of North Brookfield, Massachusetts, with a total score of 3637 eggs scoring 3887.45 points. The high Maine pen was also a pen of Rhode Island Reds owned by Kendall Orff of Warren, Maine, with a score of 3419 eggs scoring 3595.95 points. The high bird in this year's Test was a Rhode Island Red owned by G. B. Treadwell of Spencer, Massachusetts. Her record for the Test year of 51 weeks was 343 eggs scoring 376.85 points, for the highest record ever made at the Maine Test. This record gave her first place in all U. S. Standard Tests, all breeds for the year and second high all breeds since the start of Laying Tests.

In the 1946-47 Test the winning pen was a pen of Rhode Island Reds owned by Harco Orchards & Poultry Farm of South Easton, Massachusetts, with a score of 3615 eggs scoring 3896.90 points. The high Maine pen for the year was a Rhode Island Red pen owned by Frank K. Collemer of Lincolnville, Maine, with 3505 eggs scoring 3764.05 points and the high hen of the year was a Rhode Island Red hen owned by Clarence Rollins of Hallowell, Maine. Her record was 327 eggs scoring 358.75 points.

The First Production and Broiler Test, established in Maine in 1946-47, was the first of its kind in the country. It was established as an aid to a fast growing hatching egg and baby chick market in the broiler areas of the east, in an effort to find breeds and strains of birds which would give a satisfactory broiler and at the same time come from parent stock which would have production enough to

warrant their being used as breeding stock. The development within the state of several modern dressing plants has resulted in increased broiler production. The Test's value has been well recognized in the poultry industry and since its establishment, several states have indicated their interest in establishing similar ones and some have copied the Maine plan.

The First Production and Broiler Test, conducted under rules and regulations as set up by the Broiler Advisory Committee and the Test management, are kept the same as in the Standard Test with three lots of chickens hatched and reared to fourteen weeks of age.

Records were kept of the performance of the parent stock as to egg production, livability and fertility and also livability of chicks. Feathering scores were kept at four and ten weeks of age with live weight at ten and fourteen weeks of age. They were dressed at fourteen weeks of age and graded with comb height and pigmentation scores recorded at that time. This complete report of the three lots has been printed and distributed.

The First Maine Fair Sample Test was conducted this year with thirteen Maine pens entered. These were representative stock of non-pedigreed breeders and records were kept the same as in the Standard Test. The high pen in the First Maine Fair Sample Test was a Rhode Island Red pen owned by Frank K. Collemer of Lincolnville, with 3388 eggs scoring 3619.50 points, and the high hen was a Rhode Island Red owned by Jordan's Poultry Farm of Lisbon with 328 eggs scoring 350 points.

In the 1947-48 Standard Test, which is operating at the present time with three months remaining to go, a Rhode Island Red hen owned by G. B. Treadwell, is high hen at the Maine Test and a very close second in all U. S. Standard Tests.

A great deal of interest has been shown in the Second Production and Broiler Test conducted the same as last year with a Broiler Day planned to be held at Belfast on July 10th. At this time the dressed broilers will be graded and on display at the McLeod Dressing Plant. A broiler barbecue will be held under the direction of Roy E. Jones, Extension Poultryman from Connecticut, who will also be the speaker of the day.

The Second Maine Fair Sample Test has eight entries this year and at the present time there is close competition between the four top pens.

The 1948-49 Standard Test will be conducted as in the past in

conformity with the rules and regulations of the Council of Standard Egg Laying Tests.

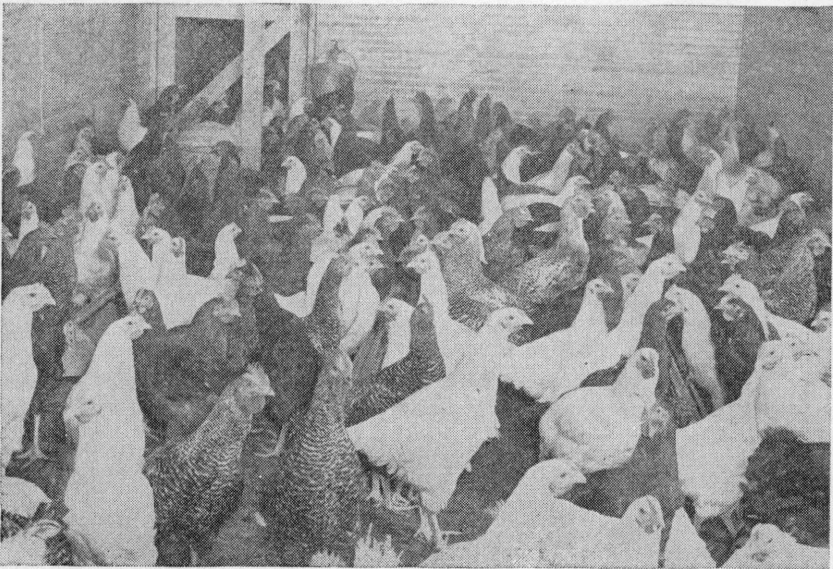
The Third Production and Broiler Test and the Third Maine Fair Sample Test will all get under way October 1st with all pens filled to capacity.

As in the past, we are very gratified for the whole-hearted cooperation received from you as well as from Commissioner Gardner and other members of the Department, the contestants, the Extension Service, the University of Maine, the Maine Experiment Station, and to all others who have contributed to the success of the Maine Egg Laying Test. We hope that we will be contacted at any time when we can be of assistance to any interested party.

Respectfully submitted,

H. T. COVELL, *Superintendent,*

Maine Egg Laying Test.



Fourteen weeks old birds in the First Maine Production and Broiler Test at Monmouth.

Animal Husbandry

To Francis G. Buzzell, Chief of the Division of Animal Industry:

A brief summary of the activities of the Animal Husbandry Specialist is herewith submitted for the fiscal years July 1, 1946 to June 30, 1948.

Beef Cattle

Assistance and cooperation is still continuing with the boys and girls in Maine raising baby beef steers. Five calls since February 1st have been made on each boy and girl raising these steers, to check the weights and gains to see that proper feeding and managing practices are carried out. Results are evident in that the steers this year are heavier at this season than previous years. Maine will be represented for the first time with eleven good baby beef steers at the Eastern States Exposition. The selections consist of 6 Herefords,



2 Angus, and 3 Shorthorns. The 1948 enrollment of baby beef steers in Maine is 114, which is a new high for the state. This compares very favorably with a total of 69 fitted and sold in 1947.

The number of registered beef cattle in the state shows a slight increase. Several new herds of Herefords, Shorthorns, and Angus have been started in the past two years. Entries at the agricultural fairs in Maine show both an increase in number as well as quality of exhibits.

The Hereford Breeders' Association, in cooperation with this Department, sponsored two Field Days, one held in Aroostook county and the other in Franklin county. The Association is also supporting a consignment sale of registered heifers this fall. The Shorthorn breeders organized an association a year ago and are becoming very active. Plans are already made for a consignment sale of quality cattle of this breed to be held this fall. Much time has been spent with both these groups selecting and making sale arrangements.



Sheep

The sheep population is still on a decrease which is partly due to bear and dog damage. These two animals are still a serious menace to the sheep men. The decrease of nearly 2,000 sheep per year is about equal to the number killed by bear and dogs. The sheep projects at East Corinth and Monmouth, which are under the supervision of this Department, have reported favorably as to their progress. Plans are under way to transfer half of the present registered flock of Hampshires at the East Corinth Academy to the Future Farmers at Hermon High School.

A Maine wool pool was again sponsored this year by the Maine Sheep Breeders' Association, and assistance was given the Association at the Rockland, Skowhegan, and Vassalboro pooling centers. This pool is being operated in cooperation with the New England Sheep and Wool Growers' Association. Last year's returns netted the Maine men $49\frac{1}{2}$ ¢ per pound.

A State shearing school was held again this year at the Veterans' Administration farm at Togus. Sixteen attended this school and received instructions. A nationally known instructor, who was enthusiastically received by the shearers, supervised this school. Five boys of high school age received compliments from the instructor as to their progress made in shearing.

Dog Licensing

The licensing of dogs in the state is still on the increase, and the towns and cities as a whole are doing a much better job. There were 63,264 dogs licensed in the year 1946 with an income of \$86,655, and 64,619 dogs licensed in 1947 with an income of \$89,589, which is an all time high.

On June 30, 1948, there was an unexpended amount of \$30,264 of dog license receipts. This money will be refunded to the various towns and cities in proportion to the amount they have paid in, which is provided by law.

In spite of the fact that damage to livestock and poultry was considerably less the past year it still was necessary to make personal investigations in some cases. Poultry losses due to wild animals is still high. Foxes and coons have been responsible for over 90% of the wild animal damage the past two years. The population of these two animals seems to be on the increase, which probably is due to their low fur market value.

There were 444 bear bounties paid by the State the last fiscal year, totaling \$6,275, as compared with 889 bear bounties paid in 1947, totaling \$8,980.

Licensing Poultry Dealers

During the fiscal year ending 1948 there were 182 licenses issued from this Department to poultry dealers, and only two complaints made for dishonest practice with one license revoked. In the fiscal year ending 1947 there were 219 licenses issued to poultry dealers.

Claims for Livestock and Poultry

Livestock Damaged by Bear. Fiscal year ending 1947, the State paid for 917 sheep killed by bear, also 15 other animals, totaling \$13,090.80. Fiscal year ending 1948, the number of sheep killed by bear was 612, and 15 other animals totaling \$8,425.40.

Livestock Damaged by Dogs. Fiscal year ending 1947, the State paid for 561 sheep killed by dogs, also 26 other animals, totaling \$8,566.50. Fiscal year ending 1948, the number of sheep killed was 805, and 25 other animals, totaling \$11,086.15.

Poultry Damaged by Foxes, etc. For the fiscal year ending 1947, the poultry loss numbered 31,168, totaling \$43,237.06 paid by the State, and for the fiscal year ending 1948, the number was 17,836, totaling \$29,096.09 paid by the State.

I wish to take this opportunity to thank you and the Commissioner for your advice and assistance in my work, also the other members of our Department for their splendid spirit of cooperation.

Respectfully submitted,

SAMUEL F. DORRANCE,

Animal Husbandry Specialist.

Damage to Sheep and Other Animals Paid by State — July 1, 1946 - June 30, 1947

COUNTY		Sheep		Calves		Heifers		Pigs		Goats		Bulls		Cows		Total		
By Bear	Aroostook	289	\$3,409.65	1	\$28.00									290		\$3,437.65		
	Franklin	214	3,407.00	2	235.00	6	\$300.00							222		3,942.00		
	Oxford	30	437.00										1	\$50.00	31		487.00	
	Penobscot	81	1,104.00	2	155.00					1	\$10.00			84		1,269.00		
	Piscataquis	92	1,155.15			1	125.00	1	\$20.00					94		1,300.15		
	Somerset	198	2,508.00											198		2,508.00		
	Washington	13	147.00											13		147.00		
			917	\$12,167.80	5	\$418.00	7	\$425.00	1	\$20.00	1	\$10.00	1	\$50.00			932	\$13,090.80
By Dogs	Androscoggin	13	\$170.00	1	\$20.00	1	\$150.00			2	\$29.00			1	\$175.00	18	\$544.00	
	Aroostook	157	1,673.00	1	50.00			2	125.00					160		1,848.00		
	Cumberland	1	15.00	2	45.00									3		60.00		
	Franklin	34	430.00											34		430.00		
	Hancock	51	652.00											51		652.00		
	Kennebec	22	407.00							2	40.00			1	10.00	25	457.00	
	Knox	4	50.00											4		50.00		
	Lincoln	10	136.00											10		136.00		
	Oxford	4	39.00											5		263.00		
	Penobscot	115	1,585.00			1	195.00	6	97.50			1	75.00	123		1,952.50		
	Piscataquis	4	55.00											4		55.00		
	Somerset	90	1,038.00											90		1,038.00		
	Waldo	10	123.00					2	30.00					10		123.00		
	Washington	41	745.00										1	58.00	43		775.00	
	York	5	85.00	1	40.00									7		183.00		
		561	\$7,203.00	5	\$155.00	2	\$345.00	10	\$252.50	4	\$69.00	2	\$133.00	3	\$409.00	587	\$8,566.50	

Total of both Bear and Dogs, 1519 — \$21,657.30.

Damage to Sheep and Other Animals Paid by State — July 1, 1947 - June 30, 1948

DEPARTMENT OF AGRICULTURE

COUNTY	Sheep	Calves	Heifers	Steers	Bulls	Cows	Pigs	Goats	Apples and Trees	Total							
By Bear — Aroostook . . .	344	\$3,909.40	1	\$12.00						345	\$3,921.40						
	Franklin	46	841.00							47	941.00						
	Oxford	36	544.00	1	18.00	1	\$30.00	1	\$75.00	43	932.00						
	Penobscot	87	829.00	1	10.00					88	839.00						
	Piscataquis	9	107.00							9	207.00						
	Somerset	40	567.00	1	100.00	1	150.00			42	817.00						
	Washington	43	588.00							43	588.00						
		605	\$7,385.40	4	\$140.00	6	\$515.00	1	\$30.00	1	\$75.00	617	\$8,245.40				
										\$100.00							
	By Dogs — Androscog'n . . .	265	\$3,324.00	1	\$45.00	1	\$185.00				4	\$235.00					
Aroostook								2	\$70.00	268	3,439.00						
Cumberland										1	91.10						
Franklin		17	345.50							18	380.50						
Hancock		25	375.00							25	375.00						
Kennebec		104	1,312.16					6	60.00	1	\$4.00	111	1,376.16				
Knox		2	17.00							2	17.00						
Lincoln		6	47.00					1	8.00	7	55.00						
Oxford		6	70.00			1	100.00	1	30.00	8	200.00						
Penobscot		83	1,035.00			3	176.19	1	\$100.00	87	1,311.19						
Piscataquis		5	55.00							5	55.00						
Sagadahoc		8	70.00							8	70.00						
Somerset		151	1,724.20							151	1,724.20						
Waldo		105	1,184.00			1	65.00			106	1,249.00						
Washington		15	208.00							15	208.00						
York	13	275.00						1	25.00	14	300.00						
	805	\$10,041.86	1	\$45.00	8	\$652.29	1	\$100.00		3	\$78.00	10	\$140.00	2	\$29.00	830	\$11,086.15
By Bobcat — Aroostook . . .			1	\$12.00						1	\$12.00						
	Oxford				1	\$30.00	1	\$30.00		2	60.00						
	Penobscot	7	\$108.00							7	108.00						
		7	\$108.00	1	\$12.00	1	\$30.00	1	\$30.00		10	\$180.00					

Total by Bear, Dogs, Bobcat, 1,457, \$19,511.55.

Poultry Damage Paid by State — July 1, 1946 - June 30, 1947

COUNTY	Fox		Dog		Skunk		Weasel		Mink		Coon		Bobcat		Bear		Total	
Androscoggin	335	\$550.41	247	\$396.15			37	\$37.00			5	\$10.00					624	\$993.56
Aroostook....	5188	8,730.35	304	479.28	680	\$970.70	242	\$313.41	88	\$101.95	444	\$780.15	13	\$29.25			6959	11,405.09
Cumberland..	1656	1,779.80	261	394.75							428	658.50	40	80.00			2385	2,913.05
Franklin.....	489	466.50	58	104.50	19	22.50	28	42.00			162	207.61					756	843.11
Hancock.....	325	662.95					28	28.00	51	112.50	888	1,664.25					1292	2,467.70
Kennebec....	367	416.25	202	228.40	20	50.00	8	16.00	17	38.25	87	88.75					701	837.65
Knox.....	426	712.87	23	32.00	30	60.00					556	615.00					1035	1,419.87
Lincoln.....	955	802.02	41	74.00							437	352.25					1433	1,228.27
Oxford.....	570	864.27	104	170.05	23	51.84	70	21.00			613	615.70	25	33.75			1405	1,756.61
Penobscot....	4011	4,876.26	117	204.50	123	193.50	95	115.20	106	164.53	222	382.60	140	264.25			4814	6,200.84
Piscataquis..	718	1,068.00	12	50.00	65	53.75	12	30.00			122	188.00	4	13.00	6	\$15.00	939	1,417.75
Sagadahoc...	661	888.00	58	96.25	19	14.25					18	22.50					756	1,021.00
Somerset.....	265	649.40	74	119.50							98	103.00	31	62.00			468	933.90
Waldo.....	3305	4,582.18	150	156.25			48	24.00									3503	4,762.43
Washington..	42	65.50	13	17.00	12	18.00	27	13.75	36	40.50	86	130.50			13	32.50	229	317.75
York.....	1578	2,397.50	487	652.55							1804	1,668.43					3869	4,718.48
	20891	\$29,512.26	2151	\$3,175.18	991	\$1,434.54	595	\$640.36	298	\$457.73	5970	\$7,487.24	253	\$482.25	19	\$47.50	31168	\$43,237.06
Total	31,168	\$43,237.06																

Poultry Damage Paid by State — July 1, 1947 - June 30, 1948

COUNTY	Fox		Dog		Skunk		Coon		Weasel		Mink		Bobcat		Coyote		Total	
Androscoggin	308	\$615.50	121	\$314.65	3	\$7.50	3	\$21.00	124	\$68.50							559	\$1,027.15
Aroostook...	2673	4,424.35	286	177.00	272	385.25	443	719.00	126	183.00	76	\$119.00					3876	6,007.60
Cumberland..	1564	2,428.78	344	564.07			107	225.00			114	153.90					2129	3,371.75
Franklin.....	201	325.13			9	13.50	71	122.50	9	22.50							290	483.63
Hancock.....	241	499.50			19	39.25	258	417.10									518	955.85
Kennebec....	383	606.95	92	164.00			63	114.00									538	884.95
Knox.....	531	1,006.22	16	25.48	58	87.00	62	149.50									667	1,268.20
Lincoln.....	279	509.28					280	509.62									559	1,018.90
Oxford.....	587	1,007.29	182	296.95			101	101.45	6	12.00			5	\$40.00			881	1,457.69
Penobscot....	1066	1,547.60	188	330.70	16	32.00	53	109.00			13	46.80			13	\$28.00	1349	2,094.10
Piscataquis..	504	896.00			35	39.00	115	172.50	171	35.00	52	51.00					877	1,193.50
Sagadahoc...	40	46.00	56	118.00									3	5.50			99	169.50
Somerset.....	256	537.80	127	547.45	50	45.65	11	27.50			7	12.00					451	1,170.40
Waldo.....	1232	1,837.01	524	539.08			189	276.90									1945	2,652.99
Washington..	71	170.50	30	70.00	15	15.00	169	190.10			13	26.00	12	30.00			310	501.60
York.....	2496	4,395.38	264	376.90			3	7.50			25	58.50					2788	4,838.28
	12432	\$20,853.29	2230	\$3,524.28	477	\$664.15	1928	\$3,162.67	436	\$321.00	300	\$467.20	20	\$75.50	13	\$28.00	17836	\$29,096.09

Total 17,836 \$29,096.09

Dairy Inspection

To Francis G. Buzzell, Chief of the Division of Animal Industry:

I am submitting herewith, my report for the two year period, July 1, 1946 to June 30, 1948.

The routine work of this division has been carried on for the past two years with the same number of men as in the previous two year period with the exception that for about a year, there was no one to do check-testing of milk samples in pasteurizing plants and creameries.

The state has been divided into six definite districts and one man is responsible for each district. I think this will work out very well in the future, although with the additional work which seems to be coming up all the time, it may be necessary to take on more men and make up more districts.

More milk and cream samples, for official analysis at the Maine Agricultural Experiment Station, than ever before have been taken during the past two years. Approximately four thousand milk samples and approximately five hundred cream samples were purchased each year. This seems to be about as many as our budget will stand.

The tables incorporated in this report will show that butter fat tests are lower than in the past. The reason for this reduction of butter fat is because of the high butter fat differential paid by dealers to producers for fat in milk in excess of 3.7%. This is more evident in the analyses of pasteurizing plant samples.

I believe we have shown some improvement in the bacterial content of the milk, yet there seems to still be a chance for improvement.

SUMMARY OF MILK SAMPLES, RAW AND PASTEURIZED, 1946-47

	<i>Number of Raw</i>	<i>Per- centage</i>	<i>Number of Past.</i>	<i>Per- centage</i>	<i>Total Number</i>	<i>Per- centage</i>
<i>Butter Fat</i>						
4% and over	2,039	69.19%	483	44.64%	2,522	62.6%
3.25% to 4%	814	27.62%	594	54.9%	1,408	34.94%
Below standard	94	3.19%	5	.46%	99	2.46%
	2,947	100%	1,082	100%	4,029	100%
<i>Sediment</i>						
Clean	246	8.35%	203	18.76%	449	11.14%
Satisfactory	1,811	61.45%	747	69.04%	2,558	63.49%
Unsatisfactory	890	30.2%	132	12.2%	1,022	25.37%
	2,947	100%	1,082	100%	4,029	100%
<i>Bacteria per ml.</i>						
Below 10,000	648	21.98%	288	26.63%	936	23.24%
10,000 to 25,000	623	21.14%	272	25.14%	895	22.22%
25,000 to 50,000	250	8.47%	91	8.41%	341	8.46%
50,000 to 100,000	356	12.08%	153	14.14%	509	12.63%
100,000 to 200,000	428	14.57%	158	14.60%	586	14.54%
200,000 to 300,000	208	7.06%	43	3.97%	251	6.23%
300,000 to 400,000	108	3.66%	23	2.12%	131	3.25%
400,000 to 500,000	47	1.58%	10	.92%	57	1.41%
Over 500,000	279	9.46%	44	4.07%	323	8.02%
	2,947	100%	1,082	100%	4,029	100%

CREAM SAMPLES, RAW AND PASTEURIZED

	<i>Number</i>	<i>Per- centage</i>
<i>Bacteria per ml.</i>		
Below 10,000	74	13.05%
10,000 to 25,000	81	14.29%
25,000 to 50,000	45	7.94%
50,000 to 100,000	67	11.82%
100,000 to 200,000	83	14.64%
200,000 to 300,000	34	5.99%
300,000 to 400,000	28	4.94%
400,000 to 500,000	1	.18%
Over 500,000	154	27.15%
	567	100%
19 samples contained added water		667 samples contained no coli organisms
1 sample was grossly under-pasteurized		

Milk and Cream Samples purchased from July 1, 1946 to June 30, 1947

Total number of milk samples 4,029

Total number of cream samples 567

STATE OF MAINE

SUMMARY OF MILK SAMPLES, RAW AND PASTEURIZED, 1947-48

	<i>Number Of Raw</i>	<i>Per- centage</i>	<i>Number of Past.</i>	<i>Per- centage</i>	<i>Total Number</i>	<i>Per- centage</i>
<i>Butter Fat</i>						
4% and over	1,973	73.07 %	503	37.2 %	2,476	61.11 %
3.25% to 4%	676	25.04 %	817	60.43 %	1,493	36.85 %
Below standard	51	1.89 %	32	2.37 %	83	2.04 %
	2,700	100 %	1,352	100 %	4,052	100 %
<i>Sediment</i>						
Clean	99	3.67 %	228	16.86 %	327	8.07 %
Satisfactory	2,064	76.44 %	1,040	76.92 %	3,104	76.6 %
Unsatisfactory	537	19.89 %	84	6.22 %	621	15.33 %
	2,700	100 %	1,352	100 %	4,052	100 %
<i>Bacteria per ml.</i>						
Below 10,000	623	23.07 %	348	25.74 %	971	23.96 %
10,000 to 25,000	634	23.48 %	354	26.18 %	988	24.38 %
25,000 to 50,000	82	3.04 %	71	5.25 %	153	3.78 %
50,000 to 100,000	434	16.07 %	231	17.09 %	665	16.41 %
100,000 to 200,000	441	16.33 %	207	15.31 %	648	15.99 %
200,000 to 300,000	199	7.37 %	20	1.48 %	219	5.40 %
300,000 to 400,000	5	.19 %	58	4.29 %	63	1.56 %
400,000 to 500,000	22	.82 %	4	.3 %	26	.64 %
Over 500,000	260	9.63 %	59	4.36 %	319	7.88 %
*	2,700	100 %	1,352	100 %	4,052	100 %

CREAM SAMPLES, RAW AND PASTEURIZED

	<i>Number</i>	<i>Per- centage</i>
<i>Bacteria per ml.</i>		
Below 10,000	84	15.88 %
10,000 to 25,000	75	14.18 %
25,000 to 50,000	15	2.84 %
50,000 to 100,000	82	15.5 %
100,000 to 200,000	75	14.18 %
200,000 to 300,000	35	6.62 %
300,000 to 400,000	11	2.07 %
400,000 to 500,000	2	.38 %
Over 500,000	150	28.35 %
	529	100 %

*4 Samples were grossly under-pasteurized

Milk and Cream Samples purchased from July 1, 1947 to June 30, 1948

Total number of milk samples 4,052

Total number of cream samples 529

Producers' Composite Samples

A full time man was acquired late in December of 1947, and he is spending his entire time on check-testing of producers' composites in milk plants and working on specific samples to determine whether or not milk is being properly mixed when it is dumped. I feel that this work is of the greatest importance. We have made tests on one tank using an air agitator. It was hoped for some time that this type of agitator would prove a solution to our problem of improperly mixed milk, but figures do not seem to show that this is an effective way of mixing milk.

It seems to be impossible for the manufacturer to design a dump tank which will guarantee the milk being properly mixed when dumped into it. Several tanks have been found this year which did not mix the milk properly and this is the answer to our problem of why milk tests vary so.

At the present time, several plants are agitating all milk by hand, mixing it before it is dumped. This is expensive and will only be continued until equipment can be installed to mix the milk properly.

Many composite samples have been tested before the plant operator tested them, and payment has been made on these tests. We are very pleased with the cooperation received from milk handlers in this respect.

Still, as in the past, more attention has been given to the methods of testing and equipment in the plant rather than to the actual testing, for it is found that testers make very few mistakes. If the proper sample is not taken, that is, a representative sample, the correct testing of the sample will not give the right results as far as the producer is concerned. We are still recommending that all dump tanks be equipped with agitators. There still seems to be quite a question in everybody's mind as to what type of agitator to install in order to get the milk properly mixed. There is much which needs to be done in the plants, especially with butter fat worth from eighty cents to a dollar ten a pound, according to the market where it is shipped.

Quality Control Laboratory

This work has been continued as in the past, in conjunction with the Bang's disease laboratory. This work is very important. Any dealer's troubles may be quickly determined by using the facilities which we have in our laboratory. Approximately five hundred samples have been tested for butter fat and more than six thousand

for bacterial content. Most of these samples have been laboratory pasteurized before being set up for bacteria counts.

Some form of quality control must be carried out by the dealers themselves in conjunction with our State laboratory if high quality milk is going to be sold. This laboratory should be used for less routine work and more to handle quality control problems of the dealers, which should not occur too often. All of this work for the dealers should not and cannot be done in this laboratory. It seems wise to recommend that weekly tests be made in plants, large and small, by using Methylene Blue or Resazurin. Then if any trouble develops, our quality control laboratory can be of assistance.

Farm Inspection

We have been working for the past two years under uniform rules and regulations governing the production and handling of milk and cream, as promulgated by the Commissioner of Agriculture. Compliance with these regulations has been most gratifying. Any producer complying with these can now be reasonably sure that he can pass Massachusetts inspection as well as Maine inspection, and ship his milk to a Massachusetts market if he so desires.

All Maine producers and producer-dealers have been inspected one or more times during the past year. This is something which has never been done in the past. I believe that the results of this work will become evident as time goes on.

Highmoor Show

The State Type and Production Show at Highmoor was resumed in 1946 and was held under canvas at Highmoor Farm in Monmouth that year and in 1947. There were not as many cattle exhibited at these two shows as before the war, but the quality of the animals shown was the best.

Court Cases and Civil Hearings

Several civil hearings have been held which were satisfactorily settled without going into court. One case of grossly under-pasteurized milk was tried in court and the defendant was found guilty. Three cases of watered milk were also taken into court and the defendants were found guilty of adding water to their milk.

I wish to thank you, Mr. Buzzell, for your counsel and assistance during the past two years. I also wish to express my appreciation of Commissioner Gardner's advice.

Respectfully submitted,

C. P. OSGOOD,
Chief Dairy Inspector.

Division of Plant Industry

To Hon. A. K. Gardner, Commissioner of Agriculture:

The following report of the work of the Division of Plant Industry is hereby submitted. The Division is charged with the certification of seed potatoes, insect control work, nursery inspection, general horticulture and work with Seed Potato Board.

Certification of Seed

The following tables indicate the volume of work which has been done between July 1, 1946 and June 30, 1948.

1946-47	A. Entered	A. Passed	Cwt. Cert.	Cwt. Sold
Katahdin.....	36,496	17,121	7,165,138	1,455,682
Irish Cobbler.....	17,365	15,110	5,288,325	1,495,575
Green Mountain.....	11,107	6,572	3,192,263	616,382
Chippewa.....	6,686	3,321	1,260,319	209,115
Sebago.....	4,525	2,587	1,100,509	187,634
All others.....	916	566	233,465	58,298
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	77,095	45,277	18,240,019	4,022,686
1947-48				
Katahdin.....	33,730	25,935	10,143,821	1,852,921
Irish Cobbler.....	10,862	10,203	3,925,290	1,530,195
Green Mountain.....	8,918	7,574	3,040,158	632,257
Chippewa.....	8,320	5,649	2,329,594	295,793
Sebago.....	2,549	2,224	798,416	184,332
All others.....	1,039	921	315,868	87,939
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	65,418	52,506	20,553,147	4,583,437

There seems to be no better way to get a good picture of the certified seed industry than to study the tables which we always make available for our annual report.

The decrease in the acres entered between 1946 and 1947 no doubt was due to the low per cent of passing in the first year. Our report of two years ago was not too optimistic, but at the moment there seems to have been a steady growth of interest in certified seed. In general, the trend is upward, especially when one thinks of production in terms of yield per acre. In 1946, on 45,000 acres of potatoes we had an average all-time record of 404 bushels per acre.

In 1947 our average was 395 bushels. Virus disease counts, as evidenced by the Florida Test, indicate that we are at an all-time low. Some of us close to the industry realize that it is only three years since we had a high virus count. Some think that DDT plus a low aphid cycle and low general insect population is the reason. Let us be reasonable and say the situation is good at the present time and let us hope that DDT keeps the aphid cycle constantly low.

Even if our Irish Cobbler sales increased this past year, it was not sufficient to overcome the lead taken by the Katahdins. Chipewa sales have increased since it has been possible to control leaf roll, and Sebago sales have remained fairly constant. The 1947-48 season was the largest sale of certified seed since the work started. The price differential was very narrow. Each year the support prices prevailed and we understand that futures are now being quoted on about the same basis.

Potato Diseases

In my last report I commented that there had been no new variety releases that have proven to be better than the Katahdin. This spring Dr. F. J. Stevenson, U. S. D. A. geneticist, and his assistant, Mr. Robert Akeley, released the Kennebec variety, and watching the work done by our Seed Board, it is my opinion that the Kennebec is the best seedling that I have ever seen. This summer will be the first opportunity to study the variety on a field of any size, and I will be very disappointed if the vigor and yielding ability of this new seedling does not surpass anything that we now have.

The increased use of DDT and other spray materials has no doubt contributed much towards keeping the potato disease content at a minimum. There continues to be a slight increase in spindle tuber, not enough yet to be of commercial importance, but enough so that the foundation grower has a real responsibility.

It is becoming increasingly difficult to find strains of the newer varieties that are free from mixtures. The sooner that we can get the Kennebec into production, the sooner the mixture problem will become less important.

In spite of what the pathologists have told us about blackleg, the people who are buying our seed still hold us responsible for the blackleg in their growing crop. I sometimes wonder if we have as much information on blackleg as we really need.

Southern Trip—May-June, 1948

Mr. Everett Westin, chief inspector in charge of certified seed work, has for the past two years made a trip to the seed buying states in an effort to determine our standing. The idea in sending him is to find out how our seed is doing in the field. We also want to learn where our competitors may be taking some business away from us because we do not satisfy the demands of the trade.

In Alabama, Dr. Garrett for some reason recommends western seed to the farmers. There must be some good reason for this, and it must be corrected. We got some complaints from top-killing discoloration, but in general the seed was performing well. From Florida came the report that we were doing a good job, but falling down on grading and packing. The quotations in the Carolinas on stock from our competitors indicated that we were out of line. P.E.I. was being quoted at 50¢ per sack less than Maine, and South Dakota 56¢. I do not know that our inspection service should be too much concerned with this, but we can't increase sales in the face of these differentials unless we do a highly specialized job.

A check of the inspection records in North Carolina found that the majority of our stock arrived in good condition. However, what poor lots did arrive were scattered through the potato areas and left a bad impression. We believe that we have increased our sales in North Carolina this past year due, no doubt, to the low virus count which we have been able to deliver.

Stock was growing good in Virginia and Maryland, but again the price differential was noted. There were a few complaints about stock on arrival. One dealer questioned Mr. Westin rather closely about shipments to small growers. He thought our folks would be much better off if we did business with the dealers rather than working through individuals because the dealer has a better financial rating and facilities for correcting any matters that may come up in a business way. It is my impression that the larger dealer is right, that there isn't much hope for us to do a farmer to farmer business and that any efforts in that direction generally end in disaster.

I can only say that the State Department of Agriculture isn't too much concerned with who buys certified seed, but we are concerned with the treatment which it receives after arrival at the other end of the line.

Long Island and New Jersey gave a good report as to the performance of our potatoes, but a summary would indicate that there

was some stem-end browning apparent at time of arrival which caused complaint. We are getting some kick-back from the amount of blackleg all along the coast but according to the best advice from the plant doctors this is not our responsibility. I think, however, when we can do a better job packing Blue Tag certified seed we will have accomplished a lot. We are continually asking our inspectors to do better and we wish that the operators would take this rather seriously and put in a little more time helping us check the entire crop.

I got a good report from different ones regarding the visit of Mr. Westin to that territory. I think he understands the situation very well and has made a good representative for us. I wish we had someone of his type whom we could keep on the road more of the time.

Nematode

Under authority granted the Commissioner of Agriculture by the last Legislature, a quarantine has been established which prevents the importation of Irish potatoes from Nassau County, Long Island, New York; also from that part of Suffolk County now under quarantine by the New York State authorities. While this Department regrets the necessity of such a move because Long Island has long been one of our best customers, and still is, our responsibility to the 32 states to which we ship certified seed and the necessity of keeping that seed from all trouble, forced this Department to take drastic action. We have every confidence in the authorities that are handling this quarantine and hope the time is not far distant when we can remove the same. In 1947, 2800 acres of land were surveyed in Aroostook and Penobscot Counties in an effort to determine whether or not the Golden Nematode was present. Testing was done at Aroostook Farm in the greenhouse where facilities were made available to us by Dr. Fred Griffie of the Experiment Station. A similar survey will be undertaken in 1948.

The Potato Rot Nematode is still a factor in Prince Edward Island. We have never had this nematode so far as we know. Sometimes I think we are amiss in our duty and wonder if we should not stop the importation of potatoes into Maine from all areas, and also stop the use of any potato sacks other than new ones, either burlap, cotton or paper. No one likes a quarantine, but it is too late to close the door after the horse has been stolen. Quarantines are unfriendly and any state that has as many potatoes to sell as we do needs all the friends they can get. This is probably our reason for not being more severe in our action.

Ring Rot

This is still the most troublesome potato disease so far as I know. It can cause more trouble because of the very nature of the organism. It is difficult to find at digging time in the plant, not easy to see in the tuber and occasionally a lot gets away from us in which the count is too high. For the most part, however, we think careful inspection keeps the danger reduced to a minimum.

Florida Test

Florida Test continues to be popular because of the advance information. Our growers have learned that the results which they get from this test is valuable only to the extent of having taken a good sample. More than ever, I think the samples are being taken as they should be. I wish we had bought a farm in Florida in 1938 because the tail is wagging the dog right now. We are paying \$16,000 for 80 acres of land and the owners furnish the fertilizer and do the farm labor.

State Seed Potato Board

In 1946, the State Seed Potato Board acquired the potato crop of Mr. Harry Allen of Masardis. His potatoes were allocated to people who would multiply them and have them for sale the following year. The Board was interested because they were known to be free of ring rot. In addition to this project, the Board carried on some seed plot work on hired land on the Stanley English farm. In 1947, we did not contract with Mr. Allen because of our failure to agree on a price.

We did, however, carry on our seed plot work on the farm of Earl Craig at Castle Hill. This was not satisfactory because a good seed project starts on its own land and invites trouble by transferring potatoes and equipment between various farms and storehouses. Mr. Craig did more than his part to help us, and any progress we made is due in no small measure to his effort. Both in labor and actual finances, Mr. Craig was very generous.

In December, 1947, the State Seed Board purchased the Bean and Allen farm at Masardis for \$40,000. This price included most of the equipment. Many of us were very happy when this trade was made because we knew that we could not do a first-class job until we had a farm. We may not do it now but, at least, we have the opportunity to put into practice all the things our Director, Wesley Porter, has learned over a period of years. Mr. Fred Weaver was hired as the farmer in charge and he and Mr. Porter make a

good team. This year we have planted about 96 acres of potatoes. We intended to have 100 but our seed did not cut out as well as we had hoped. At present, we are planning a program which will provide that 12,000 barrels of seed be made available each year for the foundation growers. If we can get by the first two or three years on this farm without any trouble, I would predict that no one can hope to grow any better seed potatoes than we can produce. We have got to have time to study the land, get used to the equipment, and get our rotation in its proper place. Of the 96 acres, 17 are the new Kennebec and the Board will distribute them largely to foundation growers within the state who will multiply them for next year. In 1949 our program calls for 50 acres of Kennebecs on this farm. Plans are already made for the construction of a new potato house at Squa Pan Siding which will cost about \$26,000. This should house 16,000 barrels. While we do not plan to grow this much, we do want some room to handle what we grow. We are to replace some of the machinery now on the farm and hope to get into good operating condition. At the moment, we have 46 acres of Katahdins, 13 acres of Cobblers, 14 acres of Green Mountains, 17 acres of Kennebecs and 5 acres small seed plots.

The Seed Board has held fourteen meetings in the past two years, trying to work out a good program which will be of benefit to the industry of the state. The last Legislature amended the act under which we were operating, making it somewhat easier for us to do business. For a time we could not meet the requirements of the act and operate. One hundred thousand dollars seems like a lot of money, but we will have \$65,000 tied up in land and buildings, and on July 1 of any year the crop will represent \$20,000, so the operating capital is none too large to get the crop grown and get it under cover. We hope to pay our way, and that is all the law expects us to do. No one could have had any more help from individuals than we have had. Town officials, railroad officers, farmers, dealers, everyone has been kind to us in the matter of locating equipment, etc. The Board is anxious to have available at all times seed that can be used by foundation growers so that they, in turn, can sell seed to our certified group. It has not been smooth sailing all the way, but Wesley Porter and Dr. Simpson of the Experiment Station have been the leaders in a good program and I know it will continue to be good as long as they are connected with it.



E. L. Newdick, left, and Wesley F. Porter at work on the new State Seed Farm at Masardis.

European Trip

In February and March of 1948, I spent two months in Europe with Mr. A. E. Mercker of the U. S. Department of Agriculture. The trip was designed to acquaint the potato industry of this country with the general potato situation of Europe. We were traveling as representatives of the office of Foreign Agricultural Relations of the U. S. D. A. A detailed report will be released as soon as it is approved in Washington.

We called on Ministers of Agriculture, Agricultural Attaches, Experiment Stations, exporters and importers, and local retail markets. In one country we were able to inspect the growing crop. Contacts were made in England, Germany, Austria, Italy, Spain, Portugal, France, Belgium and Holland. We were well received by everyone. We had an opportunity to inspect a boatload of table stock potatoes at Bremerhaven. There were 25 boatloads shipped to Europe last winter from this country as part of the Recovery Program. They did a world of good, especially in Germany where food is very scarce. At Trieste we inspected two boatloads of seed, and I have been promised a report from the food officer in Vienna as to the performance of these potatoes.

In our travels, we learned that many American varieties had been tested in Europe and in many instances the Irish Cobbler performed especially well, even under trying conditions. I believe that enough work has been done by the different Experiment Stations so that they know quite well the history and performance records of most American varieties.

Many countries use a yellow flesh potato for eating and the white flesh varieties for industrial purposes. The color of the flesh is not too important in those countries where folks are hungry.

The potato breeding program is carried on by individuals in most cases rather than by a governmental agency and a royalty is paid to the breeder when a variety of his receives official sanction.

Small potatoes are the ones used for seed. For years, breeders have planned to grow smaller varieties for seed purposes. The yield per acre is usually high. We visited many scientific institutions and learned that in the final analysis their problem was the same as ours, viz., breeding new and better varieties and by means of tuber index to get potatoes free from the more virulent latent mosaics. It is doubtful if we ever again sell seed to Europe under normal conditions. As long as there is a European Recovery Program or a Marshall Plan, potatoes from the United States should be in the picture. The food authorities seem to be more concerned with potato flour than with the bulk fresh vegetable. No doubt this was due to the fact that potato shipments carry 87% water and are subject to all the dangers that accompany the handling of perishable products, say nothing about the freight cost.

We did not hear any discussion regarding the Golden Nematode or ring rot. From the best information we could gather the Golden Nematode was very harmful in many countries. It is necessary to plant potatoes on those fields where the nematode count is low. I believe the European people have learned to live with ring rot by using whole seed. In conclusion, we were able to visit with the top potato scientists of the world. Dr. Appel of Germany could very properly be called the Father of Seed Certification. We spent three hours with him even though at the time he was on the Russian payroll. I am grateful to those who made it possible for me to visit Europe.

Insect Control

This section of our report will have to do with Gypsy and Brown-tail moths, the Japanese Beetle, European Corn Borer and Green-

head Fly. In order to conserve space the reports of the assistants in charge of the various projects have been condensed.

The insect population at the present time is at a very low point. The sections of the state that have been bothered with Gypsy and Brown-tail moths will have a year or two when they will not notice the presence of these pests. From a control standpoint our conditions are excellent to do moth work. It is much easier to control a smaller infestation than it is to reduce the size of a larger colony. The Japanese Beetle is on the increase and because of the geographical location of the colonies they are difficult to handle. In both Portland and Auburn they are located in an area of dense population and to use arsenate of lead for soil treatment would mean that there might be some difficulties. We will study the problem and see what can be done.

We will plan to exchange our present turbine blower for a later model so we can be in a position to help when there is an emergency. We have cooperated with several towns in carrying on a spraying program and believe much good has been accomplished.

European Corn Borer

The European Corn Borer population is too high. We have not been able to get sufficient information from our research program to give us a control insecticide and proper equipment. Much of the money that is being received as a result of the tax on sweet corn is being used for research. Working with the Corn Borer Committee of the Maine Cannery Association, the Department has pledged \$7,000 toward the research program for the present crop year. If we are not able to control the corn borer by means of insecticides, the future of the industry is at stake. The last quarantine against the importation of corn into the State of Maine will be removed this year because our borer population is so high that the quarantine is useless. In general, quarantines provide delaying tactics and we think that has been the case with this insect in Maine. The writer is still of the opinion that when a good clean-up job is done, it will control the European Corn Borer, but there are too few people who do a good job.

Greenhead Fly Nuisance

For many years the Department has been requested to do something about the Greenhead Fly, which is such a nuisance to some of our summer people. We have done some work in previous years, but apparently did not have the correct information. This year we

hired Mr. Everett Tuttle of Bates College to make a detailed study and recommendation, and to see that a program was carried out. A report follows:

"Annually, the fly, known as the Greenhead Fly, emerges in the salt marshes washed by and surrounding tidal areas. Adjacent to some of these marshes are beaches and summer resorts, and in some places a few farms. The fly emerges during July and August, and creates a nuisance of itself by its vicious habit of biting both man and animals in its quest for a blood meal. The Greenhead Fly is not known to transmit disease, but its biting habit is a source of discomfort and annoyance to all who have fallen victim to its ferocious attack. The months of July and August, being the period of most activity at summer resorts and beaches, makes the Greenhead Fly nuisance, at those areas, a problem of widespread concern.

"The salt marshes adjacent to and immediately behind Small Point Beach at Small Point, Maine, was chosen for experimental control. The summer residents in this area have increased in recent years and the Greenhead Fly annoyance has become very serious. During the peak of its production it has been impossible to allow children to go near the beach. In addition to privately owned cottages, there is also a Small Point Club accommodating summer guests. This Club finds it hard pressed to remain open for the full summer period with loss of business during the period of high production of the fly. The Club is operated by summer people at the Point.

"The beach is divided into two parts by the Sprague River, which stems from the east branch of the marsh. This Sprague River also has a branch in the west marsh. The two marshes extend inland from directly behind the eastern part of the beach called the Sea Wall Beach. The Sea Wall is a natural wall of sand dunes between the beach and the marsh areas. The beaches are in the shape of a crescent. The west marsh is about 80 acres and the east marsh is about 200 acres. The two marshes extend back from the beach in cone shapes, being connected just to the rear of the sand dunes.

"It has been established by past study, and corroborated by recent studies that the Greenhead Fly (*Tabanus nigrovittatus*) breeds only in a salt marsh. Marsh sod with a high water and chloride content tends to produce and support an increased percentage of larvae over other sod with a lower chloride and water content.

"These larvae, that hatch from eggs laid by the Greenhead Fly

on the marsh, winter over in the sod in a dormant stage until spring. They become active in the spring according to weather conditions. In June and July they pupate for a period of about eight days and then emerge as an adult fly. Unfortunately, no eggs have yet been identified.

"The life span of the adult is uncertain. One captured fly, a female, lived for eight days in a 6x1 test tube in the presence of marsh grass. The adult fly does not travel far from the marsh ordinarily, and they return to the marsh at sundown for the night. They leave the marsh when it is hot and humid, with not much breeze. Although the adult has a white line down the back of its seven segmented abdomen, its outstanding mark is its large, bright green head.

"The larvae, whitish, cylindrical, with a raised ridge or ring running around the body at each of eleven segments, and tapering at both ends, live in the marsh sod entwined among the roots and rhizomes of the marsh vegetation, and are predacious, feeding on small aquatic or underground creatures, especially insect larvae.

"None of the collected larvae lived very long in captivity, although several methods of maintaining them were tried. The most successful method was to provide a natural environment of marsh sod. In addition to the larvae found, two pupae were also collected on July 21, but failed to live more than forty-eight hours.

"The methods of collecting specimens were after those of other investigators. At best, any method is a laborious and time-consuming task. Just digging proved useless entirely. The spraying of a larvicide was fruitless also. I finally used an old method of mowing yard square plots in varying sectors of the marsh, and washed the sod through a handmade sieve of cheesecloth on a wooden frame. The dirt would wash through with the water leaving only the roots and tangle of underground growth, along with any larvae that might be present. This was all done in an effort to determine what sod condition supported the larvae best.

"All work in surveying the area, and searching for specimens and learning their history and habits has been for the purpose of control. After scouting the area it was decided that all of the 80-acre wing and 70 acres of the east wing directly behind the sand dunes, making a total of 150 acres, should be sprayed. This would make a barrier of protection behind the beach. Also a small section of three or four acres directly behind head beach, used by the residents, was included.

"The material used was the same as that used so successfully

in 1947 by the Massachusetts Department of Agriculture for their control of the Greenhead Fly in the area of Wingdersheek Beach at Gloucester. This consists of the following:

DDT mixed one pound with
Xylene one quart makes a 30% solution
Fuel Oil
Aluminum Stearate 1% by weight

“The DDT (dichloro-diphenyl-trichloroethane) came prepared as a 30% solution dissolved in Xylene. Twenty gallons mixed with forty gallons of fuel oil, and 4 2/10 pounds of aluminum stearate makes a spray of 60 gallons with one pound of DDT per gallon. Two pounds of DDT per acre was decided upon to obtain effective control. For 150 acres, 300 gallons of spray was used to get desired coverage.

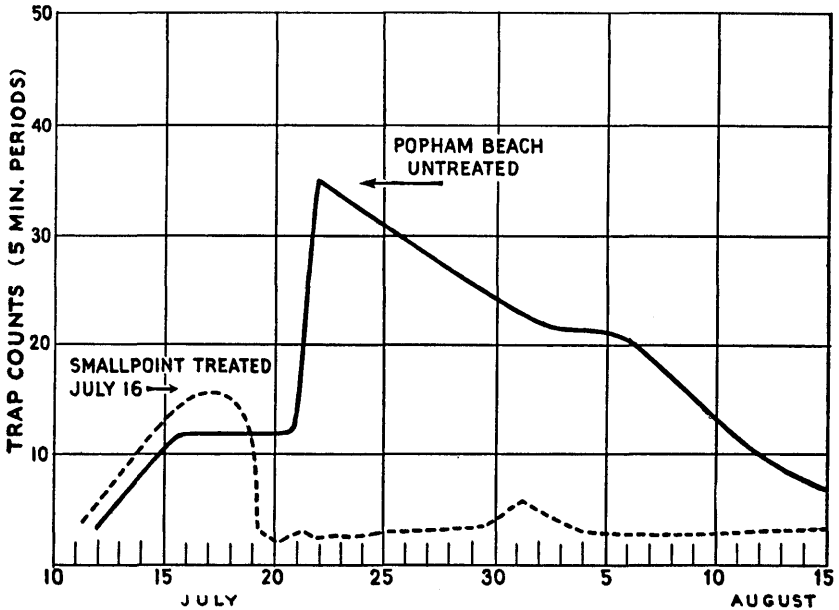
“At 5 a.m., July 16, 1948, spraying operations began and lasted until nearly 10 a.m. The weather was good and the coverage was excellent. The spraying was done by airplane at thirty feet above the marsh. The airplane loaded up at the Brunswick Municipal Airport, and made six trips to the Small Point marsh area. One man piloted the plane, while a second man prepared the spray for the next loading. All material for spraying was provided by the Airborne Sprayers, Inc., with the exception of the aluminum stearate which we purchased.

“On the accompanying chart, made for convenience, it can be seen that the flies began to emerge about the 12th of July. After spraying on the 16th, the population decreased and remained so for a period of 14 days before any appreciable rise was observed. At the same time in an untreated area, Popham Beach, the population increased from the 12th onward. No appreciable drop was observed until the 30th of July.

“However, in the Small Point area the complaints of Greenhead Fly presence in bothersome numbers was reported by bathers on the beach about July 29. On the afternoon of the 30th of July, several flies were observed on the beach, but none were bothering the bathers to any great extent. It was stated that their numbers were many on the two previous mornings. On the 31st, after taking population counts at the marshes, about an hour was spent on the beach in an effort to observe the flies in abundant numbers. Few flies were seen.

“It may be added, that there was a strong wind on the 30th of July, and other unknown conditions unfavorable to Greenhead

PREVALENCE OF GREENHEAD FLIES
IN TREATED AND UNTREATED AREAS



Fly activity may have been present on the 31st of July. It may be restated that the fly leaves its resting place on the marsh grass for feeding excursions when it is still, hot and humid. They return to a resting position on the marsh grass for the night and whenever weather conditions are unfavorable.

"It was found through examination that the female fly is the only one equipped with mouthparts, mandibles capable of piercing the skin. This is a clear indication that the female alone requires a blood meal. This may be an explanation as to why flies were numerous on the beach on the 30th and 31st, and yet the population counts at the marsh were low. The flies on the beach could have been females in search of a blood meal, and those left at the marsh could have been members of a poor generation of males.

"A final check was made August 14th for the prevalence of the Greenhead Fly. As the results show, on the chart, the numbers of flies present is diminishing rapidly, indicating that the Greenhead Fly season is drawing to a close. Also, bathers and residents say that the numbers have decreased on the beach very much. Inspection, on this date, of the beach failed to reveal a single fly.

"Inasmuch as the effectiveness of the spray lasted for only a duration of 14 days, it seems that one spray is not sufficient to adequately control the Greenhead Fly nuisance for the summer season. However, if the spraying time is held off until a week after the Greenhead Flies have been observed in large numbers, it may be possible to reduce their numbers to a point of effective control with one spraying for the remainder of the season."

Summary

The members of the Division have been very glad to take part in the extra curricula duties. Our horticultural section has been very active in the field of floriculture, especially with the garden club groups and we believe that a special word of commendation is in order.

The European trip taken by me last winter has made it necessary to attend about 37 extra meetings. I have enjoyed giving a report to the public and believe that the calls for this special talk will soon be over.

Of all the items in the Division work, ring rot, one of our outstanding potato diseases, seems to continually demand attention. There is no way of determining the amount of ring rot that may be moved in certified seed. We hope it is not of commercial importance but cannot be sure.

As usual, we have worked very close with the Division of Markets and believe, more than ever, that it is easier for us to coordinate our work.

We are putting forth a real effort to get an assistant to help us and believe such a man will become a member of our staff before long.

I wish to thank you and all my associates for the patience which you have shown and the help which you have given me. I hope I have done my part in return. To all those engaged in the production and promotion field in agriculture, I am very grateful.

Respectfully submitted,

E. L. NEWDICK,

Chief, Division of Plant Industry.

Horticulture

To E. L. Newdick, Chief, Division of Plant Industry:

Following is a summary of the activities of the Bureau of Horticulture covering the period from May 17, 1947 to June 30, 1948.

The Bureau, by statute, is charged with the inspection and certification of nursery stock produced in the state, as well as the inspection of stock entering the state from outside sources. This inspection includes consideration of methods and conditions under which nursery stock is handled and offered for sale, and the licensing of plant handlers. The Bureau is also charged with the inspection of bees for the control, and prevention of the spread, of bee diseases. The latter function has been curtailed during this period due to the lack of a necessary appropriation.

Nursery Licenses Issued

<i>Year</i>	<i>Fee</i>	<i>No Fee</i>	<i>Total</i>
1946	466	177	643
1947	512	199	711
1948 (to July 1)	499	147	646

Distribution of Licenses

1947

Full-time Florists and Nurserymen	258
Outdoor Flower and Gladiolus Growers	176
Stores handling Nursery Stock	140
Strawberry Plant Growers	73
Nursery Agents	69
	716*

*5 Strawberry growers also included in other classifications.

The inspection of nursery stock involves the checking of greenhouses, flower shops, stores handling plant materials, outdoor plantings of flowers, gladiolus, shrubs, trees, and evergreens, and small fruit plants. The presence of injurious insects and diseases is watched for; the general condition of the stock is also considered, as well as the conditions under which the stock is held and offered for sale. Assistance is given where insect and disease problems develop, and

where other difficulties arise in the growing or handling of stock. At least one call a year is made on all licensees, while it is necessary to inspect strawberry plantings twice. Stores are inspected several times during the spring planting season and at the flower holidays.

Red Stele Disease of Strawberries

The identification in Maine in 1945 of a serious new fungus disease of strawberries, known as the Red Stele root disease, has resulted in a decided increase in the requests for the inspection of strawberry plants for certification. The nature of the disease, favored by cold, wet soil and consequently most active in spring and fall, has made it advisable to change the method and time of examination. Formerly strawberry plants were inspected once during the summer, for other strawberry troubles can be detected at that time. It has now become necessary to visit each planting twice during the season, once in late spring and once in the fall. For plantings which have been found to be clean during the previous season the spring inspection is performed during the blossoming and fruiting period, when above ground symptoms—the wilting and dying of affected plants—are most readily apparent. In the case of new plantings, the spring inspection must be made before the plants are dug for sale in the early spring.

In the event that Red Stele is detected in a plot it is necessary to condemn the entire planting. The spores of the disease are carried in the soil water and in the movement of the soil itself, as in cultivation. Consequently, the appearance of any infected plants in a plot indicates the possibility of general infection. When a case of the disease is discovered it is necessary, in order to qualify for future certification, for the grower to destroy the plants by plowing them under, disinfect equipment used on the land, and to reset with certified plants on land which has not been planted to strawberries for at least five years, because of the long life of the resting spores, and on land which will not become recontaminated by drainage water or otherwise.

Examination of a planting requires the digging of a representative sample of plants from the entire area devoted to strawberry culture, with particular emphasis being directed to low spots, watercourses, and other poorly drained areas, and also to any areas where the plants show variation from the vigor of the piece as a whole. The roots of each of these plants taken in the sample must be closely examined for symptoms of infection. These include the loss of lateral

roots from the main roots, the rotting of the lower part of the main roots, and the red staining of the core of the roots (botanically, the root stele) above the rotted portion, the latter being the specific identifying characteristic of the disease.

Red Stele is a disease which can cause extensive damage if undetected, since it results in the death of infected plants usually at about the time of blossoming and fruiting. A confusing feature of the disease lies in the fact that it is most active in the roots when the soil is cold and wet; plants which are mildly infected in the spring may appear to recover during the warm, dry weather of summer, through the production of new roots while the progress of the disease is checked by higher soil temperatures. Such apparent recovery is only temporary, however, since the infection will resume development upon the return of conditions more favorable to its activity.

The only means of control which have been devised for Red Stele to date are cultural. Beds known to be infected should be promptly destroyed by plowing under and the land used for other crops, since strawberries only are affected. New plantings should be made from certified stock, or from the grower's own stock if it is known to be clean. A site should be selected which is well drained, and a rotation program should be developed which will include strawberries no oftener than once in five years on any one piece of land. All equipment used on infected soil should be sterilized before moving it onto clean land. Finally, the use of resistant varieties should be investigated.

Unfortunately our major commercial varieties, Howard 17 and Catskill, are very susceptible to Red Stele infection. Several new introductions have been developed, however, with marked resistance to infection. Of these, Temple, Sparkle, and Fairland, are showing considerable promise under Maine conditions and should be given a trial by all growers.

Number of Inspections for Strawberry Plant Certification

<i>Year</i>	<i>Total Applications</i>	<i>Condemned</i>	<i>Certified</i>	<i>Total Acreage</i>
1944	30	—	30	—
1946	53	12	41	37 3/8
1947	84	11	73	38 1/4
1948 (Spring Insp.)	93	3	90	40 1/4

The florist industry has enjoyed a period of good business during the past two years. The amount of greenhouse space has been steadily increasing, with the establishment of several new businesses

and the enlargement of a number of existing ones. Considerable interest has been shown in the industry by ex-service people of World War II, several having purchased businesses and many others taking the opportunity offered by the government to learn the business through on-the-job training programs supported jointly by the government and the operators.

One disaster occurred in the industry during the past year, when all of the florist establishments in Bar Harbor and one in Cape Porpoise were destroyed during the great fires of October, 1947. I am happy to report that practically all the operators of these businesses have been able to re-establish themselves and look to the future with excellent prospects and good courage.

We have cooperated with the Maine State Florists' Association in its activities, which have included excellent and well attended meetings at Ellsworth in August, at Lewiston during the Agricultural Trades Show in January, and at Orono in April; we also staged the flower display sponsored by the Association in the Maine Building at the Eastern States Exposition at Springfield, Massachusetts, the first time Maine florists have been so represented. For the past two years I have served the Association as secretary-treasurer. Other horticultural groups in whose activities we have participated are the Maine Gladiolus Society, whose annual Exhibition in August is an outstanding event, and the Central Maine Horticultural Association.

The "Maine Leaf", a monthly newsletter designed to aid florists and nurserymen in Maine, is now in its fifth year. This newsletter has received considerable attention in the trade outside of the state, and material from it has been reprinted by trade periodicals, garden magazines, and newspapers. I am indebted to Professor Roger Clapp of the Department of Horticulture of the University of Maine for valuable assistance in the preparation of material for this publication.

We have engaged in the activities of the Maine State Pomological Society for the benefit of the fruit industry. This included among other matters participation in the conduct of the Apple Tree Pool, the design of the fruit display for the "Maine Apples for Aroostook" campaign held in Houlton in November, and acting on the committee forming plans for the Apple Annie ceremony at the Agricultural Trades Show in Lewiston.

Aid has been given the garden club movement in the State through lectures on garden problems, serving as judge for flower shows, and participation in the activities of the Garden Club Federation of

Maine, a group composed of more than sixty local clubs. In early 1948, I was named Horticultural Chairman for the Federation, and have issued several bulletins to the member clubs on pertinent garden questions.

Because of continued demand from the Farm Bureaus, Christmas decoration and house plant demonstrations have been continued. The large number of requests last year made it necessary to conduct many of these meetings as leader training classes. Fifteen meetings were held during the fall of 1947 in seven counties with 91 communities represented. Many other lectures have also been presented on the radio, to Granges and other organizations, and at Farm and Home Week in Orono; horticultural classes at several agricultural fairs have been judged.

Considerable correspondence has been written and many calls made in answer to queries relative to insect, disease, and other horticultural problems, including landscaping and the selection of suitable plants for growing under Maine conditions. At the request of the Superintendent of Buildings plans have been prepared for the planting of flower beds on the grounds of the State House, and supervision of the plantings has been provided.

In all this work valued assistance has been given me by Albion Goodwin, and I wish here to acknowledge my appreciation to him.

Your helpful counsel and willing assistance in problems pertaining to this position is deeply appreciated. May I take this opportunity to tender you my sincere thanks?

Respectfully submitted,

EDWARD D. JOHNSON,
State Horticulturist.

To E. L. Newdick, Chief, Division of Plant Industry:

I herewith submit a brief report of the Bureau of Horticulture covering the period of July 1, 1946 to May 17, 1947.

As charged by law, the Bureau continued its inspection of nursery stock offered for sale in this State, whether grown within the State, or imported from outside of the state. Although the supply of this stock has not greatly increased, the quality has shown marked improvement over the past five years.

Red Stele has proven to be a very troublesome disease among strawberry plant growers. The Department has been maintaining

both a fall and spring inspection. Although holding up the shipment of strawberry plants for a short time, it has prevented the spread of this disease.

Our bee inspection work during the summer of 1946 showed a very marked decrease in the amount of disease found in comparison with our first year of inspection. For example, in Cumberland County in 1942, 9.5% of the colonies inspected were found to be diseased. In the same county in 1946 the percentage of disease had dropped to 1.1%. The total percentage of disease for the State was 3.5% in 1942; 2.4% in 1946.

I feel that if this work could be continued on a somewhat larger scale for the next two years, this percentage of disease could be reduced to less than 1.0% for the entire state.

The Apple Tree Pool, conducted by this Bureau, was the largest for several years. We purchased 9,767 apple trees, 500 trees of peach, plum, pear, and cherry, and 2,500 raspberry plants. Of the total number of apple trees purchased, 5,280 trees were McIntosh and 2,830 trees were Cortlands. The remaining number of trees was made up of purchases of 42 different varieties. We continued to cooperate actively with the fruit industry in developing new packages, marketing methods, and apple products to facilitate better disposition of the Maine apple crop.

The monthly release of the newsletter, "The Maine Leaf", has continued to meet with great favor and its circulation has steadily increased.

This is a very brief report of the more important activities of this Bureau. I feel that a complete report of the many other activities of the Bureau should be left to my successor at the time of the Biennial Report.

I wish to take this opportunity to thank you for your assistance and wise counsel in helping me to execute my duties for the past year.

Respectfully submitted,

STANLEY L. PAINTER,

State Horticulturist.

Insect Control

To E. L. Newdick, Chief, Division of Plant Industry:

During July and August, 1946, a survey was carried on to determine the amount of Gypsy Moth defoliation in the State. Eighty-one towns were surveyed and a total of 203,813 acres of woodland were found to be from 25 to 100 percent defoliated.

During the fall and winter, surveys were made in many cities, towns and camping areas around ponds and lakes over the entire infested area. City, town, and association officials were advised as to conditions found and advice given as to methods of control that should be carried on in cooperation with this Department.

During the spring of 1947, spraying operations were carried on in 24 towns. Two hundred and thirty-eight miles of roadsides and 132 acres of woodland were sprayed. Again, during July and August of 1947, a Gypsy moth defoliation survey was made. Seventy-one towns were surveyed with no defoliation above 25% showing.

During the fall and winter of 1947 and 1948, surveys were made in 120 towns and cities. Gypsy moth egg masses in sufficient numbers were found in a few towns to warrant the expenditure of some money for control work. City and town officials were advised and in most cases were willing to cooperate with this Department in carrying on a control program.

While making these surveys only one heavy Brown-tail moth infestation was found. This infestation covered an area of approximately 350 acres. This Department contacted the United States Department of Agriculture Bureau of Entomology at Greenfield, Massachusetts, and they were willing to cooperate with us in carrying on an experimental DDT spray program by airplane. On May 20 this experimental job was done and we feel the experiment was very successful. At the present time no Brown-tails can be found within the sprayed area. (Incidentally, this was the first time Brown-tail moth control was ever tried by airplane using DDT.)

During the spring of 1948, a general spray program was carried on, using both the mist blowers and hydraulic spray machines. Spraying operations were carried on in 18 towns. Two hundred and nine miles of roadside and 397 acres of woodland were sprayed. This includes the 350-acre Brown-tail moth plot.

Respectfully submitted,

N. R. TRAFTON,
Chief Inspector, Insect Control.

Organization of the Department

Division of Inspection

In this Biennial Report we are beginning a presentation of the functions of the five divisions which make up our Maine Department of Agriculture. The divisions are: Inspection, Animal Industry, Plant Industry, Markets and Administration. Herewith is an outline of the work of the Division of Inspection.

The Department's Division of Inspection, of which A. M. G. Soule of Augusta is chief, operates eight inspection units including Weights and Measures. (The Commissioner of Agriculture is by statute State Sealer of Weights and Measures.) The Inspection Division's operating arms are: Blueberry Inspection, with 20 seasonal inspectors, one-half of this staff in the field, one-half in processing plants; Sardine Inspection, with one Supervisor and 35 seasonal inspectors; Slaughter House Inspection, with two inspectors; Shellfish Inspection, two inspectors; Feeds, Fertilizers, Fungicides and Insecticides, two inspectors; Foods, Drugs and Bottling Plants, two inspectors; Potato Branding Law Enforcement, with one inspector. Analyses required in the daily work of the Division's sections are performed at the University of Maine Control Laboratory, on a cost (staff and equipment) basis.

Feeding Stuffs—The enforcement of the law regulating the sale of feeding stuffs and the inspection for that purpose is carried on throughout the year. The feeding stuffs inspector makes frequent calls on all the places in the state where feeds are sold, carefully looks over the stock on hand, and if he finds a brand, or brands, not properly registered, as shown by the list of registered feeds he has with him, such are reported and the dealer is cited to hearing. A copy of this notice is sent to the manufacturer. This is usually all that is necessary to effect registration. Other inspectors of the Division charged with other duties in the field, are continually on the lookout for unregistered brands, and report such offenses. Each year the feeding stuffs inspector collects feed samples from every company registered. These samples are indexed and sent to the University of Maine Control laboratory at Orono. Analysis reports are returned and the protein, fat and fiber content are compared with the guaranty as reported from the packaged samples, and also with the manufacturers' certificates on file in the office. If the analysis report is not in accord with the guaranteed analysis, either a letter of warning or hearing notice is sent to the offending dealer.

Annual publication of the results of analysis is required by law.

Fertilizer—Fertilizer inspection begins in the early spring months with the collection of samples and the reporting of unregistered brands. Usually two inspectors cover the territory. They obtain samples of fertilizers from storehouses, from agents, and at the farms in the hands of the users. They watch for unregistered fertilizers and limes, and when such are found, action is taken in the same manner as in the Feeding Stuff section. Samples are sent to the Experiment Station and analyzed. If the report is not in accord with the guaranty, letters of warning are written and if there are more flagrant violations, the manufacturers are cited to hearing, and settlement with injured users is suggested.

Insecticides and Fungicides—The general enforcement of the law regulating the quality and purity of fungicides and insecticides is carried on in a way very similar to the seed, feed, and fertilizer inspection. Inspectors cover the state calling on dealers and manufacturers, collecting samples of the principal insecticides and fungicides offered for sale in Maine. They are on the alert for insecticides offered for sale without registration, and when violations are found, the violators are cited to hearing. This work has been increased recently because of the introduction of DDT.

An important item of enforcement is the required publishing of all results of the analyses in annual publications. This is true of seeds, feeds, and fertilizers, fungicides and insecticides, and foods and drugs.

Enforcement of the Seed Law—In the early spring and for a time in the fall when seeds are offered for sale, one or more inspectors travel the state collecting samples of seed for analysis.

On an average, at least 125 cities and towns are visited, 325 dealers are called on, and sometimes as high as 300 samples of seed collected and examined. If there is a minor discrepancy between the guaranty and the findings of the analyst, a letter of warning is written to the seedsmen and a copy to the dealer. If a more flagrant variance is found, the dealer is cited to hearing and the seedsmen furnished with a copy of the hearing notice. Since passage of the U. S. Seed Law in 1938, Federal help has been great.

Food—In the enforcement of the law regulating the sale of food and in food inspection, work proceeds along lines of education, inspection and prosecution. All the inspectors of the Division, when not employed on especially assigned work, are employed in food inspection. They travel about the state and make general observations and inspections as to the general condition of food factories, canneries, bake shops, meat rooms, and refrigerators, all places in fact where food is stored for commercial purposes. They are concerned with ventilation, proper location of the toilets, the cleanliness of walls, floors, shelves, and counters.

Whenever a fire occurs in a place where food products, either in cans or bulk packages is stored, a food inspector is on hand to see that protection is afforded to the customer under the pure food law relating to salvaged goods.

In the inspection of restaurants, hotels, lunch rooms, and lunch carts, the inspector here notes general sanitary conditions, the light and ventilation, and observes the health and cleanliness of the employees. Inspectors observe the condition of the dishes and utensils used, and the condition of all refrigerators and coolers. In this work, considerable help is given by inspectors from the State Department of Health, who have occasion to call on restaurants and hotels in the enforcement of their law, providing for a license.

From time to time inspectors of the Division collect samples of

maple syrup, molasses, sausage, vinegar, clams, oysters, and ice cream. All samples collected are sent to the laboratory and analyzed, and if the results show that such products are not in accord with the standard established by statute or regulations, violators are cited to hearing.

From time to time legislation dealing with specific food products has been passed, adding to the statutory powers resting with food officials. Work described below, in reference to Blueberries, and to Sardines, is carried out under such law.

Blueberries—In Sections 196 and 197, Chapter 27 of the Revised Statutes of 1944, the opportunity is given to pack food in conformity with the requirements of the Maine Food law.

This statute is an example of desire on the part of reputable food packers to have certification and official endorsement of their product. This statute requires a registration fee and calls for the Department to provide full time inspection. Since 1922, the majority of the concerns packing blueberries have taken advantage of this optional arrangement.

Those making application for inspection have, as provided, deposited \$100 with the Department and made application to pack food under inspection and in each instance an inspector has been installed in each factory. With this arrangement, it has been possible to furnish complete food inspection, and if the operations are satisfactory, and the law and regulations fully complied with, the product is certified and the concern authorized to mark containers with a statement certifying that the food so prepared was packed, inspected and passed under the Maine Pure Food and Drug Law.

This arrangement has also been used by the corn packers in a limited way and by fish fillet packers.

As for blueberries, the factory inspector works in cooperation with field inspectors, and by test investigates the quality of the berries which come to the factory for packing. Samples are tested for infestation and if unsatisfactory are rejected for packing.

When the need is indicated, the inspector takes samples to test for possible poisonous residue resulting from spraying or dusting for insect or disease control.

Sardines—The Commissioner of Agriculture is ordered by statute to see that sardines are packed in compliance with State and Federal food laws.

An annual license must be obtained from the Department of

Agriculture, and an inspector is on duty at every factory where sardines are packed. When herring arrive, a careful examination of each lot is made. This consists of taking at least 4 samples of 100 fish each from various parts of the cargo and striking an average of quality from this sampling. If the inspector finds the herring of acceptable quality, they are taken into the factory. If sorting is necessary, the inspector notes this operation, and then follows the herring through the various processes of flaking, steaming, drying, and packing.

In order to determine whether the oil used meets the standards required by the sardine packing law, the inspector takes a sample of every lot of oil received at the factory and sends it to the laboratory for analysis. Analyses reports are returned directly to the inspector and a copy sent to the office.

In order to determine the quantity of oil that is used, as required by statute, the inspector is furnished with a gauge or measure, and at frequent intervals during packing operations measures the quantity of oil being put into the cans.

In general the inspector reports as follows: source of fish received; amount of fish received; results of the examination of fish for quality; amount of fish rejected, if any; test on the quantity of oil; number of fish packed in the cans of various lots; time of steaming, frying or packing; time of drying; time of cans in retorts; temperature of retorts or bath tanks; sanitary condition of toilets; number of cases packed; classes packed, whether $\frac{1}{4}$ oils, $\frac{3}{4}$ mustard, $\frac{1}{4}$ olive oil, and the general sanitary condition of the factory.

If, according to an inspector's report, the regulations and the law are not complied with, either the revocation or suspension of the license to pack is contemplated and notice is given. A hearing is held and if the violation is sufficiently flagrant, the license is suspended. Another possible penalty is the refusal of certification under the Food and Drug Law.

Shellfish—As a supplement to the general food law, special legislation governing the sale and distribution of shellfish: clams, quahogs and mussels only under Maine's law, places definite obligations on food control officials.

The Commissioner of Agriculture is required to determine the quality and purity of shellfish, both that sold within the state and shipped beyond the borders. A certificate is required from every person who ships shellfish to a point outside of Maine, and also from everyone who shucks and sells shellfish within the state. It is also

the obligation of the Commissioner of Agriculture to make sanitary surveys of all clam flats and quahog beds where such shellfish are taken, to inspect and examine the conditions under which shellfish are prepared for shipment, and to issue certificates to shippers.

In order to make these determinations, the inspectors of the Department of Agriculture make regular inspections and collect samples of clams, both in the shell and shucked. These samples are properly iced and carried directly to the laboratory by the inspector. There, they are examined by a bacteriologist. Determinations are made, the results being submitted to the U. S. Public Health Service. If the clams are found not in agreement with the standards of the U. S. Public Health Service, shipping is suspended until conditions have been remedied.

It is also the duty of the inspector to visit shucking houses and correct any unsanitary conditions which may exist.

Potato Branding Law—The enforcement of the Potato Branding Law is carried out by one full-time inspector and one inspector working part-time. These inspectors visit packing houses and shipping points where potatoes are loaded for shipment, and determine by careful inspection whether the package is correctly branded.

When violations are detected, shippers are sometimes allowed to unload and rebrand, so that the goods are in truth and in fact in accord with the label, or in some cases the branding is blotted out. If the violation is sufficiently flagrant, the violator is cited to a hearing, or is brought into court and asked to answer to the charge of misbranding.

The Apple Branding Law is similar in purport and in method of enforcement to the Potato Branding Law.

Slaughterhouses and Poultry Slaughtering Establishments—Two inspectors carry on the work of enforcing the slaughterhouse law, making as many visits and inspections as possible to the 279 establishments located in Maine.

Every establishment where animals and fowl are slaughtered for human consumption is licensed annually beginning August 1, and to that end applications for licenses are sent in July to all holding licenses for slaughterhouses and meat processing plants.

A license to operate a slaughterhouse is not issued unless the location has been approved by some health officer or municipal officer of the town where the proposed slaughterhouse is located. The two inspectors alternate in the territory inspected, and check the following various items: floors of hard impervious material;

drains properly sloped to insure proper drainage and floor pipes leading into cesspools; holding pens; the water supply; adequate refrigeration; proper disposal of offal and refuse, including waste bones and waste fat; proper care as to dressed carcasses hung for cooling; proper storage of hides and pelts; prohibition of hogs or other animals kept in close proximity to a slaughterhouse; prohibition of feeding raw offal; handling of animals which have died otherwise than by slaughtering; proper toilet facilities; the sanitary condition of wagons, trucks and cars and other conveyances used to transport meat and meat products.

Inspectors are always on the lookout for diseased animals which are being sold or offered for sale, and inspect, whenever possible, the carcasses of slaughtered animals, paying special attention to immature veal. The inspectors also check and report on the conduct of poultry and fowl slaughtering establishments, where the same provisions apply for the issuance of licenses, and the same general regulations obtain as to water supply, handling of the product, of refuse disposal, feeding of raw offal, toilet facilities, sanitation of clothing, and the general sanitary condition of wagons, trucks, cars, and other conveyances. All these conditions pertaining both to slaughterhouses and poultry slaughtering establishments are reported daily.

If violations are noted, letters of warning are written to the operators and if conditions are not remedied, the violators are prosecuted.

Bottling Plants—In the enforcement of the law regulating the manufacture and sale of soft drinks, syrups, and non-alcoholic beverages, one inspector is employed. With a list of all licenses both within and without the state, he makes frequent inspection visits to all who are bottling in Maine and calls on wholesalers and retailers who are distributing beverages prepared outside the state, thus checking on licenses and registrations. He also notes the following: sanitary conditions of the establishment; light and ventilation; sanitation of the syrup room; general condition of the bottles and bottling machine; labeling of the product; test determinations, whether the bottles, jars, jugs, and other containers are thoroughly clean and sterilized before re-use; by careful testing, making the determination as to whether or not a 3% caustic alkali at a temperature not lower than 110° Fahrenheit is made; after the sterilizing process, a rinsing of pure water of all bottles, jars, jugs, and other containers.

Violations are promptly reported by the inspector to the office,

and where required a notice is sent to the licensee that suspension or revocation is contemplated. Then after hearing, if the case warrants, the license is revoked or suspended. More flagrant violations may result in prosecution.

Drugs—A registered pharmacist is employed for drug inspection, making the rounds of the drug stores, examining the labels for misbranding and reporting violations. He notes the general condition of the stores, the cleanliness of the prescription counter, the number of registered clerks employed, and also gathers information concerning the marking of shelf and stock bottles. If soda fountains are operated in the drug store, a special report is made, requiring the sanitary cleanliness of the glasses, and other utensils used. The source of the syrup, and whether artificial coloring is used, is reported. The inspector reports violations and these are taken up in a letter of warning as to the general unsanitary condition, the improper marking of bottles or the absence of a card announcing the use of preservatives.

Aside from the general inspection, the drug inspector collects samples. These are sent to the laboratory and analyzed. For the most part, it is attempted to collect articles of the druggists' own manufacture, at the place of manufacture. If not possible, samples are purchased from wholesalers.

Weights and Measures—The Commissioner of Agriculture is designated State Sealer of Weights and Measures by statute, and is authorized to appoint a deputy sealer, who inspects the work of some 255 sealers appointed by the municipal officials of the various towns. The deputy sealer of weights and measures has supervision over the custody of the standard weights and measures, which are checked and kept in agreement with the U. S. Bureau of Standards. He also has supervision over a set of working standards which are copies of the original standards.

The State Sealer submits the State standards at least once in ten years to the National Bureau of Standards for certification, and at least once in five years he causes the standards of the several cities and towns to be compared and corrected to conform to the State standards. In this work, the deputy sealer visits the local sealers and assists them in their work, which consists of re-weighing packed goods, testing heavy duty scales, oil pumps, bottles, gasoline pumps, and vehicle tanks. One and two inspectors are sometimes employed in checking gasoline pumps. In each of several seasons, all the pumps on main roads of travel have been tested.

