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The Commonwealth of Massachusetts

ANNUAL REPORT

OF THE

DEPARTMENT OF AGRICULTURE

FOR THE

YEAR ENDING NOVEMBER 30, 1923



DEPARTMENT OF AGRICULTURE, 1923

Commissioner of Agriculture

DR. ARTHUR W. GILBERT OF BELMONT

Advisory Board appointed by the Governor and Council

EVAN F. RICHARDSON OF MILLIS, Term expires Nov. 30, 1924.
LESLIE R. SMITH OF HADLEY, Term expires Nov. 30, 1924.
PETER I. ADAMS OF HOUSATONIC, Term expires Nov. 30, 1925.
HERBERT N. SHEPARD OF WARREN, Term expires Nov. 30, 1925.
JOHN BURSLEY OF BARNSTABLE, Term expires Nov. 30, 1926.
STUART L. LITTLE OF NEWBURY, Term expires Nov. 30, 1926.

Organization of the Department

DIVISION OF DAIRYING AND ANIMAL HUSBANDRY — OSMAN M. CAMBURN OF ARLINGTON, *Director*
DIVISION OF INFORMATION — DR. CHARLES D. WOODS OF NEWTON, *Director*
DIVISION OF MARKETS — WILLARD A. MUNSON OF WALPOLE, *Director*
DIVISION OF ORNITHOLOGY — EDWARD HOWE FORBUSH OF WESTBOROUGH, *Director*
DIVISION OF PLANT PEST CONTROL — R. HAROLD ALLEN OF TAUNTON, *Director*
DIVISION OF RECLAMATION, SOIL SURVEY AND FARMS — LESLIE R. SMITH OF HADLEY, *Director*

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The Commonwealth of Massachusetts

REPORT OF THE COMMISSIONER

RECOMMENDATIONS FOR LEGISLATION.

1. *Apple Grading.*—The law on apple grading and packing, which appears as sections 100 to 114 of Chapter 94 of the General Laws, has been in force for eight years. Experience indicates that some amendments to the law are desirable. Complaints have been made against the requirement of section 102 that other marks than those indicating the grade shall not be more conspicuous on the package than the marks required by law, because this requirement limits the use of colored brands, labels and private marks. It seems sufficient that the marks required by law shall be according to the law and the regulations made by this department pursuant to the law, and the repeal of the requirement in question is therefore recommended.

As the law now reads, it does not state specifically at what time and by whom closed packages shall be marked. An amendment to section 104 is recommended to make such marking obligatory upon the packer or repacker at the time of packing or repacking.

2. *Inspection of Dairy Products.*—The division of Dairying and Animal Husbandry finds its authority under section 14 of chapter 128 of the General Laws inadequate for the enforcement of laws relating to substitutes for butter. It is recommended that this section be strengthened so as to make the work of the department in this field more effective, and that provision be made for the issuance of search warrants for oleomargarine in imitation of yellow butter.

3. *Marking of Milk Cans and Containers.*—By sections 2 and 3 of chapter 45, acts of 1921, the use of cans or containers not marked with their capacity and properly sealed, in the purchase or sale of milk or cream at wholesale, is forbidden from January 1, 1924. A considerable number of unmarked cans, purchased before this law went into effect, are still in the possession of milk dealers and contractors, and will not be all beyond usefulness at the time when their further use is forbidden. Most of these cans are not used as measures, but simply as containers for milk purchased by weight. New cans supplied for the wholesale milk business are all marked and sealed as the law requires. In order to avoid imposing a hardship upon such dealers and contractors as have not been able to dispose of their former style cans, it is recommended that the time limit on their use in connection with purchases or sales of milk and cream by weight be extended until January 1, 1927.

4. *Report on the Birds of Massachusetts.*—In order that the illustrations for this report, authorized by chapter 5, Resolves of 1921, may be completed, and the first volume published, further authority is necessary. It is also desirable to provide for the distribution of the report. A resolve to meet these requirements is accordingly recommended.

5. *Amendments to the Reclamation Law.*—No extensive changes in this law, passed at the last session, appear to be desirable. The law now requires a majority of the proprietors of a tract subject to the law to sign the petition to the Reclamation Board, and to vote at the organization meeting. The requirement that a majority shall petition seems unnecessary, and it is proposed to change this provision so that any two or more proprietors may do this. The requirement that a majority shall vote on the question of organization is

retained, but on account of the large number of non-resident members of districts, it is recommended that provisions be made for proxy voting at the first and subsequent district meetings.

CHANGES IN THE STAFF.

In June, 1923, Mr. P. M. Harwood, who has been connected with the State Department of Agriculture in various capacities for a great many years, reached the retirement age. Mr. Harwood has been a faithful servant of the Commonwealth and, through his valuable service, has in many ways encouraged its agriculture. Much of the efficient regulatory work, particularly with the oleo-margarine law, is due to him. Mr. Harwood has kept the present Department in close touch with former members of the State Board of Agriculture and through him there has been a close working relationship between the new régime and the old.

Mr. Francis W. Small, a former inspector of the Division of Dairying and Animal Husbandry, has been promoted to fill the vacancy caused by Mr. Harwood's retirement.

COOPERATION AMONG AGRICULTURAL AGENCIES.

During the past year there has continued the close cooperation among agricultural agencies which has been so noticeable for a few years past. There has also been close cooperation with business interests of Massachusetts. The Boston Chamber of Commerce, the Massachusetts Chamber of Commerce, the Associated Industries, and other organizations have been of invaluable assistance in the solution of the agricultural problems of this State. During a recent apple selling campaign these organizations, through their various members and contacts, played a most important part in this work. This Department offered prizes for the best window display of home-grown apples in the various cities of the Commonwealth. This was supplemented in some cases by prizes offered by Chambers of Commerce and other local bodies.

DAYLIGHT SAVING.

In spite of the noticeable upward trend of Massachusetts farming the daylight saving law has been the outstanding handicap which farmers have had to face. I strongly recommend that this matter be placed before the voters of the Commonwealth at the earliest possible moment to get their opinion on the matter.

COOPERATION WITH MEMBERS OF THE LEGISLATURE.

I have felt for some time that members of the Legislature should be better informed of the work of the State Departments. I have invited members of the Legislative Committee on Agriculture and others to visit this Department to review its work and its facilities. I wish that it might be possible to invite the entire Legislature to do this. If an exhibit could be placed in one of the rooms of the State House within easy access of members of the Legislature this would help in considerable measure for the latter to visualize the work of the departments. The more the citizens of the Commonwealth can learn of the work and plans of these departments the better work will be done and the more extensive the results. This is particularly true of departments whose duty it is, among other things, to carry out encouragement work.

FOOD PROBLEM OF MASSACHUSETTS.

I strongly urge the formation of a food commission to study the present food situation in Massachusetts and also the work of the various state agencies which have been gathering material for some time on this matter and which have at their command a considerable amount of information on this most important question. If the work of these agencies, together with any necessary new information, could be correlated and brought together it would give the citizens of the Commonwealth an inventory and view of the present food situa-

tion which could not be gathered in any other way, and from this commission would naturally come a program which would help to correlate the work of various agencies toward a common end.

NEW ENGLAND AGRICULTURAL CONFERENCE.

The New England Agricultural Conference called by the Governors of the six New England States was a great success. The members of the conference formulated a ten year program for New England agriculture. They also made a survey of the present situation. Since the conference the Executive Committee has been preparing a two hundred and fifty to three hundred page book on the present food situation in New England. This book will come from the press shortly. The Executive Committee has also held conferences in an endeavor to correlate the work of the six New England States into a common plan. For example, each of the six experiment stations conducts research and issues bulletins periodically. This research should be planned to prevent duplication and to fill gaps, and the bulletins of one state should be readily accessible to the farmers, or others, of the other five states. Moreover, pieces of work, like investigations of tobacco in the Connecticut Valley in which two states are equally concerned, should by agreement be performed by one state with the full cooperation of the other, instead of duplicating the same work by the two states concerned. The New England Agricultural Conference is working toward the formation of a permanent agricultural organization which shall act as a sort of clearing house to keep the agricultural work of the six states in harmony. It is not intended that this should be an executive body, as there are ample agencies in each state to carry out the suggestions of the conference.

EUROPEAN CORN BORER.

The European corn borer is less serious in Massachusetts than it was a year ago. This is probably due to conditions of the past winter and other similar factors. The new law passed by the Legislature in 1923 provided that all corn fields in the quarantine area shall be plowed before December 1, 1923. There has been a ready support to the carrying out of this new statute. We believe that it will be particularly effective in the towns where the corn borer has come most recently and in which so far its main host is corn. The plowing of fields turns the stubble underneath the surface and kills the borers. This should be very effective in keeping them in control. So effective has the work been this year that no new towns, except the Islands of Martha's Vineyard and Nantucket, have been added to the quarantine area. It is probably too much to expect that the European corn borer will be entirely eradicated but it is hoped that it will be kept in check through the cooperation of our citizens. The commercial agencies and the press should be commended especially for their active interest and support of this campaign.

CERTIFICATION OF POULTRY.

The poultry industry of Massachusetts is increasing rapidly and has a great future. The principal drawback to this industry is the poultry diseases. Scientific research has demonstrated that the worst of these diseases, namely white diarrhea in chicks, can be controlled by hatching eggs from hens which are not carriers of these diseases. It is possible to determine these by means of relatively simple blood tests. The poultry raisers have begun a commendable campaign looking toward the certification of hatching plants where eggs have come from flocks which are free of disease. I recommend that this department be given additional facilities to certify officially such flocks. The certification by voluntary state agencies is the only effective way of giving the proper confidence to a certificate of this sort.

If the certification of hatcheries can be made effective we may be able to look forward to disease free flocks over the entire state and eventually it may become desirable and necessary to require all fowls or chicks brought into the state to be tested and passed upon the same as is done in the testing of cattle for tuberculosis at the present time.

ENGLISH FARMERS TO COME TO NEW ENGLAND.

A very commendable campaign has been started to induce English farmers who are now moving away from England in large numbers to come to New England to settle. It is hoped that the business interests and others of this state will be willing to assist in financing a project which has such great possibilities as this. If this can be done one or more persons will go to England to describe our farming facilities and call to the attention of prospective buyers the advantages of purchasing Massachusetts farms. It is hoped that these English farmers with their families, which in many cases are large, will come here to settle among us. Their mode of farming and environment is so similar to ours that they should find better homes here than they would in the frontier regions of the British Empire where many of them are now going. This Department has agreed to have its representative visit the various farms which are offered for sale to check up the description and advise concerning the price which is asked for such farms. This will give to the plan a degree of confidence which is necessary to induce buyers from a distance.

Respectfully submitted,

ARTHUR W. GILBERT, *Commissioner.*

REPORT OF THE DIVISION OF DAIRYING AND ANIMAL HUSBANDRY.

INSPECTION WORK.

The dairy inspectors of the Division have made ten thousand seven hundred and eighteen inspections during the year. These were inspections of restaurants, hotels, retail stores, boarding houses and vehicles. One hundred and seventy-four samples were taken, most of them purchased. There were thirteen court cases, resulting in nine convictions. Ten of these were violations of the oleomargarine law, one a violation of the milk law and two were cases wherein the defendant was charged with interfering with an officer in the performance of his duty. As in the past, our policy during the year has been to prosecute only major cases where manifest violation of the law has been either willful or persistent or both. In a number of minor cases of technical violations, whether through ignorance or carelessness, corrections have been obtained by helpful inspection and advice. In most instances such violators have been eager to comply with the statutes when these violations have been called to their attention. This policy has obtained results rather promptly and without entering unnecessary cases in court, as well as saving persons from unnecessary criminal records.

Summary of Inspections.

Total number of inspections, 10,718.
 Number of inspections where no samples were taken, 10,570.
 Number of samples taken of butter, oleomargarine and milk, 174.
 Number of samples taken during inspections, 148.

The charges in the several cases prosecuted in court during the year were as follows:

Selling oleomargarine in an unmarked wrapper, 1.
 Selling oleomargarine from an unmarked vehicle, 1.
 Selling oleomargarine in imitation of yellow butter, 8.
 Selling adulterated milk (skimmed), 1.
 Interfering with an officer in the performance of his duty, 2.

Summary of Court Cases During the Twelve Months Ending November 30, 1923.

<i>City or Town</i>	<i>Month</i>	<i>Number</i>	<i>Law Violated</i>	<i>Convictions</i>
New Bedford	January	3	Oleomargarine	3
New Bedford	March	1	Oleomargarine	1
New Bedford	April	2	Oleomargarine	0
Boston	July	4	Oleomargarine ¹	4
Worcester	July	2	Oleomargarine	0
Quincy	September	1	Milk	1
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DAIRYING.

The dairy industry of Massachusetts is on a fairly stable basis. The price received for milk has been sufficiently satisfactory to keep the dairy farmer milking cows. The volume of milk offered to distributors has been considerably in excess of previous years. The good retail demand for milk has absorbed a part but not all of the extra offerings. With short dry pastures and advancing feed prices, production dropped rapidly in the fall. The demand for milk keeps up. All of which justifies a higher sales price for milk. Although prices have been inviting, some farmers have been compelled to decrease the size of their herds, due to the high price and scarcity of labor. The indications are that only the less profitable cows have been sold. Thus the volume of production has kept up with fewer but more efficient cows. With a keen demand and a not too plentiful supply of milk, prices are likely to hold their own, to the advantage of the farmer, provided feed prices do not advance too rapidly.

With the increased demand for milk on the part of consumers, also appears an interest in high quality milk. Each year sees an increase in amounts of special and certified milks produced. In a few communities milk producers are coming to see the importance of meeting competition of distant milk with freshly produced milk of the highest quality.

BOVINE TUBERCULOSIS.

The farmers of Massachusetts have responded promptly to the opportunity to have their herds brought under Federal and State supervision in the eradication of bovine tuberculosis.

The work is moving smoothly and rapidly. There are now 874 herds with 19,163 cattle under supervision; of these there are 102 herds with 3,507 cattle fully accredited, and 241 herds with 3,988 cattle are once tested, free of reactors. There are also 81 herds with 1,167 cattle waiting to have the test applied. These figures show a marked advance in the short time since the cooperative agreement was entered into.

DEMONSTRATION SHEEP FARMS.

The six Demonstration Sheep Farms during 1923 have served the sheep growers in a more complete way than at any time. Nine hundred and forty-three visitors have called at the farms and the farm managers have made 466 calls at other sheep farms. Fifteen demonstrations have been given at the farms and ten on other farms. These have been on the shearing of sheep, castrating and docking, as well as the blue-stone treatment for parasites. Pure-bred rams have been placed at the head of grade flocks. Assistance has been given at the request of certain growers in selling grade flocks and replacing with pure-bred sheep. Another service rendered has been examination and study of a flock, diagnosis of parasitic disease and suggestions offered in management of the flock, which has resulted in saving a great many sheep.

The farms have distributed a limited amount of medicated salt to determine

¹ In cooperation with James O. Jordan, Milk Inspector of Boston.

the effectiveness in keeping sheep free of parasites and the flock as a whole in thrifty condition. The managers and cooperating flock masters report very beneficial results from this product. Several flocks which were badly run down have been brought back into good condition through the use of this medicated salt.

The demonstration sheep farm managers have also encouraged the raising of more early spring lambs. The lambs have been shipped to several markets rather than concentrating all shipments to one market, thus supplying a wider market demand, lengthening the marketing period to several weeks and maintaining a satisfactory price.

This year the growers again pooled small lots of grease wool at several of the demonstration sheep farms. The total of 21,500 pounds of wool pooled sold at prices ranging from 48½ to 52 cents as compared with bids of 40 and 42 cents by country buyers. Thus the growers, through the service and information from the demonstration sheep farms, received 10 cents per pound of grease wool above the local quotations.

Again at the request of many growers, an all-virgin-wool blanket plan was undertaken. The demonstration farms served as concentrating points for the grease wool which the growers wished to have made into blankets. Although it was late in the year, a total of 8,907 pounds of grease wool was manufactured into 891 blankets, which were offered to purchasers at \$9.00 per single blanket. The manufacturing cost was \$2.90 per blanket. Thus the grower received net 61 cents per pound of grease wool, as compared with a maximum price of 42 cents offered by country buyers.

EXHIBITS AND MEETINGS.

Fewer special exhibits were made this year than last year. Special exhibits on the use of pure-bred sires and the extent of bovine tuberculosis eradication work were put on at the Union Agricultural Meeting and at the Ayrshire Dairy Cattle Show, both held in Boston. At the Boston Health Show this Division assisted in putting on an exhibit showing the Relation of Animal Health to Public Health. The exhibit at Hardwick showed the extent to which Massachusetts ships pure-bred dairy animals to other states.

During the year forty meetings were attended, at twenty-five of which members of the Division gave agricultural addresses. At the Brockton Fair the Division served with the Dairy Show Committee and assisted with the livestock exhibits.

POULTRY INDUSTRY.

The poultry industry of Massachusetts has never been in a more sound condition than at the present time. Although feed values gradually rose throughout the past year, yet prices of eggs and poultry remained at a level high enough to make poultry keeping fairly profitable.

It will be remembered that the production of poultry and eggs in Massachusetts fell off very rapidly from 1916 to 1919, due to war-time conditions, but the last four years have seen a steady increase and, although no definite figures are at hand for confirmation, there are many close observers who believe that the loss sustained during the former period has been fully restored. There are many contributing causes to this phenomenal recovery. The development and perfection of mammoth incubators and brooders gave the work a much greater momentum than was possible for any previous period in the history of our country. The educational work done in the state the past ten years by many different agencies has been the means of establishing better and more efficient practices. Again, high wages resulting from the splendid industrial activity have enabled consumers to pay fairly reasonable prices for poultry and eggs.

A further contributing cause is the rapid strides that have been recently made in poultry farm organization and management. The culling practice has eliminated from thousands of flocks the poor and non-producers, which has resulted not only in higher average yields but in the selection of better breeding

stock. More attention has been given during the past year to breeding for high fecundity than ever before. A number of very fine flocks have been established in various parts of the state which serve as sources of stock of superior quality. The adoption of sanitary methods, particularly for growing stock, has done wonders in the production of clean, healthy stock. In years past, thousands of poultrymen felt that very little land was needed to carry on a good-sized poultry project. Chicks were raised in limited or congested quarters and, in some instances, with the old birds. Today it is the common practice to carry on a three or four year rotation for raising poultry. Perhaps no other practice has done more than this to increase poultry profits. Roadside marketing, a direct result of the automobile and our splendid system of highways, has contributed much to the profitableness and stability of poultry farming in this state.

Ten or twelve years ago the soft roaster business that centered about Rockland, Massachusetts, was in a flourishing condition, but war prices for feed almost completely wiped out the business. Very little has been done as yet to reestablish it, although a few producers have made a start in this direction. The duck business is in good hands and is flourishing. The fact that these producers have their own warehouse and storage enables them to control production and prices. The production of geese and squabs has not received the attention it should have since the war. These are two industries that could be very profitably increased. The success that a number of turkey raisers in this state have had the past year deserves mention. There have been produced a number of flocks varying from one hundred to three hundred or more with very few losses. It appears that this most valuable industry, almost obliterated by the ravages of blackhead, will be revived in the very near future.

Perhaps it is not wise to publish or broadcast anything in the nature of an alarm, but Massachusetts is doing a great deal along the line of elimination of poultry diseases, particularly white diarrhea, and it may be necessary sooner or later to raise a barrier against the importation into the state of hatching eggs, baby chicks, and adult birds for breeders, unless they have been inspected.

REPORT OF THE DIVISION OF INFORMATION.

The Division of Information collects and compiles agricultural information and statistics; prepares, edits and distributes the publications of the Department; has charge of the Department library; furnishes publicity material to the press; answers inquiries on agricultural matters; acts as an advertising and sale agency of farms; maintains an employment bureau of farm labor; cooperates in an advisory capacity with the State departments having charge of institutions which maintain farms; and maintains close relations with State organizations that have to do with agricultural education and with the departments of the Commonwealth which have agricultural activities.

AGRICULTURAL STATISTICS.

The collection of agricultural statistics has been chiefly concerning crop production and live stock in cooperation with the New England Reporting Service of the United States Department of Agriculture and with the Division of Dairying and Animal Husbandry of this Department. The crop statistics for the years 1921 and 1922 have been published in Publication 124 of this Department. The usual Dairy statistics have been collected but were not published for reasons stated below.

PUBLICATIONS.

The law makes it plain that the Commissioner of Agriculture is responsible for the performance of certain definitely assigned duties. Among these are the "general distribution of such publications as he considers best adapted to promote the interests of agriculture." Since its establishment and up to 18

months ago the Department, following in the steps of its predecessor, the Massachusetts Board of Agriculture, issued publications covering the whole field of agriculture. Early in 1922 as explained in the report of a year ago¹ it was agreed between the Massachusetts Department of Agriculture and the Massachusetts Agricultural College that the Department should limit its publications to such subjects as are primarily promotional of agricultural interests and opportunities and that publications which are primarily instructional shall be issued by the College.

With the present year the new Commission on Administration and Finance began to function. Manuscripts and outlines of proposed publications were submitted to them, but they held that their judgments as to the needs of agriculture were paramount to that of the Commissioner and most of the publications presented to them and all of the plans for publications were refused. The list below shows the publications authorized during the year: Nos. 120 and 121 were approved before the Commission assumed its duties. Nos. 123, 125 and 126 are required by law.

With the agricultural depression in the middle west some of the people who originated in Massachusetts or whose ancestors did, are increasingly turning their thought toward Massachusetts as a possible farm home. Large numbers of inquiries from these people, relative to agricultural conditions and possibilities are received. As there is no adequate literature such inquiries can be only very imperfectly answered by lengthy, time consuming and unsatisfactory letters. There is a pressing need for publications on the general problems of production, statistics, marketing, soils, climate and the location of the different types of agriculture, crops, and animal husbandry adapted to different sections of the State. It is through no fault of this Division that these books have not been ready for the applicants. Outlines and in some cases manuscripts of such proposed publications have been submitted, but the Commission on Administration and Finance refused their publication.

List of Publications in 1923.

Department Publication No.

- 120 Rules and regulations governing the allotment of State Prize Money through Agricultural Societies and Poultry Organizations. 4 pages.
 121 Everyday Essentials of Beekeeping (Reprint of Bulletin 14). 32 pages. 4 pages of plates.
 122 Massachusetts Farms for Sale 1923. 72 pages.
 123 Report of the Department (Agriculture of Massachusetts). 96 pages.
 124 Crop and Live Stock Statistics for 1921 and 1922. 12 pages.
 125 Report of the Commissioner for 1922. Reprint from No. 123. 10 pages.
 126 Report of the Division of Ornithology, 1922. Reprint from No. 123. 24 pages.

THE LIBRARY.

As outlined in the Report of this Division for 1922 the library of this department has been consolidated with the State Library. Only a few books of immediate reference are shelved in this Department.

It was estimated that when duplicates had been eliminated and deficiencies filled as far as possible, the total collection would approximate four or five thousand volumes and pamphlets. Completed, the record shows about 8,112 titles and 11,834 volumes and pamphlets.

Books and pamphlets on agriculture and allied subjects in the Massachusetts State Library collection are now re-catalogued.

They represent the following publications of interest to the Massachusetts Department of Agriculture: —

¹ (Agriculture of Massachusetts 1922 — pages 22 and 23)

U. S. Department of Agriculture publications
 State Department of Agriculture. Reports
 State Experiment Station. Reports and bulletins
 State Agricultural Societies. Proceedings or collections
 Massachusetts County Agricultural Societies. Proceedings
 State Horticultural Societies. Proceedings

and the following subjects:—

The general collection of books and pamphlets on agriculture, and history of agriculture.

Horticulture	Birds
Grains	Bees
Fruits	Insect pests
Farms and farming	Animal pests
Gardens and gardening	Fertilizers
Markets and marketing	Agricultural chemistry
Dairying	Rural sociology
Domestic Animals	

It is hoped to add later to this re-catalogued group the subjects of Agricultural education, and Conservation.

Duplicate subject cards of the above are filed in the Department library so that one may at a glance tell what is available on any given subject.

DISTRIBUTION OF AGRICULTURAL INFORMATION.

The usual matter relative to Department activities has been furnished to the press. The answers to inquiries on agricultural matters from correspondents, while time consuming, are apparently helpful and appreciated. From a supply of Extension Service Publications furnished by the Massachusetts Agricultural College and of Farmers' Bulletins of the United States Department of Agriculture supplied to us through the courtesy of the United States Senators and Members of Congress from Massachusetts, we are able to furnish correspondents with both College and Federal publications on animal industry, farm home, farm labor, field and garden crops, orchard management, poultry and allied subjects.

LISTING AND ADVERTISING MASSACHUSETTS FARMS FOR SALE.

The third annual Bulletin of "Massachusetts Farms For Sale" issued April 1, 1923 contained descriptions of 159 farms.

In October, twenty of these farms were reported as sold, fifty-seven others were still on the market while eight had been withdrawn. From the remaining seventy-four no report was received.

During the summer months an increasing number of inquiries were received regarding small tracts of land near a large city for the purpose of raising poultry. The majority of these inquiries were for an acreage of 15-25 acres ranging from \$2,000 to \$5,000. These inquiries were largely from city people in the State who wished to own a small piece of land and enjoy the benefits for themselves and families of an independent life and business. The difficulty involved is the high value of land near city markets.

During the past summer there was also much interest shown by prospective purchasers of Massachusetts lands in the proper sites for fruit growing. Practically the entire interest of those persons who sought farms was centered on specialization in poultry or fruit with a side line to tide over the inactive seasons.

Owing to the large scale farming of the middle west with the present period of over-production, the drop in prices for wheat, with the continued high freight rates and distant markets, the depression among the farmers of that section continues.

It is highly desirable that skilled farmers should be working our idle lands and that they should have the advantages of our markets, transportation sys-

ten, and intensive farming methods, brought to their attention. Taking advantage of this period of depression and the consequent unrest among western farmers, we have advertised our lands in the papers of the middle-west with the result that encouraging inquiries are pouring in relative to conditions here. A movement of even a small per cent of such farmers would be of lasting benefit to agriculture in Massachusetts.

MASSACHUSETTS STATE INSTITUTION FARMS.

The cooperative work with State and to some extent County institution farms begun in 1922 has been continued. The relations with the farms connected with the State Department of Correction, Public Health and Public Welfare are very close. Their annual farm reports have been analyzed in a manner designed to bring out the management with the view to improvement. The farms have been frequently visited. The institution farm herd book for the entry of all dairy animals in the herds in the Departments of Correction, Public Health and Public Welfare is completed to date. Each animal has had a number assigned, an ear tag with this number has been inserted, and daily milk records are kept. As fast as animals are added to the herds by birth or purchase they are added to the herd book.

To make these records more complete and for the development of large and high producing animals and the assurance of building up clean and profitable herds, we again urge the recommendations made late in the last session of the General Court for an appropriation for this Department enabling us to add to the cattle club record additional functions combining the best features of cow testing associations with the so-called advanced registry features of the cattle clubs.

This would mean among other things a monthly visit of two days to each institution for the observation of the herd management, the monthly reporting and handling of these records at the State House and an oversight of the efficiency of the dairy management at each of the institutions such as is not now possible. This is information which at present no herdsman, superintendent or commissioner has and which is essential if good breeding and herd development is to be attained.

REPORT OF THE DIVISION OF MARKETS.

The demand made upon the Division of Markets continues to be in excess of its facilities to meet them. It is urgently in need of a specialist in standardization in order that standard grades and standard packages for agricultural products may be studied and proposed to the growers of the State. Upon standard grades depends the elimination of a great many of the things that are now contributing to unnecessary and additional costs of our farm produce to the consumer and reduces the returns to the grower.

The necessity of continuous investigations of the cost and practices of distributing farm products through the markets from the time they leave the farm is continually emphasized by the inquiries and criticisms of our system. In order to answer these inquiries and be in a position to present data upon which constructive changes may be based, a permanent specialist in costs and market practices should be added to our staff.

A report on the details of the Division's activities follows in a very brief statement.

WHOLESALE MARKET NEWS.

The longest leased wire in the world is helping the American Farmer strongly to maintain his title as "the best informed farmer on earth." Besides special reports sent out from Washington on this wire, market news reporters, as trained experts, daily gather data on market conditions of farm products in the large market centers.

The newspapers, commercial clubs, farm organizations, and many other in-

stitutions of twenty states are eager to secure this service to give out to the farmer and middleman.

A new development during the year has been the Grains, Feeds, Hay and Straw report supplied through the U. S. Department of Agriculture. The prices contained in this report have been distributed to farmers who have requested this information.

The market news service of the Division has been materially strengthened by the establishment of an all year round service in Worcester and Springfield. The Boston Farmers' Produce Market Report has been published daily except Saturday as in former years, and reports from growers and market men indicate that valuable service is being rendered. The change from a six months basis was brought about by those benefited who saw the disadvantages of a temporary service and recognized the urgent need for daily market reports. The service in these two cities is made available through the cooperation of the Hampden County Improvement League of Springfield, and the Worcester County Extension Service at Worcester. These two agencies are furnishing office room and assistance for the reporters of the Division.

Producers are realizing that a more complete understanding and knowledge of the factors which operate to determine the selling price of their goods is necessary to a profitable return for their labor. The market reports issued by the Department give accurate information to producers and all others interested, on market price, the supply, demand and movement of agricultural products.

Market reports are published and sent out from the Boston office, 136 State House, Boston — Hay. 4600; the Worcester Office, Worcester County Extension Service, 11 Foster St., Worcester — Park 4328; and the Springfield Office, Hampden County Imp. League, 244 Main St., Springfield — Walnut 1146, according to the following daily schedule of reports.

Monday, 11 A.M.¹ Boston Produce Market Report issued. Worcester Produce Market Report issued. Springfield Produce Market Report issued. 12 M. (After the time signal) Westinghouse Broadcast (WBZ) East Springfield of Springfield Produce Market Report. 12.45 P.M. Amrad Broadcast (WGI) Medford Hillside of Boston Produce Market Report.

Tuesday, 11 A.M. Boston Produce Market Report issued. Worcester Produce Market Report issued. Springfield Produce Market Report issued. 12 M. Westinghouse Broadcast (WBZ) East Springfield of Springfield Produce Market Report. 12.45 P.M. Amrad Broadcast (WGI) Medford Hillside of Boston Produce Market Report. 3 P.M. Boston Retail Market Report issued. Worcester Retail Market Report issued.

Wednesday, 11 A.M. Boston Produce Market Report issued. Worcester Produce Market Report issued. Springfield Produce Market Report issued. 12 M. Westinghouse Broadcast (WBZ) East Springfield of Springfield Produce Market Report. 12.45 P.M. Amrad Broadcast. (WGI) Medford Hillside of Boston Produce Market Report. 3 P.M. Springfield Retail Market Report issued.

Thursday, 11 A.M.² Boston Produce Market Report issued. Worcester Produce Market Report issued. Springfield Produce Market Report issued. 12 M. Westinghouse Broadcast (WBZ) East Springfield of Springfield Produce Market Report. 12.45 P.M. Amrad Broadcast (WGI) Medford Hillside of Boston Produce Market Report.

Friday, 11 A.M. Boston Produce Market Report issued. Worcester Produce Market Report issued. Springfield Produce Market Report issued. 12 M.

¹ Note: The Worcester and Springfield offices publish reprint of Hay, Grain, Feed and Straw Report issued Saturday previous by Boston office.

² Note: Report on weekly market conditions on Brighton Live Stock Market Report published with these reports.

Westinghouse Broadcast (WBZ) East Springfield of Springfield Produce Market Report. 12.45 P.M. Amrad Broadcast (WGI) Medford Hillside of Boston Produce Market Report. 3 P.M. Amrad Broadcast (WGI) Medford Hillside of Boston Retail Market Report.

Saturday, 11 A.M. Weekly summary of Springfield Produce Market issued. Weekly summary of Worcester Produce Market issued. Worcester Retail Market Report issued. Springfield Retail Market Report issued. 11.30 A.M. Grain, Feed, Hay and Straw report issued (Boston).

All produce market reports are mimeographed and sent to subscribers who pay a small fee covering the cost of mailing; the Boston Retail Market Report is also mimeographed and mailed in a similar manner. The Worcester and Springfield Retail Market Reports are disseminated by means of the daily newspapers.

Afternoon editions of the Worcester Gazette and Post carry the Worcester Produce Market daily, the retail report on Wednesday and Friday, and the weekly summary of the produce market report on Saturday.

The Springfield Union, Springfield Republican, and Daily News carry the Springfield Produce Market daily, the retail report on Wednesday and Saturday, and the weekly summary of the produce market on Saturday.

The Boston Farmers Produce Market Report is carried on the afternoon wire of the Associated Press and published in the New Bedford Morning Mercury, the Lowell Courier-Citizen, and the Manchester Union.

MARKET NEWS SERVICE FOR HOUSEWIVES.

To the consumer, reducing the cost of food very often means stretching a chicken to furnish the meat course for three meals instead of two, or trying to serve five people a small cauliflower, just right for three, bought out of season at an exorbitant price. Thrift in the buying of farm products does not mean to buy less food, but to buy in season when produce is plentiful and reasonable in price.

Watch the market. When there is a glut of a certain product on the market, then indeed you will find a real bargain. Fifty recipes for using the remains of a roast will not help the consumer who does not know when, where, and how to buy a roast in the beginning.

The great grandmothers of New England practised thrift in utilizing what was grown on the farm, but today, it's all in the buying. The frugality of our ancestors must be reached, not by following one's tastes, strawberries and peas in January, and asparagus in March, but by shopping according to one's pocketbook and buying produce in the height of the season, particularly perishable fruits and vegetables. There is a certain time of the year when these perishables are usually plentiful (unless it is an off season), and low in price. The period of low prices, of course, varies somewhat from season to season, but price trends over a ten-year period of certain commodities indicate, for example, that cucumbers reach their lowest price levels in August, lettuce in June and July, and outdoor tomatoes the first part of September, potatoes and apples, October and November, butter the latter part of June and first of July, and eggs at Eastertime.

The retail price report, published weekly by the Division, keeps thousands of housewives in close touch with the market. The information is mailed to 750 housewives, printed in newspapers, and broadcasted over the radiophone from Medford Hillside, every Friday afternoon at 3 P.M.

Special news articles have informed Worcester and Springfield consumers of new fruits and vegetables in their season, when the height of the shipping season was at hand, and lower prices expected. Suggestions for canning and general market information on supply and prices was covered in these feature articles. This benefits not only the consumer, but the producer and distributor as well.

APPLE GRADING.

Eighty per cent of the apples packed in closed packages are graded and branded according to the provisions of the Massachusetts Apple Grading Law. Those who market and distribute apples have voiced their approval of the improvement which has taken place in the grading and packing of apples in the past years, during which the Apple Grading Law has been operative. Although this improvement is recognized, especially with respect to certain packs, an inquiry by the Division of Markets determined the fact that the grading and packing of Massachusetts and other eastern apples is still in disrepute among the majority of retailers. Although the quality of our eastern fruit is the best that reaches our markets, the method by which it is harvested, graded and packed and marketed often handicaps its sale.

Two groups of Massachusetts apple growers have undertaken to improve their marketing methods and the reputation for Massachusetts packed apples this past year. The Nashoba Apple Packing Association, Inc. and the Hampden County Apple Growers Association have established central packing houses where trained packing crews put up the apples under standard grades. In each case the selling has been done by one established marketing agency.

This method of packing has the very great advantage over individual packing when considered from the point of view of uniform standardization, in that all the fruit is packed by a single well-trained packing crew. It is hoped that the success of these organizations will stimulate the growth of similar organizations throughout the state. The Division of Markets has assisted in the development of this movement.

Realizing that much is to be gained by first-hand knowledge of market conditions, the marketing committee of the Massachusetts Fruit Growers Association met in Boston last year together with market men for the purpose of investigating and discussing the grading, packing and marketing of Massachusetts apples. After a trip through the markets, which included a visit to the street, the auction, and the cold-storage houses, where Massachusetts packed goods were seen in competition with other large producing sections of the country and methods of grading, packing and handling could be compared, an open forum was held with the large apple dealers.

As a result of this meeting the association has recommended an amendment to the Apple Grading Law, which will require all packages of apples to be packed in such a manner that the apples on the faced or exposed surface are representative of all the other apples in the package with respect to size, color and quality, and which will regulate the marking of open packages. The Division of Markets approves this movement, which has as its object a better reputation for Massachusetts apples.

The Department has recommended certain changes in the present law on Apple Grading intended to make the meaning of this law more clear and to facilitate the enforcement of it.

Massachusetts apples are being packed better than they were a few years ago. According to distributors, one of the reasons for this improvement is the law requiring standard branding. In its present form there is a requirement which states that nothing inconsistent with the markings required by the law or more conspicuous than them shall accompany them. This provision was apparently intended to prevent the nullification of the required markings by other private marks on the end of the barrel or the side of the box. Investigation has shown that although the trade preferred to deal in standard grades, yet the private brand accompanying such a marking has considerable commercial value. Therefore, it is believed that an attractive colored label, not inconsistent with the wording of the law should be permitted. With this idea in mind an amendment modifying the law has been submitted.

There are advantages to be secured for the efficient administration of the law by visiting packing-houses while apples are being packed and there rendering assistance and answering inquiries which will aid the growers and shippers in their marketing. The Department has done considerable work in the pro-

ducing sections this year, but the lack of transportation facilities has been a limiting factor.

A very large percentage of the Franklin County apple crop has been graded "Massachusetts standard A", "Massachusetts standard B", and the "Federal standard grade". The percentage of barrels shipped as "ungraded" is the smallest that it has been in any year since standard grades for apples were established. Grading has been very satisfactory. There have been considerably fewer violations of the Grading Law, both of a major and a minor nature, reported to date.

ONION GRADING.

Shipping point inspection service for onions has been made available again this year. A cooperative agreement with the U. S. Department of Agriculture has been entered into in order that the certificates issued may be recognized in national markets. The grades used are the U. S. grades for northern grown onions. The details of the service are similar to those under which it was operated a year ago.

A corps of four inspectors have been trained for the work by a competent supervisor, employed by the U. S. Bureau of Agricultural Economics. One of these inspectors is a resident of the Valley and is available for inspection work whenever application is made. This service was established by the growers and men interested in marketing onions for the purpose of improving the quality of onions shipped from this section. The service establishes a standard basis for intelligent dealing, enabling onion receivers to deal direct with growers, thus reducing distribution costs, inasmuch as a certification service gives onions of the same quality a uniform standard. The receiver is thus placed in a position to know the quality of goods he shall have for resale. Sales made on grade facilitate trade, prevent waste by shipping unmarketable products, and save expense of sorting at market centers. Furthermore, the establishment of grades and the accompanying service enlarge the marketing possibilities of the product.

Such a service establishes a basis of adjustment with transportation companies or others in case of damage from frosts, heat or other cause or in case of rejection by the receiver. The receiver is enabled to obtain the quality of goods he desires, thus reducing expensive readjustment at market centers.

TOBACCO GRADING.

Funds appropriated by the Legislature in 1922 enable the Division of Markets to assist in investigating present grading and marketing practices among growers of leaf tobacco with a view to recommending a system of grading whereby the tobacco-growing industry of the Commonwealth would be benefited through the adoption of more economic and scientific methods.

The work has been completed this year by the U. S. Bureau of Agricultural Economics in cooperation with the Connecticut Valley Tobacco Association. The grades which were worked out have been unanimously adopted by the directors of the Connecticut Valley Tobacco Association, and will be put into effect for the 1923 crop for the Havana Seed and Broadleaf types. The grades have been published in a booklet circulated by the Connecticut Valley Tobacco Association.

These grades were prepared by the tobacco standardization section of the U. S. Department of Agriculture on August 27, 1923, as tentative grades for Connecticut Broadleaf tobacco. A representative sample of each grade will be preserved in the tobacco standardization laboratory, Washington, D. C. No changes are to be made in these grades without the approval of the U. S. Department of Agriculture.

Tobacco is graded under the standard system according to the quality, color and length. The quality factor is divided into groups of similar quality in order to simplify the grading.

ROADSIDE MARKETS.

The roadside stand occupies an important place in the marketing of farm products on many of the well-traversed automobile roads of Massachusetts. For several years there has been a desire to sell farm products direct from farm to consumer, eliminating the large tolls of the middleman. The various other schemes tried, such as marketing by means of the parcel post, have not met with the same success as the roadside stand.

The unreliable roadside market, however, has a fight on its hands. Autoists are tired of being the victims of overcharging. There is no question but that popular demand will perpetuate roadside selling only as long as the farmer gives good quality and asks a price less than the consumer must pay for the same products at his local grocer. Time, alone, will tell the future of the ventures of roadside selling. At present there seems to be nothing standing in the way of their increased success, provided they are properly managed.

INFORMATION ON MARKETING.

There is a lack of confidence in our New England agriculture. New England needs to organize and to standardize and advertise her farm products. An increase of only 30 per cent in the use of apples in the United States would necessitate producing 25,000,000 more bushels of apples a year.

National Apple Week was celebrated in Massachusetts on a more elaborate scale than previously attempted. The city Chambers of Commerce cooperated with the State Division of Markets and the International Apple Shippers Association in bringing to the attention of the consumer the virtues of the humble apple.

The distribution of apples at the theatres on Hallow'en eve was an innovation that proved to be successful far beyond expectation. Special apple exhibits in front windows and on counters of hundreds of stores and restaurants throughout the State, together with the novel apple publicity given at the assembly luncheon and the annual dinner of the Boston Chamber of Commerce was a decided contribution in advancing the standards of apple growing and grading, and encouraging greater use of the Massachusetts fruit.

The Division of Markets aims to assist individuals, and to cooperate with organizations wherever possible, in the promotion of more efficient marketing of farm products.

Weekly and monthly articles covering the subject of marketing problems and conditions are published in newspapers and magazines reaching 48,000 subscribers. Two hundred reprints are sent weekly to agricultural leaders and educators of the State, as well as to the County Agents throughout New England.

The exhibit work conducted at the Eastern States Exposition, Springfield, Mass. told the story of efficient marketing of apples from the packing-shed through the cold-storage plant, the commission-house to the retail store where the retailer, unlike the pushcart vendor, must be capable of doing more than selling food products across the counter and receiving cash in payment. He must be capable of increasing trade and competing with his next-door neighbor.

The outstanding feature of the model retail store was the method of increasing sales of produce in season. A corner of the store was devoted to a demonstration of apple jelly making by the Department of Horticultural Manufactures of the Massachusetts Agricultural College to increase apple sales. Through the courtesy of Mr. J. C. Sowden of the Dayton Display Fixture Co., Boston, practical and sanitary fixtures laden with food products of finest quality were on display within the store.

COOPERATIVE RELATIONS.

The Division of Markets has continued to maintain cooperative relations with other agencies, local, state and national, which are doing work along marketing lines. Among these are the United States Department of Agriculture, Bureau of Agricultural Economics, the Massachusetts Agricultural College, the Massachusetts Department of Health, the Boston Market Gardeners' Association, the

Worcester County Extension Service, the Hampden County Improvement League. In the dissemination of market news, the Associated Press, the daily press in Springfield and Worcester, and the Westinghouse Radio Broadcasting Station at East Springfield, and the American Radio and Research Corporation at Medford Hillside, have given thorough cooperation.

The Massachusetts Chamber of Commerce and the Boston Chamber of Commerce have taken an active part in promoting the sales of Massachusetts apples.

The Massachusetts Fruit Growers' Association and the Nashoba Fruit Growers' Association have been greatly interested in the better marketing of Massachusetts apples. We have endeavored to comply with their requests and to work with their marketing committees.

The County Extension Services have given their assistance in placing before the farmers such information as would improve and help the marketing of their crops.

PRODUCE MARKET RESEARCH STUDY.

In connection with the studies of the costs of marketing agricultural products which the Massachusetts Division of Markets has conducted during the year in cooperation with the U. S. Bureau of Agricultural Economics, a survey was made of the methods and costs entering into the marketing of Massachusetts Baldwin apples. This survey was made with a view to determining the problems encountered by the producer and by the marketing agencies, and to ascertain, as far as possible, the best solution to these problems.

Representative jobbing and retail produce prices were collected and tabulated and gross margins were computed of farm products handled by various types of retail stores in metropolitan Boston, in order to find a typical, fair margin in relation to risks and expenses involved in handling these products.

A careful study was made of the accounting records of potato wholesalers, jobbers, brokers, and commission dealers to obtain the typical unit costs prevailing in these businesses.

Considerable has been written on the pushcart trade, but most of it has been based on cursory investigations or the desire to give publicity to a trade which is picturesque and presumably economically justified. The bulk of the material embodied in the report of the Division of Markets has been secured from personal observation of the pushcart vendors buying and salvaging produce in the city markets and selling it on the streets, in order to determine particularly the effect of this trade on a glutted produce market and the nature of the retail price margins as compared to those of other types of retailers.

As a part of the general survey of the New England milk market situation, a study was made of the transportation service rendered to the fresh milk industry by New England railroads with especial attention to the time of arrival of trains and costs incurred because of delays.

Based on the study of wastage in Boston freight terminals, as it affects cost of food distribution, opinions were given for improving conditions.

The market demand for asparagus and apples was discussed with wholesalers, retailers and consumers throughout Massachusetts and the results were published.

Charts and maps have been made to illustrate many phases of the market research work.

MASSACHUSETTS CROPS.

The crop season of 1923 was one of deficient rainfall, yet what rain fell was so distributed in point of time and in relation to crop growth that it did a maximum of good. The winter and spring months had brought abundant moisture in the heavy snows and spring rains so that grass crops, meadows, and pastures began the season in good condition. After the heavy spring rains came a dry summer which had its chief adverse effects in reducing the hay crop below normal; in seriously limiting the crop of seed onions in the Connecticut valley; in limiting the size of the cranberry crop thru undersized berries; in reducing more or less the production of apples and in hindering normal growth of corn for grain.

In spite of the moisture deficiency, the season was one to produce crops of high quality. Temperatures also were below normal and this in considerable measure counteracted the deficiency of rainfall. Insect pests and plant diseases were less troublesome than usual. The supply of farm labor at wages which farmers could afford to pay was very short and this tended to limit the operation of all farms with small profit margins. It has tended to hasten the trend out of general farming into more specialized and more profitable lines. As a result, there was a slight increase in the number of farms not worked in 1923 as compared with the number not worked in 1922. This trend is greater on farms that require more hired labor and at the same time return relatively less profits.

The whole movement is a part of the readjustments following the recent war. The United States has had a relative over-production of agricultural and other food crops and at the same time an under supply of urban products, including houses. During and for some time after the war, influences were such as to cause notable increases in the areas planted to crops and a series of favorable years has produced generous crops. With the lessened demand from Europe for such crops and with a stationary home demand, prices have necessarily been unsatisfactory in some cases. In comparison with some other parts of the United States, New England farmers have been in a much better position. There has been no burdensome over-production and high transportation costs from the west have helped to lift prices here. The movement of population out of unprofitable lines of farming into types of farming whose products are in better demand, or into urban industries is a sound one. The demand for manufactured goods is very elastic and expands into many new products, in contrast with a relatively stable demand for many food crops. Since the war, we have had a period of rapid increase in demand for the products of urban industry. This in large measure explains the movement of population to the towns and cities as well as the much higher wages offered the workers there. Sooner or later a new balance will establish itself between the products of urban industries and those of the farm. Meantime, a free flow of population to the points of greatest demand best serves the permanent interests of all. It tends to lessen crop production and to increase urban production, thereby raising prices of farm products and lowering prices of things the farmers must buy. The majority of problems confronting farmers are economic rather than political and the remedies in clear analysis and understanding of them. Then the steps to be taken will appear.

CROP AREAS, PRODUCTION, AND VALUES IN 1923.

According to the latest available figures the total land in cultivation in the state was about the same as in 1922—572,620 acres against 572,633. Tame hay with 439,000 acres formed about 76% of the total and its farm value was \$14,012,880 compared with \$13,501,000 in 1922. Its value is about 30% of the total value of farm crops, not including market garden crops. In point of value potatoes, with 26,000 acres in 1923 against 29,000 in 1922 and a production of 4,550,000 bushels against the small crop in 1922 of 2,610,000 bushels, take second place. Their estimated value was \$6,734,000 compared with \$2,480,000 in 1922. This large gain in value is due to a change in acre yield from 90 bushels in 1922 to 175 in 1923 and to a higher price for the larger crop. Tobacco had 10,000 acres in 1923, compared to 9,379 in 1922 and estimated production was 14,550,000 pounds as against 11,254,800 the year before. Better yields in 1923 and better prices give a total value of \$6,500,000 as against \$4,952,112, the value in 1922. This crop held third place in values of individual crops.

Fourth place, in farm values, fell to the apple crop with an estimated value of \$4,698,630 compared with \$4,364,500 in 1922. Estimated production in 1923 was 3,132,420 bushels compared with 3,010,000 bushels in 1922. Of this total 531,000 barrels were rated as commercial in 1923 and valued at \$2,124,000 compared with 461,000 barrels valued at \$1,797,900 last year.

Fifth place went to the Connecticut valley onion crop with estimated production of 1,142,400 bushels valued at \$2,970,240 compared with 1,237,500 bushels valued at \$1,051,875 in 1922. Cranberries took sixth place with estimated production 350,000 barrels valued at \$2,800,000 compared with 300,000 barrels valued at \$3,150,000 in 1922. Prices in 1923, due to a larger crop, were considerably lower than in 1922. Silage corn, tho not a commercial crop, held seventh place in farm value. Its estimated production was 258,530 tons valued at \$2,068,240 compared with 226,386 tons valued at \$1,811,088 the previous year. Corn for grain, grown for use on the farm, took next place with a production of 1,284,800 bushels valued at \$1,438,976 compared with 1,169,000 bushels valued at \$1,098,860 in 1922.

Peaches came next with 205,000 bushels valued at \$553,500 compared with 200,000 bushels valued at \$524,000 in 1922. Since this crop is highly commercialized and much of it is sold by farmers at retail prices the total amount of money returned to farmers was probably much higher than these figures. Oats took the next place with estimated production of 350,000 bushels valued at \$203,000 compared with 340,000 bushels valued at \$214,200 the year previous. Maple syrup and sugar, made almost exclusively in the four western counties, held next place with a total value of \$132,000 compared with \$209,640 in 1922. This big decrease was caused by the unfavorable sugar making season in the spring of 1923. Pears, raised both for home use and for local markets, held next place with 57,400 bushels valued at \$86,100 compared with 84,000 bushels valued at \$123,480 in 1922. Beans, buckwheat, rye and wheat, all of minor importance were of about the same production and values in 1923 as in 1922. The total estimated farm value of the above crops in 1923 was \$44,751,916 compared with \$32,630,222 the year before. This is a gain of about 37% and is one of the favorable factors not only in the state's agricultural situation, but also in the whole business situation. The season, on the whole, was favorable to dairymen and the livestock industry is in a healthy condition.

REPORT OF THE DIVISION OF ORNITHOLOGY.

PUBLICATIONS OF THE YEAR.

No attempt was made during the year to secure the publication of any special report or paper, as in the interest of economy the publication of several papers was refused in former years by those who have the matter in charge; also there were no reprints. The only paper published was the Annual Report of the Division of Ornithology for the year 1922, printed without illustrations.

The annual report for 1923 has been reduced from 28 pages to its present size.

MATERIAL IN PREPARATION FOR PUBLICATION.

Work on the first volume of the Birds of Massachusetts, preparation of which was authorized by the Legislature of 1921, has been continued during the year.

GULLS AND TERNS FEEDING ON THE SEVENTEEN-YEAR CICADA.

In the summer of 1923 considerable numbers of the periodical or seventeen-year cicada (*Tibicina septendecim*) emerged from the ground in Plymouth and Barnstable Counties and attacked the trees. On June 26 Mr. Wilfrid Wheeler, manager of the Coonamessett Ranch at Hatchville, Falmouth, notified the Division of Ornithology that "Mackerel Gulls" were eating seventeen-year cicadas. Laughing Gulls and Common and Roseate Terns were seen devouring cicadas at the outbreaks in Falmouth, Mashpee and Barnstable.

Mr. Henry Peters, tree warden of Mashpee, and Mr. William F. Jenkins, of West Barnstable, both reported that gulls and terns were doing this in Mashpee and Santuit. Mr. R. H. Allen, Director of the Division of Plant Pest Control of the Massachusetts Department of Agriculture, who was at

Coonamessett Ranch, July 9, also noted the gulls destroying cicadas. Mr. Allan Keniston, superintendent of the Heath Hen Reservation on Marthas Vineyard, says that on Muskeget Island at the time of the cicada outbreak on Cape Cod, the Laughing Gulls were feeding their young on that insect.

They must have carried the food about twenty-one miles from the nearest Cape Cod cicada colony. The seventeen-year cicada appeared this year in Sandwich, Mashpee, Falmouth, Barnstable and Yarmouth, with a few other records from the border line between the townships of Truro and Wellfleet. The most intense broods were found along the shore of Cape Cod from Falmouth to Yarmouth, with heavy broods on the east side of Buzzards Bay in Bourne and Sandwich.

THE HEATH HEN.

In the report of the Division for 1922, it was predicted that with continued diminution the Heath Hen would soon be extinct. The diminution has continued and the species is now in danger of extinction. It is doubtful if there are in the world today 50 Heath Hens. But even so, the attempt to preserve the species should not be given up, as its numbers have been similarly reduced once, and there is still a possibility of saving the species.

THE GULLS AND TERNS OF MASSACHUSETTS.

Apparently a redistribution of Gulls and Terns is going on along the coast of Massachusetts. On Muskeget, which formerly was occupied by an immense colony of Common Terns, many Roseate Terns and some Arctic Terns, Laughing Gulls have now greatly increased, so that Terns now occupy only a small part of the Island. It seems evident that many Terns that formerly bred on the Island have left it and within the past few years many Terns have appeared along the coast of the mainland and begun breeding, a few pairs at a place. None of these colonies, however, on the coast of the Mainland, can be permanently successful, although by scattering about, the birds may be able for a time to rear young. There are too many winged and four-footed enemies on the mainland and our shores are too populous now in summer to allow these birds to breed there successfully and continuously. The Islands of Penikese and Egg Rock, now in possession of the Commonwealth of Massachusetts, should be set aside as breeding places for sea birds.

BIRD BANDING.

During the past year the Division has taken an active part in the work of trapping and banding birds, inaugurated by the Biological Survey of the United States Department of Agriculture. The practice of trapping birds and tagging them by means of numbered aluminum bands attached to the right leg has grown rapidly in Massachusetts and New England. Most of the official observers of this Division have taken up bird banding, and most of the members of the New England Bird Banding Association have made reports to this office as well as to the Biological Survey.

REPORT OF THE DIVISION OF RECLAMATION, SOIL, SURVEY AND FAIRS.

The reclamation work of the Division of Reclamation, Soil Survey and Fairs for this year has been carried on by the State Reclamation Board: the Director of the Division of Reclamation, Soil Survey and Fairs is also Secretary of the State Reclamation Board. The report of the Board follows:

REPORT OF STATE RECLAMATION BOARD.

The personnel of the Board has continued unchanged since 1921 — Mr. Warren C. Jewett of Worcester, Chairman, representing the Department of Health, and Mr. Leslie R. Smith of Hadley, Secretary, representing the Department of Agriculture.

The experience of the Board during 1921 and 1922 with the drainage law as embodied in Chapter 252 of the General Laws and its amendments demonstrated that somewhat sweeping changes were necessary in order to make it workable. With the assistance of various State legal authorities the law was thoroughly revised. This revision was passed by the Legislature as Chapter 457 of the Acts of 1923 in the form of an amendment to Chapter 252 of the General Laws. The principal changes made were: The form of the district changed from a business to a municipal corporation; four methods of financing provided instead of one; the limits of the district and the proportion of the cost each member must pay is determined before construction as authorized instead of after it is finished; the assessment roll is prepared by the District Commissioners instead of the Town Assessors; and the name changed from Drainage to State Reclamation Board. The new law is working well except for a few clauses which should be clarified.

The revisions in the law have involved reorganizing several districts and the preparation of new standard forms for petitions, district by-laws and procedure.

It has been the policy of the Board, based upon its interpretation of the spirit of the law, to act as a bureau of information and as a clearing house to aid local communities in solving their wet land problems. Communities are encouraged to utilize their local town or private engineers and contractors and in some cases are shown how to do the work themselves.

Five new petitions have been presented to the Board this year and others are in the course of preparation. In one case the land owners were shown how to accomplish the desired end without involving the formation of a district. The status of the projects now before the Board follow.

SALISBURY DRAINAGE DISTRICT (SALISBURY).

It was decided to continue this project under the old law. Application was made to the Essex County Commissioners to finance it, but the application was refused. An appeal was made and a new hearing, at which the Board was represented, was held in September. The decision has not yet been announced.

GREEN HARBOR DRAINAGE DISTRICT (MARSHFIELD).

Action will be taken to dissolve the present drainage district as a new petition has been presented to the Board to form a reclamation district under the new law. Conditions have radically changed on the project during the year due to the extensive building of summer cottages in the marsh along the Ocean Bluffs road, thus creating an additional demand for the drainage of the marsh. The legal status of the entire situation has been studied. It is expected that a solution of the various problems involved will be found this winter.

WEWEANTIC RIVER DRAINAGE DISTRICT (CARVER).

Owing to shortage of labor the only work by this district this year has been the installation of a 4 ft. corrugated pipe through the road at Holmes Mill to supplement the insufficient water passages at this point, and some clearing of the channel above. One other obstruction, the Old England Bridge near Tremont, is being torn down and replaced by a new concrete bridge under the direction of the Department of Public Works. The work previously done by the district continues to operate successfully.

NORTH MARBLEHEAD RECLAMATION PROJECT (MARBLEHEAD).

The Board accepted a petition under the new law and appointed commissioners. The Town of Marblehead at its annual March meeting voted the sum of \$2,600 for constructing the key portions of the plan and the selectmen and district commissioners have agreed to work together in carrying out the project, using the plan of development laid out by the Board.

ASSABET RIVER DRAINAGE DISTRICT (WESTBOROUGH — NORTHBOROUGH).

Having failed to obtain the consent of the Worcester County Commissioners to finance this project under the old law, the district will be dissolved and a reclamation district formed under the new law for which a new petition is now being signed. The sewer beds of the Town of Westborough are situated in this marsh and because of lack of proper drainage cannot function as they should. The town will, therefore, be requested to contribute to the cost of draining this marsh as an aid to its sewage disposal. The State Hospital at Westborough and the State Hospital at Grafton discharge from their sewerage disposal plants into the river above the marsh and the Lyman State School for Boys holds lands in the marsh. As the Commonwealth is a direct contributor to the surplus water and also owns land in the project, the Board, in compliance with the law, recommends that the Legislature make the necessary appropriations to cover the Commonwealth's share of the expense of draining these marshes.

SHELBURNE PROJECT (SHELBURNE).

No progress has been made on this project during the year.

CHERRY RUM BROOK DRAINAGE DISTRICT (GREENFIELD).

Work on the main drainage channel has been completed and also a portion of the more important laterals. The project has been very successful and the cost less than the original estimate. Land that could not be utilized at all before draining has this summer raised excellent crops of potatoes, cabbages, strawberries, etc. Land that would barely bear the weight of a person has been ploughed with heavy horses. The ice pond at the lower end of the project is much improved and mosquitoes eliminated throughout the length of the project. Land values have very greatly increased.

WESSAGUSSETT DRAINAGE PROJECT (NORTH WEYMOUTH).

Owing to the absence of one of the larger owners and the change of ownership of the other portions no progress has been made in this project this year.

MALAGASCO DRAINAGE PROJECT (BOYLSTON).

This project has made no progress this year owing to the opposition of the owners of land at the outlet of the marsh.

NEW PROJECTS.

North Scituate Reclamation Project (Scituate).

This project, covering 100 acres, is situated on the easterly branch of the salt marsh through which Bound Brook enters Cohasset Harbor. Musquashiat Pond lies between North Scituate Beach and the road which forms the easterly boundary of the project and the road about a mile to the west forms the western boundary. It is proposed to hold the pond at its present level, to drain the project, and to leave the rest of the marsh in its present condition. At the hearing held June 8 the owners of property on the beach proposed that the maintenance of the pond by a conduit through the beach to the salt water be made a part of the project. A petition was circulated with that end in view, but was not signed by a majority of the beach owners, so that the project will be taken up on the basis of the original petition.

Wapping Reclamation Project (Deerfield).

The land to be drained under the petition lies along the east side of the Deerfield River, between the villages of Wapping and Deerfield Center. It is in three parts: a main swamp at the upper or south end of the area, a smaller swamp along the railroad and just south of Deerfield Center, and low land along the border of the old channel near the river. A hearing was held and a survey of the wet land and possible drainage channels has been made and designs are now being considered for draining this land.

Great Pasture Reclamation Project (Deerfield).

This petition covers about 10 acres on the lower bench just west of Deerfield Center. An examination was made of this land and a hearing held. As the drainage of this land consists of clearing a short ditch and controlling some springs, it is believed that the owners can perform the necessary work themselves and avoid the formation of a district. Should it prove necessary this land can for administrative purposes be made a part of the Wapping district.

Bear Meadow Reclamation Project (Whitman).

A petition is being signed covering the wet land from the Whitman Railroad Station to North Hanson Station.

Recommendations.

It is recommended that the Legislature be asked to make the changes necessary to clarify the law. It would greatly facilitate the work if the Commonwealth would advance the money necessary for making the district surveys, allowing the district to reimburse it as soon as district funds become available. Bridges and culverts so placed as to prevent proper drainage of lands above are of very common occurrence. Such construction could be prevented in the future if the principal areas needing drainage could be determined and this information made available to those having the new bridges in charge. It is recommended that the Board be provided with the funds necessary for this purpose.

SOIL SURVEY

The season of 1923 was devoted to field work in Berkshire County, which was all surveyed before winter began. The checking of the survey cannot, however, be done until the spring of 1924, so that no results or conclusions can yet be stated. It is known that some of the soils in Berkshire are the same as soils previously classified in the state of New York, or of similar character, and others are like soils identified in the counties of Massachusetts where soil survey work has already been completed. A constituent of considerable importance and value in many Berkshire County soils is the lime derived from extensive beds of limestone which underlie a large part of the county.

The Commonwealth has been fortunate in having the continued service of Mr. W. J. Latimer, soil specialist, who has been assigned to the field work in Massachusetts by the United States Bureau of Soils for the last four years. His long experience and proven ability in this line of work assure thorough and reliable reports on our soil conditions. Mr. Latimer has been assisted during the past season, as in 1922, by Mr. M. O. Lanphear of the Massachusetts Agricultural College, whose work has been very satisfactory.

Progress is being made on the publication of reports covering the surveys of Barnstable, Bristol, Norfolk and Worcester counties, which were made in the three years 1919 to 1922, inclusive. The reports for the first three of these counties are to be combined in one publication. Drafts of the text and of the soil maps of Barnstable and Bristol Counties have been received from the Bureau of Soils and have been returned with comments and suggestions. The draft text of the report on Worcester County has also been received, read and returned. It is hoped that the reports on all these counties may be published during the year 1924.

FAIRS AND EXHIBITIONS.

Prize money allotments were made to one hundred twenty-one agricultural societies, granges and other agricultural organizations holding fairs in Massachusetts this year.

Special exhibitions were installed in connection with the Union Agricultural Meeting, Horticultural Hall, Boston, January 16, 1923; the Franklin County Agricultural Society's Fair at Greenfield, September 13; the Eastern States Exposition, Springfield, September 16-22; Brockton Fair, Brockton, October

2-6; and the Eastern Apple Exposition, New York City, New York, November 3-10.

The apple industry exhibit in the Massachusetts Building, Eastern States Exposition Grounds, Springfield, was a visualization of the story of the apple covering the planting, pruning, fertilizing, cultivating, spray dusting, harvesting, grading, packing, shipping, storing and selling.

In connection with the horticultural and floricultural exhibit at the Brockton Fair, the Department cooperated as usual and helped in every way to make the exhibit a success. In connection with the Eastern Apple Exposition and Fruit Show in Grand Central Palace, New York City, N. Y., November 3-10, the Department furnished both money and the services of its employees in collecting material, making arrangements for the exhibit and installing the same.

The fairs have been inspected by a representative of the Department and a detail record made of the number and character of exhibits.

The number of calls for State prize money is constantly increasing and as a result a request for a larger appropriation for this purpose has been made. The need for more money is very apparent and unless more funds are made available, it will be impossible to meet all the demands of this nature.

The illustrated lecture on fairs has been kept up to date by the addition of new slides and data, and its popularity is shown by the number of requests received for this particular talk.

Fairs have been in the main well attended and the exhibits have shown more thought and care in their selection and planning. The interest in agricultural fairs seems to be on the increase as evidenced by the number of new fairs held each year. This is particularly true of grange and community fairs which serve only one locality.

Special department ribbons have been offered in some cases instead of money and this type of award seems to have met a certain need and its continuance is warranted.

MEDALS.

A new policy has been adopted in regard to the awarding of State Medals. The Department now annually offers a very limited number of gold medals as a recognition of worthy agricultural achievement. These medals are awarded by a Board consisting of the Commissioner of Agriculture, the Director of the Division of Reclamation, Soil Survey and Fairs, the Advisory Board of the Department, the President of M. A. C., the Master of the State Grange, the President of the Massachusetts Federation of Farm Bureaus and the editor of the New England Homestead.

In addition a limited number of silver and bronze medals are awarded at the discretion of the Director of the Division of Reclamation, Soil Survey and Fairs, and the approval of the Commissioner of Agriculture.

CAMP GILBERT

The Department cooperated in the conducting of Camp Gilbert at the Massachusetts Agricultural College this year and paid the expenses of same as follows:

Camp	\$895 60
Pins, Badges, etc.	1,117 65
	<hr/>
	\$2,013 25

EXPENSES OF SPECIAL EXHIBITS

Union Agricultural Meeting	\$743 09
Special exhibit at Greenfield Fair	53 00
Eastern States Exposition	3,876 98
Eastern Apple Exposition, N. Y.	2,000 00
	<hr/>
	\$6,673 07

AGRICULTURAL PRIZE MONEY AWARDED TO SOCIETIES AND FAIRS.

Acton Agricultural Association, \$346.00; Acushnet Grange, \$20.00; Barnstable Agricultural Association, \$550.00; Becket Grange, \$25.00; Bedford Grange, \$35.00; Blackstone Valley Agricultural Association, \$400.00; Braintree Grange, \$30.00; Brimfield Grange, \$13.00; Bristol County Farmers' Club, \$150.00; Brookville Grange, \$17.00; Bournedale Agricultural Society;¹ Chelmsford Grange, \$20.00; Cheshire Grange, \$15.00; Concord Grange, \$17.00; Dedham Grange, \$32.50; Deerfield Valley Agricultural Society, \$650.00; East Bridgewater Grange, \$20.00; Essex Agricultural Society, \$543.00; Falmouth Agricultural Society, \$51.00; Flintstone Grange (Dalton), \$14.00; Franklin County Agricultural Society, \$900.00; Franklin Grange, \$25.00; Framingham Boys & Girls' Club, \$49.50; Garden City Grange, \$25.00; Gardner Driving & Riding Club;¹ Garfield Grange (No. Dana), \$20.00; Gill Grange, \$23.00; Greater Lynn Agricultural Society, \$400.00; Groton Farmers' and Mechanics' Club, \$450.00; Hampden Agricultural Fair, \$30.00; Hampden Co. Boys' and Girls' Club, \$97.00; Harwich Agricultural Fair, \$42.00; Heath Agricultural Fair, \$99.00; Hampshire, Franklin and Hampden Agr. Society, \$900.00; Highland Agricultural Society, \$650.00; Hillside Agricultural Society, \$650.00; Hingham Agricultural Society, \$21.00; Hinsdale Grange;¹ Holliston Grange, \$25.00; Hoosac Valley Agricultural Society, \$397.00; Housatonic Agricultural Society, \$900.50; Lanesborough Grange;¹ Lawrence Horticultural Society, \$50.00; Lee Grange, \$30.00; Lexington Grange, \$18.00; Littleville Agricultural Society, \$16.00; Lowell Driving Club and Agricultural Society, \$100.00; Lunenburg Farmers' Club, \$50.00; Lunenburg Grange, \$14.00; Lenox Grange, \$25.00; Mansfield Grange, \$20.00; Marshfield Agricultural Society, \$600.00; Martha's Vineyard Agricultural Society, \$400.00; Merrimac Grange, \$20.00; Milton Grange, \$20.00; Monomoy Grange, \$19.00; Montague Grange;¹ Nantucket Agricultural Society, \$150.00; Natick Grange, \$20.00; Needham Grange, \$25.00; New Salem Grange, \$20.00; Northfield Grange, \$28.25; Norton Grange, \$23.00; North Shore Horticultural Society, \$11.00; Otis Grange, \$23.00; Oxford Agricultural Society, \$400.00; Pembroke Grange, \$35.00; Plainville Grange, \$20.00; Plymouth Co. Agricultural Society, \$400.00; Ponkapoag Grange, \$23.00; Randolph Grange, \$30.00; Raynham Center Grange, \$20.00; Reading Grange, \$20.00; Riverdale Grange, \$9.00; Rockland Grange, \$25.00; Rochester Grange, \$20.00; Sandwich Agricultural Society, \$50.00; Southborough Cattle Show and Fair, \$169.00; Southborough Grange, \$13.50; Sterling Farmers' Club, \$21.00; Stockbridge Grange, \$30.00; Stoughton Grange, \$20.00; Sutton Boys' and Girls' Club, \$26.50; Templeton Grange, \$29.00; Union Agricultural Society, \$594.50; United Shoe Machinery Athletic Association, \$31.00; Ware Agricultural Society;¹ Wachusett Grange, \$25.00; Warren Grange, \$30.00; Wendell Grange, \$30.00; Westminster Farmers' and Mechanics Club, \$50.00; West Newbury Grange, \$29.00; Westport Agricultural Society, \$499.50; West Stockbridge Grange, \$21.00; Weymouth Agricultural and Industrial Association, \$311.00; Williamsburg Grange, \$35.00; Worcester Agricultural Society, \$870.00; Worcester North Agricultural Society;¹ Worcester Northwest Agricultural Society, \$700.00; Worcester South Agricultural Society, \$650.00; Worcester County West Agricultural Society, \$700.00; total, \$16,271.75.

POULTRY SHOWS.

The Department offered prizes through nineteen poultry, pigeon and pet stock association shows during the year 1923. Each show has been inspected by a representative of the Department and a record of the number and character of exhibits is on file.

The prize money was awarded as follows:

Amherst Poultry Association, \$150.00; Athol Poultry Association, \$50.00; Boston Poultry Association, \$473.00; Eastern Mass. Pigeon, Poultry and Pet

¹ No fair held.

Stock Assn., \$198.00; Fitchburg Poultry Association, \$44.00; Gardner Poultry Association, \$88.00; Holyoke Poultry Association, \$150.00; Hub Poultry Association, \$129.50; Hub Poultry Association, \$149.00; Lenox Poultry Association, \$141.00; Needham Poultry Association, \$88.00; Needham Poultry Association, \$125.00; New England Poultry Association, \$175.00; New England Poultry Association, \$175.00; Northampton Poultry Association, \$168.50; Springfield Poultry Association, \$200.00; Stoughton Poultry Association, \$128.00; Stoughton Poultry Association, \$123.50; United Rabbit & Cavie Club, \$50.00; total, \$2,805.50.

SUMMARY OF EXPENDITURES

Appropriation	\$28,556 75
Paid:	
Prizes at fairs	\$16,271 75
Special exhibits	6,673 07
Poultry and rabbit shows	2,805 50
Boys' and Girls' Clubs (camp)	2,013 25
Postage	100 00
Miscellaneous	75 36
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	27,938 93
Balance	\$617 82

CONTROL WORK.

The first half of the year was largely occupied with the preparation of material for the session of the General Court and following bills relating to agriculture which were under consideration during the session. A record was kept on about forty bills and some attention was given to other measures which it was found unnecessary to follow throughout the course of proceedings taken upon them.

In the last annual report five recommendations for legislation were made. One of these was not pressed because it was found that sufficient funds would not be available to justify creation of the administrative machinery for corn borer suppression that the passage of the bill would have provided. The other four recommendations were adopted by the legislature but the final bills in each case varied in form and language from the department's recommendations. Before the beginning of the session it was found that the recommendation for amendment of the Drainage Law did not go far enough and an additional bill was, therefore, entered on petition of the Drainage Board. These two bills ultimately resulted in a thorough revision of the old drainage law, which required almost constant attention throughout the session, the final bill being signed by the Governor only a few hours before prorogation. Another bill of considerable importance provided for the organization of cooperative and horticultural associations without capital stock. The original bill was introduced at the instance of the Connecticut Valley Tobacco Growers' Association, but was developed into a detailed measure after its introduction, and during its passage was frequently and extensively amended. This bill also did not become law until almost the end of the session.

Cases were conducted during the year for various violations of the laws which the department is charged to administer. Under the dairy laws five cases were prosecuted. One of these was brought for a violation of the laws regulating the sale of milk, three for violations of laws relating to oleomargarine, and one for obstructing an officer in the performance of his duty. The prosecutions were successful in three cases out of five, the defendants being acquitted in one case under the oleomargarine law and in the case for obstructing an officer. Three cases were brought for violation of the law regulating the grading and packing of apples. In two of these the defendant was

convicted and in the other case the defendant left the state before the complaint was entered and has since been out of the jurisdiction.

In connection with the prosecutions brought, numerous legal questions have been investigated and legal problems arising in connection with various branches of the department's work have also been given attention. The organization of drainage and reclamation districts has raised numerous questions on such subjects as obstruction of water courses, mill rights, pollution of streams, and so forth, some of which have required considerable study. A regrettable feature of some of these cases is that valid rights originally belonging to some of the parties concerned have been lost by failure of the parties to take legal action within the time limit set by law. Occasionally this failure to act has apparently been due to the ignorance of the parties, but more commonly to the reluctance of these parties to take legal proceedings on account of the probable expense and the long delay likely to be experienced in securing a decision from the courts.

Further work has been done on the compilation of the agricultural laws of the commonwealth.

No complaints have been made during the year about fraudulent promotions of agricultural inventions or similar schemes.

The year closed with the preparation of material for the recommendations of the department for legislation to be considered by the session of the General Court in 1924.

REPORT OF THE DIVISION OF PLANT PEST CONTROL.

NURSERY INSPECTION.

The inspection of nurseries during the year 1923 has been conducted along the usual lines. The field inspection started early in May, at which time an examination was made of the five-leaved pines for white pine blister rust and of all pines for European pine shoot moth. It is unusual to find other than an isolated case of either of these pests in the nurseries, yet each year a careful inspection is made for them. A general inspection of the nurseries was made during the summer with especial attention devoted to stock susceptible to scale. A small amount of both San José and oyster-shell scale was found, as was to be expected, but all such infestations were immediately destroyed or the stock withdrawn from sale. Unless the infested stock is of a rare variety we usually recommend that it be destroyed and this practice continued over a period of years has reduced our infestations so that they are very easily taken care of.

A meeting of the Federal Horticultural Board was held in the State House, Boston, in August to discuss the present gypsy moth situation and the best way of ascertaining that shipments of nursery stock originating in the infested area would be free from this pest. About fifty New England nurserymen were present as well as State and Government officials. In a detailed discussion the conditions in and around the nurseries, the possible carriers other than nursery stock, such as stone and quarry products, lumber, etc. were brought out. Shortly afterwards the following regulations were issued and are still in force.

"Whenever any nursery in the gypsy moth or brown-tail moth area is reported by a State inspector to be appreciably infested with either the gypsy moth or the brown-tail moth, or whenever such infestation is determined by a Federal inspector on his examination of shipments from such nursery, further certification for interstate movement from that nursery will be refused until after the close of the next gypsy moth egg-laying season, or until such nursery has been inspected and certified by the State to be apparently clean."

The inspection in the nurseries for gypsy moths cannot be made until the first part of September, when it is reasonably certain that all the eggs have been laid. It is necessary to have a large force of well trained men for the work. If our inspection showed that the nursery was not apparently free of

gypsy egg masses, our inspectors would immediately discontinue the examination until such time as the nurseryman informed us that he had re-inspected his stock and believed it to be clean. From the time our inspection showed the nursery to be infested until a certificate was issued stating that the stock was clean, all shipments destined to points outside the gypsy moth area were refused by the Federal inspectors. This caused some delay in shipments and a temporary hardship to some of the nurserymen, but it is hoped that they will profit by their experience and another year the nurseries will be cleaned earlier and more thoroughly.

Considerable attention is being paid to the property immediately adjacent to nursery stock. This must be kept free from insects and diseases so as to protect the nursery from outside infestations. Infested property adjacent to nursery stock must be properly taken care of by the property owner or the State will assume the responsibility and charge the same to the owner.

Numerous calls for inspections of gardens and orchards were received and responded to, and an occasional inspection of an insect outbreak on an estate. These were of minor importance with the exception of an infestation of the European pine shoot moth in Brookline. The pines are not very numerous in this particular locality and it is hoped that the infestation can be wiped out next year.

A total of 186 nurseries were inspected and 283 agents' licenses granted. Both of these figures show an increase over any previous year.

EUROPEAN CORN BORER.

The European corn borer which was first discovered in this country in 1917 is now conceded to be a pest of major importance. This department has spent considerable time in trying to bring before the people, especially those in the corn-growing states, the possibilities of damage and losses, should this insect reach them. Larger Federal appropriations have been sought, but unsuccessfully, in order to carry on a more intensive campaign. Such an intensive campaign is especially important here in New England where we have a two-brooded insect for it can readily be seen that if this insect becomes established in the corn belt, it will be far more serious than the single-brooded corn borer which at the present time occurs in New York, Ohio and Canada.

We have continued our cooperation with the U. S. Dept. of Agriculture in carrying out the quarantine relative to the shipments of corn and broom-corn, including all parts of the stalk, celery, green beans in the pod, beets with tops, spinach, rhubarb, oat and rye straw as such or when used for packing, cut flowers or entire plants of chrysanthemum, aster, cosmos, zinnia, hollyhock, and cut flowers or entire plants of gladiolus and dahlia, except the bulbs thereof, without stems, to places outside of the area without inspection. It is possible to certify some of the stock in the field, but a greater part of it is examined in the Boston market. We believe the quarantine work has been very effective in retarding the spread of this insect, but we have great hopes in the following bill passed by the legislature last spring:

“. . . Every person in the infested area in possession of land on which corn of any kind has been grown, shall, not later than December first of the year of its growth, plow, or cause to be plowed the field in which it was grown, so as to bury the stubble to a depth of at least six inches, or pull up said stubble or cause it to be pulled up and destroy it, or cause it to be destroyed, by burning, and every person having in his possession corn stalks shall, not later than April tenth of the year following that of their growth, completely dispose of such corn stalks by using them as fodder or by burning them. Whoever violates any provision of this section shall be punished by a fine of not less than twenty-five nor more than five hundred dollars.”

While the borer infests a large number of plants, it prefers corn and in the lightly infested towns and towns on the border, most of the borers are

to be found in corn. Experiments have proved that most of the borers in infested corn stubble are unable to survive if the stubble is buried in the fall to a depth of six inches. Therefore, if this law is complied with, it should aid materially both in checking the spread and reducing the number of borers.

A thorough educational campaign has been carried on this fall under the direction of Mr. Q. S. Lowry, assistant director in this division. He endeavored to bring this law to the attention of each corn grower. Cooperation was secured thru the offices of the Farm Bureaus and County Agents and notices were posted in conspicuous places in the infested towns. In addition a corps of inspectors canvassed a greater part of the area and received hearty cooperation. Some of our farmers have become accustomed to sow down the field where corn had been planted, after the last cultivation. This practice will necessarily have to be discontinued.

The late spring and native parasites were instrumental in reducing the corn borer infestations, which were not over 60% as numerous as a year ago. A large number of parasites brought to the country from Europe have been liberated, but it will be some time before their usefulness can be determined.

The scouting this fall showed that the borer had not spread farther west and that the only additional towns to be quarantined are on the Islands of Martha's Vineyard and Nantucket.

WHITE PINE BLISTER RUST.

When the white pine blister rust was first found in Massachusetts, the responsibility for the prevention of the further spread of the disease was assigned to this department and the work has been conducted by this division in close cooperation with the Office of Blister Rust Control, of the United States Department of Agriculture. In 1922, the Extension Service of the Massachusetts Agricultural College was added as a cooperating organization.

At the present time, the plan of work takes the form of a campaign of education and demonstration organized for the purpose of furnishing to all interested parties thru personal contact, the essential facts relative to this disease and the simple means by which its further spread can be checked; that is, by the general elimination of currant and gooseberry bushes (*Ribes*) from pine-producing lands. In accordance with this plan, the Federal department has assigned agents to six districts in the state; namely, Essex, Plymouth, Worcester (South), Worcester (North), Franklin, and Hampden. The State department in carrying out its obligation under the plan guarantees to aid land owners by providing men to supervise the actual practice of control work; that is to say, to assist in locating areas in which currant and gooseberry bushes are growing and thus menacing nearby white-pine stands. In this manner, the State and Federal departments are attempting to fulfill an obligation to the community as a whole, while the responsibility for and the actual cost of control work is borne by the individual owner whose interests are principally at stake.

The procedure followed is to select a group of towns in every district, each year, and to concentrate effort in these towns so that the work can be handled systematically. It is expected that by completing work in a series of five to eight towns in each district each year, the entire pine-growing sections of the state will have been canvassed and the pines properly protected in the shortest possible time.

From the observations of the last two years it may be said that blister rust is quite generally distributed thruout the state, at least as local or spot infections. During the year 1923, the stage of the disease developing on the white pines was found in 20 additional towns, making a total of 144 towns to November 30, 1923. Infection seems to be most general in Essex, Northern Plymouth, Western Hampden, Southern Berkshire, and Northern Worcester Counties. In the other sections it is distinctly spot or local, as far as can be determined from present records.

The educational work as conducted by the federal agents has consisted primarily of personal interviews with pine owners and others; supplemented by talks on blister rust; the placing of special exhibits in local store windows and at some of the agricultural and grange fairs; conducting demonstrations with individuals and groups; the distribution of printed information about the disease; and the insertion of news items in local publications.

Field work involving the eradication of currant and gooseberry bushes has been carried out by this department along practically the same lines as last season except that more use has been made of the system of preliminary scouting. The purpose of this type of field work is to eliminate all areas on which currant and gooseberry bushes do not grow in any abundance, and thus reduce the extent of the area on which work must be performed by a crew. The proper handling of the removal of cultivated *Ribes* always has been and very likely will continue to be, one of the most troublesome phases of blister rust work. The policy followed at the present time is to use persuasion as far as possible rather than compulsion and to make every effort to avoid the bitter feeling and antagonism which has been so detrimental in the past. The results of this year's work in handling this particular phase of the problem justify the statement that the procedure followed is at least a reasonable one, for, altho 14,887 cultivated bushes were removed during the year, only 10 compensation claims have been received.

Ribes eradication work has been performed on a larger area than ever before in Massachusetts, 198,631 acres of land having been examined during the season of 1923. Much of the increased acreage results from the fact that extensive areas have been found to be practically free from *Ribes* and, therefore, the pines have been protected by scouting without resort to the expense of crew work. The average cost per acre was thus reduced to the unusually low figure of 12¢. In this work 1,056 property owners cooperated and expended the equivalent of \$6,894.90 as their share of the cost of the work. Wild *Ribes* to the number of 1,558,107 and 14,887 cultivated *Ribes* were removed during the field season.

From the above records, it is believed that the work of the year 1923 has been marked by commendable progress in the campaign of presenting in a calm and sensible, yet convincing manner, the important facts concerning blister rust and its control; and that every effort is now being made to take the necessary measures to prevent further damage from this disease in white pine producing sections and thus assure the protection and perpetuation of white pine as "one of the Bay State's best natural resources." The experiences of the past two years during which the present plan of work has been in operation gives assurance that this will be accomplished, if reasonable appropriations continue to be made available for a few years longer.

The white pine blister rust work in Massachusetts has been carried on under the direction of Mr. C. C. Perry, and much of the success attained in this work has been due to his untiring efforts and thoroughness. His work deserves the highest commendation.

APIARY INSPECTION.

The accomplishments of apiary inspection during the past season have been quite satisfactory, altho the season has not been without its trials. The sudden automobile rate restriction temporarily delayed the work at a critical period; but what at first was thought to be a limitation and hardship was soon overcome and the work proceeded. Probably more territory was covered this season than any other previous season in recent years, thanks to the additional funds available. Towns which had not heretofore been inspected, at least for several years, were again covered. Territory south of Boston for which the additional appropriation was particularly requested was well inspected. During the next year the same territory should be gone over again for the purpose of checking up any remains or re-occurrences of disease. At the same time, it will be possible to extend inspection to small towns and to remote districts which it was found impossible to reach during the past year.

A significant feature of the towns visited south of Boston, where inspection had not been possible for several years, was that about as many new beekeepers were discovered as there were old beekeepers who had discontinued business. Thus, the industry apparently maintains the same number of beekeepers despite the fact that there have been a great many discontinuances during the period of three to five years.

The extended work south as well as north of Boston did not in any way hinder the progress in other sections of the state. In Berkshire County the usual territory was covered. In the Connecticut Valley, fully as many towns if not more were visited, as in any previous year. Worcester County and territory to the east where considerable disease has been found were thoroughly canvassed, as has been done in previous years. Some of these districts which heretofore were badly infected show great improvement. In very few instances were bad occurrences of disease found. It cannot be said that either American foulbrood or European foulbrood has gained any headway or broken out in any new district or occurs to any unexpected extent in any quarter of the State; rather, these diseases are a lingering result of ancient or deeprooted infections, most difficult to eradicate totally and permanently, but which it is quite possible to suppress or to hold in check.

Mr. Ivan Rawson inspected in Berkshire County; Mr. Fred Challet served in the Connecticut Valley Counties; Mr. Edwards Thorne travelled Worcester County, Middlesex, and to the east; Mr. C. N. Ellis took the towns north and south of Boston; and Mr. O. F. Fuller worked southern Worcester County and the southeastern territory.

The beekeeping season has been profitable in many localities. Altho there was an unprecedented drought in much of the State this seems to have favored nectar production, both in quality and quantity. Some beekeepers procured exceptional crops. Most beekeepers averaged well. The honey exhibit at fairs this past fall was of a noticeably high grade. The juvenile competitive display judged by Dr. Gates at the Eastern States Exposition deserves particular mention and unstinted praise. A senior exhibit of equal worth would have been a doubtful possibility in Massachusetts ten years ago. These meritorious exhibits perhaps more than anything else measure the achievement and success of apicultural promotion and supervision.

The beekeepers in and about Attleboro, feeling that there is an unnecessary number of box hives in their district, have proposed legislation similar to that of New York and Pennsylvania restricting the use of any hive which shall not be capable of thorough inspection, enabled by the free removal of the combs. Similar legislation in New York State went into effect in 1923. As yet the results of this measure are not certain. It should be borne in mind, however, that thru the general educational policies of the department, beekeepers have been urged and assisted during the past ten years to do away with box-hive beekeeping. Thus to a certain extent, the aims of this legislation in a measure, have been fulfilled. It must be admitted however, that there are and probably will be for some time those who thru ignorance or tradition persist in maintaining bees in hives from which the combs cannot be removed. At the present writing it is yet too early to make any definite comments or recommendation for or against legislation requiring bees to be kept in hives with removable combs.

The beekeepers thru their several beekeeper societies have expressed repeatedly their satisfaction in the increased appropriation for apiary inspection in 1923. The same feeling prevails this year among the beekeepers. They desire that the appropriation for inspection work should be continued at \$2,500.

The apiary inspection was carried on under the direction of Dr. Burton N. Gates and his experience and thoroughness have been evident in the work accomplished.



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The Commonwealth of Massachusetts

ANNUAL REPORT

OF THE

DEPARTMENT OF AGRICULTURE

FOR THE

Year Ending November 30, 1924



DEPARTMENT OF AGRICULTURE, 1924

Commissioner of Agriculture

DR. ARTHUR W. GILBERT OF BELMONT

Advisory Board Appointed by the Governor and Council

EVAN F. RICHARDSON OF MILLIS, Term expires November 30, 1924.
LESLIE R. SMITH OF HADLEY, Term expires November 30, 1924.
PETER I. ADAMS OF HOUSATONIC, Term expires November 30, 1925.
HERBERT N. SHEPARD OF WARREN, Term expires November 30, 1925.
JOHN BURSLEY OF BARNSTABLE, Term expires November 30, 1926.
STUART L. LITTLE OF NEWBURY, Term expires November 30, 1926.

Organization of the Department

DIVISION OF DAIRYING AND ANIMAL HUSBANDRY—OSMAN M. CAMBURN OF ARLINGTON, *Director*
DIVISION OF INFORMATION—DR. CHARLES D. WOODS OF NEWTON, *Director*
DIVISION OF MARKETS—WILLARD A. MUNSON OF WALPOLE, *Director*
DIVISION OF ORNITHOLOGY—EDWARD HOWE FORBUSH OF WESTBOROUGH, *Director*
DIVISION OF PLANT PEST CONTROL—R. HAROLD ALLEN OF TAUNTON, *Director*
DIVISION OF RECLAMATION, SOIL SURVEY AND FAIRS—LESLIE R. SMITH OF HADLEY, *Director*

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The Commonwealth of Massachusetts

REPORT OF THE COMMISSIONER.

RECOMMENDATIONS FOR LEGISLATION.

I. Amendments to the Law on Plant Pest Control

At the time of the compilation of the General Laws there was no previous codification of laws concerning nursery inspection and the control of insect pests and diseases which attack agricultural crops, nursery stock, fruit trees and the like, because practically all these laws were adopted after the revision of the laws in 1902. When the laws on these subjects were codified as part of Chapter 128 of the General Laws, the language of some sections proved inconsistent and ambiguous, so that difficulties arose in the administration of these laws. It also appears that the codification omitted certain qualifying words in one section, apparently because it was supposed that these words were unnecessary, whereas in practice it proves impossible to comply with the section exactly as it is written. It is therefore recommended that Sections 22, 25 and 28 of Chapter 128 of the General Laws be amended so as to correct the present inconsistencies and ambiguities and to re-tore the language of the original statute.

II. Amendments to the Reclamation Law

Further experience with the administration of the law provided for the drainage and reclamation of wet lands has brought out certain deficiencies in the present language of the law which require improvement in order to make the law more workable. The proposed changes are largely in matters of detail affecting in most cases only a few words here and there. It seems unnecessary for this reason to go into each of these proposed changes in detail. Some important additions to the law to cover situations which interfere with the organization and operation of some districts are also recommended.

During the past year action by the State Reclamation Board has sometimes been delayed because it proved impossible to secure the attendance of both members for a meeting. Since there are only two members of the Board, no action can be taken unless both are present. It is therefore recommended that an additional member be designated by the Commissioners of Public Health and Agriculture, acting jointly. The term of this third member should be three years from the time of designation unless his designation is revoked by the two commissioners before the end of that period. It is believed that for the most effective conduct of the work of the Board this third member should not necessarily be a member of either of the two departments concerned, but should be selected by the two commissioners without restriction as to his qualifications. Since the work of the Board requires considerable time outside regular hours, because meetings of petitioners for reclamation of wet areas must usually be held in the evening, it is recommended that the members of the Board receive additional compensation for their services as such. As the law now stands the members of the Board receive no additional compensation.

Another situation that has given rise to numerous legal questions is the ownership of areas in certain marshes by the commonwealth, cities, towns and other districts. In its present form the law says nothing about membership by public authorities and makes no provision for the payment by these authorities of any share of the cost of district improvements. To meet such contingencies it is recommended that definite provision be made for membership in districts by the commonwealth, counties, cities, towns and other districts and for the payment by these public authorities of their proper share of the expense of district work.

Investigation of conditions affecting some areas for which petitions have been received has disclosed that the difficulties encountered by the proprietors of the proposed district areas can be solved without the organization of a district. Usually in such cases the proprietors need advice and some assistance from the Reclamation Board in order to do what is necessary. It is therefore recommended that in passing upon each petition the Board make a definite decision whether the organization of a district is necessary, and if the decision is that no district need be organized the Board would then have authority to act on behalf of the proprietors so far as may be necessary. When the Board decides that a district should be organized the requirements for organization and the method of forming a district are left the same as they now are except for changes in minor details as already mentioned.

CHANGES IN THE STAFF.

During the year the Department lost, through resignation, the services of Miss Helen W. Grant, who had been in charge of the Farm Labor Bureau for several years and had been engaged in other lines of investigational work. Miss Grant was first appointed to establish the farm labor service and her work in connection with it was of great value to farmers seeking help and farm workers seeking positions. She had also compiled each year the list of farms for sale in Massachusetts, which has proved of considerable value to persons wishing to sell or buy farm property. Miss Grant was not only a faithful and efficient employee but she possessed originality in working along new lines and her going was a decided loss to the Department.

DEVELOPMENT OF A NEW ENGLAND PROGRAM.

Much has been accomplished in the past year toward the further development of a New England food program. In January, 1923, the six New England governors called an important agricultural conference to consider the situation of agriculture in New England and to work out a ten year program. The conference selected a committee to carry on this work and since the time of the conference a widespread interest in the program has been developed.

It was finally agreed that the first necessary step was to reduce to writing a statement of the present situation, the agencies employed to further agricultural matters in New England and the ten year program worked out by committees at the original conference. A book of 273 pages was prepared with this object in view. It was written by some of the best specialists in New England under the general editorship of the writer. No state nor private funds were available for its publication, but one of the largest book publishers of national reputation was induced to undertake the work of publishing it. It is now on sale with the title "The Food Supply of New England." Its preface and table of contents follow:

Preface

This book gives a brief survey of New England agriculture with particular reference to the New England food supply. Much has been written about various phases of it, but this seems to be the first attempt to present the whole picture, although it is not intended to cover the subject exhaustively. The whole question is a complex one, and some of its phases are acute. In the presentation technical terms have been avoided.

In January, 1923, the governors of the six New England States called a conference in Boston for the purpose of beginning a concerted study of the whole food question. The conference set itself to take an inventory of the present situation and to lay out a ten-year program for New England agriculture. A summary of the programs formulated by each commodity committee forms one chapter of this book. The work of the conference is now being actively carried on by a Continuance Committee acting through a small executive committee. New England is one economic unit. It is logical that the various agencies of the six states should work together to solve the problem.

The executive committee of the conference authorized the editor to procure from persons qualified the various chapters presented herewith. I wish to acknowledge the assistance of the following persons in the preparation of this book:

R. Harold Allen, Director, Division of Plant Pest Control, Massachusetts Department of Agriculture; E. Eugene Barker, Ph.D., Former Assistant Professor of Plant Breeding, Cornell University; Dorothy H. Goodwin, Investigator, Division of Markets, Massachusetts Department of Agriculture; Sidney B. Haskell, Director, Massachusetts Agricultural Experiment Station; Joseph L. Hills, Ph.D., Director, Vermont Agricultural Experiment Station; Whitman H. Jordan, Ph.D., Former Director, New York Agricultural Experiment Station, Geneva; John W. Plaisted, Chief Inspector, Massachusetts Department of Agriculture; William J. Spillman, Ph.D., Farm Management Specialist, United States Department of Agriculture; Charles D. Woods, Ph.D., Director, Division of Information, Massachusetts Department of Agriculture.

If this book succeeds in arousing a greater public interest in the New England farmer and his problems and their relationship to our prosperity and our food supply, a great public good will have been accomplished.

ARTHUR W. GILBERT, *Editor.*

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Addendum

DAYLIGHT SAVING.

In accordance with the recommendation made in my last annual report, the 1924 session of the General Court passed an act to provide for submitting the question of daylight saving to the voters at the state election. This act was Chapter 210 and reads as follows:

An Act to Ascertain the Will of the People with Reference to the Retention of the Daylight Saving Law, so-called.

Be it enacted, etc., as follows:

For the purpose of ascertaining the will of the people of the commonwealth concerning the continuance or repeal of the daylight saving law, so-called, the secretary of the commonwealth shall cause to be placed on the official ballot to be used at the next state election the following question:—"Shall daylight saving be retained by law in Massachusetts?" The votes upon said question shall be received, sorted, counted and declared, and copies of records thereof transmitted to the secretary of the commonwealth, laid before the governor and council, and by them opened and examined, in accordance with the laws relating to votes for state officers and copies of records thereof, so far as such laws are applicable. The governor shall make known the result by declaring the number of votes in the affirmative and the number in the negative, and shall transmit a statement of such result, in writing, to the general court during the first week of the session in the year nineteen hundred and twenty-five. If it shall appear that a majority of said votes is in the affirmative, it shall be deemed and taken to be the will of the people that the daylight saving law, so-called, shall be continued in force, and if a majority of said votes is in the negative, it shall be deemed and taken to be the will of the people that said law shall be repealed.

The agricultural and other organizations in Massachusetts which believed in the repeal of the Daylight Saving Act vigorously set forth their views to the voters of the Commonwealth. The Commissioner of Agriculture felt that in his official position he would not be justified in taking an active part in the campaign for repeal of the law, but after urgent and repeated requests from farmers' organizations he made a careful study of the effect of daylight saving upon the farming business of the state and presented his conclusion to the public, believing that he was acting consistently with one of the most important of his statutory duties, namely, the encouragement of agriculture in the Commonwealth. The vote on the question at the November election, as returned by counties, was as follows:

<i>County</i>	<i>For</i>	<i>Against</i>
Barnstable	2,505	4,371
Berkshire	12,493	14,227
Bristol	42,139	27,144
Dukes	348	744
Essex	62,012	54,088
Franklin	4,185	8,294
Hampden	26,096	34,210
Hampshire	6,244	10,810
Middlesex	123,568	87,909
Nantucket	374	302
Norfolk	39,143	28,519
Plymouth	18,330	23,412
Suffolk	102,771	77,384
Worcester	52,031	55,345
Total	492,239	426,759

The vote favoring repeal of the Daylight Saving Law was larger than the most vigorous opponents of daylight saving could even have hoped to secure in an industrial state. It showed conspicuously the number of people who believed that the best welfare of the whole community is served by not injuring the business of the producer of food. There were, of course, other reasons which prompted the large vote against the law.

The geographical distribution of the vote is illuminating. The industrial cities generally favored the law but there were some conspicuous exceptions, and in several of the larger cities, such as Worcester, the vote was very close. The country districts almost invariably voted against the law, a few towns of moderate size which are primarily industrial being the only exceptions. Practically all the cities and towns in the Boston Metropolitan District favored the law, but

some by a much smaller margin than was generally expected. If the vote could have been taken by area and not by population the result would have been against the law because a much larger part of the area of the state was against the law than for it.

THE UNITY OF AGRICULTURAL ORGANIZATIONS.

During the year the tendency of all agricultural organizations in the state to work closely together has become even more marked than in the past. These organizations are more and more getting into the habit of asking and offering help to one another, and are strengthening all their activities greatly thereby. It is gratifying to know that the Department has been of marked assistance to many of them by furnishing information and aid of various kinds and by acting as headquarters for their contacts with other state agencies. The assistance previously received from the Boston Chamber of Commerce, the Massachusetts Chamber of Commerce, the Associated Industries and other non-agricultural organizations has been continued. A number of local chambers of commerce co-operated with the Department in arranging window displays of home-grown apples in the various cities and large towns throughout the Commonwealth. Several of these local bodies supplemented the prizes offered by the Department for these displays with prizes of their own.

In recent years it has been the practice of the leading agricultural organizations of the state to hold a meeting during the fall for the purpose of discussing legislation likely to be offered at the next session of the General Court. This practice was continued in 1924, the meeting being held at Worcester. These meetings do not commit the organizations represented to any particular program, but keep them informed as to propositions likely to be presented at the coming session and as to the attitude of other agricultural organizations toward these propositions.

LEGISLATION.

The number and importance of legislative acts affecting agriculture which were passed during the session of the General Court was rather less than in preceding years. The recommendations of the Department set forth in the annual report for 1923 were all adopted substantially in the form in which they were presented. The resulting acts (1) made important amendments to the apple grading law, especially by extending some of the requirements of the law to open packages, (2) increased the authority of the Department to enforce the law regarding substitutes for butter, (3) extended the period of use for unmarked milk cans and containers used in the purchase or sale of milk or cream at whole-sale until January 1, 1926, (4) authorized the completion of the drawings for the report on birds of the Commonwealth and provided for the publication and distribution of the first volume of this report, and (5) made certain perfecting amendments to the Reclamation Law, mainly to authorize proxy voting at reclamation district meetings.

Other important acts had to do with the following subjects: (1) the establishment of Penikese Island as a refuge and sanctuary for wild birds, (2) the identification of cattle which have reacted to a tuberculin test, (3) restoration of compensation by the Commonwealth when cattle are killed where they are found to be tuberculous by inspection and not by tuberculin test, (4) prohibiting admission of uninspected cattle to be used for dairy purposes, (5) providing for registration of ice cream cans and containers, (6) authorizing the Department of Public Health to make rules and regulations and establish standards for the production, processing and sale of Grade "A" Milk, (7) providing for a referendum on daylight saving. This act and the results of the vote taken under it have already been described, (8) providing for the sale of the land and buildings at the market garden field station at North Lexington and the reestablishment of the station at Waltham, (9) authorizing the issuance of permits to hunt, catch or kill ruffed grouse in certain districts. This last act was passed as a result of complaints of damage by ruffed grouse to fruit trees.

FRUIT GROWING IN MASSACHUSETTS.

In most respects fruit growing in this State is a great new industry. Of course fruit has been grown within the state from the very earliest Colonial days and many of our best varieties of fruit, including the Baldwin apple, Concord grape and Bartlett pear, were originated here. Even as previously conducted the industry has usually been profitable, but a renewed interest and much improved methods are rapidly putting this branch of agriculture on a par with other great industries of the Commonwealth. The following extract from a paper by the secretary of the Massachusetts Chamber of Commerce is significant:

"The business of raising and selling apples in Massachusetts has just begun as a real business. For many years the natural markets for our wonderful apples have gradually been taken away from our growers by the competition of other sections where the advantages of up-to-date cultural methods and of grading and packing have been more readily grasped and applied. The time has come to regain the lost ground and encourage our apple growers in developing this business to its full possibilities.

"Some interesting figures were recently given out by Dr. A. W. Gilbert, State Commissioner of Agriculture, regarding apple growing in Massachusetts. He stated that whereas the average per acre value of all crops grown in this state during a five year period, 1917 to 1921, was only \$49, the average per acre value of the apple crop was about \$86. Obviously apples are among the crops of highest economic value. By way of contrast he stated that in Kansas, Iowa and Wisconsin the average per acre value of all crops was about ten, sixteen and twenty dollars respectively.

"Speaking of apple culture as a business,' Dr. Gilbert further stated, 'it is a large industry. In 1923 Massachusetts grew three million bushels of apples on a million and a quarter of apple trees of bearing age which occupied forty-eight thousand acres of land. Those apples were worth in December of that year, according to the Federal Bureau of Agricultural Economics, four and a half million dollars. For the five years, 1917 to 1921, the apple yield averaged two and a half million bushels with a farm value of four and one-eighth million dollars.'

"Those in a position to know say that the Massachusetts grower now furnishes 36% of the apples distributed through the Boston Market. By encouraging a steady improvement in the methods of growing, packing and distributing our Massachusetts apples the time should come when the most discriminating trade will demand and be able at all times to obtain the local product."

POULTRY RAISING.

The business of poultry keeping has also shown marked advancement during the last few years. The association of certified poultry breeders extended its operations during the year and met with marked success. Other poultry associations have become more active and this increased activity has been evidenced by larger poultry shows and improvement in the quality of exhibits of poultry at these shows and at our agricultural fairs. Although our poultry producers apparently must meet somewhat higher costs of production than producers in other sections, their situation in close contact with the best markets in the country and their unrivalled opportunity to produce high quality eggs and meat for these markets give them a marked advantage over their more distant competitors.

BEEF AND TOBACCO.

Our tobacco producers have recently been confronted with a partial failure of their supply of natural fertilizers, owing to the rapid decrease in the number of horses kept in our cities and large towns. So far no substitute for the lost supply of stable manure has been found. A suggestion has been made that many tobacco growers might readily feed beef cattle during a part of the year and thus supply themselves with a considerable quantity of good natural fertilizer. This project is being worked out by our Division of Dairying and Animal Husbandry.

IDENTIFICATION OF MASSACHUSETTS PRODUCTS.

The studies made by the Division of Markets have indicated that producers of farm products in Massachusetts have not reaped all the benefit that they should from their ability to deliver fresh goods immediately to the markets of the state. The average shopper is not able to distinguish between home grown products and products from a distance unless the home grown products can be positively identified. It is advisable, therefore, that some action be taken, possibly by the appointment of a special commission to work out methods of identifying the products of Massachusetts farms when they come to the markets of the state.

EUROPEAN CORN BORER.

The damage done by this pest has not in most places been more serious than it was in 1923. Most farmers have complied with the law requiring the destruction of corn stubble before December 1. Since a general warning was given last year after the passage of this law by publication and by personal visits to the great majority of farmers in the infested area, prosecutions will be undertaken during the coming winter against persons who raised corn during the growing season and did not dispose of the stubble within the prescribed time, as the law requires.

CONCLUSION.

The Commissioner feels that during the year marked progress has been made in meeting the problems of Massachusetts agriculture and in administering the laws for which the Department is responsible. A large measure of credit is due the members of the staff of the Department for their effective work toward the accomplishment of these results.

Respectfully submitted,

ARTHUR W. GILBERT, *Commissioner*.

REPORT OF THE DIVISION OF DAIRYING AND ANIMAL HUSBANDRY.

INSPECTION WORK.

During the past year, the dairy inspectors of the Division have made nine thousand, five hundred and sixty-three inspections of restaurants, hotels, retail stores, boarding houses and vehicles. One hundred and sixty-nine samples were taken, most of them purchased. From evidence secured from these inspections, twenty-three cases were entered in court, resulting in twenty-two convictions.

The Division has continued the policy of prosecuting only major cases where manifestly violation of the law has been either willful or persistent or both. These minor cases of technical violations have been corrected, mostly without prosecution, through helpful inspection and advice.

*Report of Inspections.**Twelve Months Ending November 30, 1924.*

	<i>Total Inspections</i>	<i>Inspections without samples</i>	<i>Inspections with samples</i>	<i>Total samples taken</i>
1923				
December	318	296	22	22
1924				
January	733	697	36	46
February	1,198	1,166	32	32
March	1,300	1,273	27	27
April	712	703	9	9
May	1,010	1,006	4	7
June	770	763	7	7
July	667	665	2	2
August	454	452	2	2
September	325	325	0	0
October	1,215	1,204	11	11
November	861	859	2	4
TOTALS	9,563	9,409	154	169

Summary of Inspections.

Total number of inspections, 9,563.
 Number of inspections where no samples were taken, 9,409.
 Number of samples taken—milk, butter and oleomargarine, 169.
 Number of samples taken during inspections, 154.
 Number of cases in court, 23.

Court Cases.

The charges in the several cases prosecuted in court during the year were as follows:

Selling oleomargarine in an unmarked wrapper, 5.
 Selling oleomargarine from an unmarked vehicle, 3.
 Selling oleomargarine in imitation of yellow butter, 7.
 Conveying oleomargarine in vehicle for purpose of sale without having registered with the local milk inspector, 2.
 Use of word "butter" on cartons of oleomargarine, 1.
 Selling oleomargarine in a store without having registered, 1.
 Selling oleomargarine from a box not properly marked, 1.
 Selling oleomargarine from a store in which was not conspicuously posted a sign, bearing in 4-inch letters the words "Oleomargarine Sold Here," 1.
 Selling milk from which a part of the cream had been removed, 1.
 Selling skimmed milk to which a foreign fat had been added, 1.

Summary of Court Cases During the Twelve Months Ending November 30, 1924.

<i>City or Town (Tried in same place)</i>	<i>Month</i>	<i>Number</i>	<i>Law Violated</i>	<i>Courictions</i>
New Bedford	January	9	Oleomargarine	9
Fall River	January	1	Oleomargarine	1
Lowell	March	1	Oleomargarine	1
Lowell	March	1	Milk	1
Cambridge	March	1	Oleomargarine	1
Lowell	April	3	Oleomargarine	3
Boston	May	1	Filled milk	0
New Bedford	June	4	Oleomargarine	4
Waltham	September	2	Oleomargarine	2
		23		22

DAIRYING.

The number of dairy cows has declined about four per cent from the number reported in 1923. However, the 157,597 cows reported is more than eight per cent greater than the low point in 1915.

During the past year the general dairy market has been lower. The price of fluid milk dropped very low in the early summer. The milk market continues lower than for the previous year. Two cooperative dairy systems have been organized. These systems sell the product of their members only at wholesale and have experienced considerable difficulty in placing all of it. The members are loyal to their organizations even in the face of the low returns. These low market prices, together with higher feed prices, are depressing to dairymen generally. To meet these conditions farmers are selling the lower producing cows. This condition has also affected the pure bred sales. A few large herds have been dispersed, while other new herds are being assembled. Taken as a whole, now is a good time to cull out the unprofitable animals and replace with pure bred. At the agricultural fairs the quality of animals exhibited is improving, showing that the trend is toward better producers rather than large numbers alone.

BOVINE TUBERCULOSIS.

The control of bovine tuberculosis has been moving forward. There are 212 herds fully accredited containing 6,457 cattle. The total number under supervision is 1,111 herds, containing 19,495 cattle. There are 745 herds with 12,487

cattle once tested and found free of reactors. The waiting list is made up of 150 herds containing almost 2,400 cattle. This is an advance during the past year.

DEMONSTRATION SHEEP FARMS.

This year interest in sheep has been noticeably more active than for several years. The price for early spring lamb has been attractive, as well as an advancing price for wool.

The six Demonstration Sheep Farms report this keener interest. Seven hundred and eighty-five people have called at the farms. Demonstrations have been held at forty-eight different times, in shearing, castrating, docking, worm treatment and disease diagnosis. Outside calls have been made by the farm managers at five hundred and twenty-nine different times. These calls have been made to assist sheep raisers with their problems. The shearing machines have been used to clip even a greater number of sheep than before.

Pure bred rams have been located for several grade flocks as well as better rams for pure bred flocks. More calls have come in for assistance in locating good grade sheep to establish new flocks. Much interest is apparent in running flocks in orchards. More and more farmers are looking to sheep as an additional side line to diversify their farming operations.

The market for early spring lamb was unusually good and held out for a longer period of time. This year more farmers raised lambs for the early market. Reports indicate an increased supply of this high quality lamb for the early market of 1925.

Again in 1924 the growers made up small pools of grease wool. These pools totalled over 27,500 pounds. The sales made early in the year netted 38 cents to the growers. Those who held for the advance received net at the farm, 53 cents per pound. The all virgin wool blankets have been in good demand. The purchasers are more than pleased with the quality and opportunity to buy direct from the wool growers.

EXHIBITS AND MEETINGS.

The exhibit at the Eastern States Exposition was a story of Massachusetts Dairy Industry. The main building was devoted entirely to this special exhibit. A large map showed the source of the milk supply for the several large cities. Maps and pictures told the story of the extent of the raising of pure bred dairy animals. The importance of feeding leguminous roughage, fully matured ensilage and a liberal amount of a balanced ration were clearly demonstrated with charts and field specimens. The annual production of milk of a profitable cow was shown by a pile of milk bottles with a line dividing off the point at which the production of an average cow would come. Practical milk cooling devices were shown in a small dairy house. A long mechanical exhibit portrayed the various stages of milk from producer to consumer. In the center of the building a model milk plant was in operation, showing the pasteurizing, cooling and bottling of milk. An ice cream machine and storage room was shown.

The mechanical exhibit from producer to consumer was also shown at the Barre and Brockton Fairs.

During the year twenty-seven meetings were attended, at seventeen of which members of the division gave talks on agricultural subjects. Members of the division have served on various committees of active agricultural organizations.

POULTRY INDUSTRY.

Compared with industrial conditions in Massachusetts, our poultry industry is fairly prosperous, notwithstanding the fact that feed prices have been gradually on the increase from the beginning to the end of the year, while prices for live poultry and eggs have averaged about the same as those for 1923. There have been seasonal variations in the prices of both eggs and poultry, but these have not materially changed the general average. As a rule a decided and rapid increase in feed prices causes some poultrymen to either cut down operations or

go out of business altogether. Not many have given up poultry work during the past year, but those who have, did so because of a poorly organized project rather than because of the increase in feed prices. They attempted too much on limited capital, limited area of land or limited knowledge and experience. The tendency from now on will be for the poultry industry to gradually get into the hands of those who are permanently engaged in the business and there will be fewer adventurers of the old-time character.

Our poultrymen, especially in the western part of the state, have experienced some competition with Pacific coast eggs, but conditions have not been serious. We are beginning to see that in order to keep our present premium trade we must breed and work for superior quality; that is, our poultrymen should endeavor to make the *average* quality of eggs and poultry equal to the *best* of those that are shipped in.

During the past year there has been an improvement in economic production, more efficient methods in controlling infectious diseases, and in breeding for increased fecundity. These three, together with the production of products of superior quality already mentioned, form the four cornerstones of our poultry industry.

The progress along the line of disease control is most encouraging. The Massachusetts Association of Certified Poultry Breeders has been formed and is now functioning. This organization aims to protect its members against unscrupulous competitors with inferior stock and to distribute throughout the state disease-free, high-producing stock. Every effort possible should be made to foster this organization.

The duck industry is in about the same position as a year ago. It is in the hands of strong and efficient men and present production practically takes care of the demand.

The condition of the Massachusetts turkey industry indicates a vast improvement. Data from the United States Census of 1910 give 2,645 turkeys in Massachusetts, while in 1920 there were 4,808 turkeys reported. This is an increase of 81 per cent. General observations indicate that the increased turkey production has been greater since 1920 than during the ten year period mentioned. The increased production is due almost wholly to improved methods in controlling blackhead.

REPORT OF THE DIVISION OF INFORMATION.

The Division of Information collects and compiles agricultural information and statistics; prepares, edits and distributes the publications of the Department; has charge of the Department library; furnishes publicity material to the press; answers inquiries on agricultural matters; acts as an advertising and sale agency of farms; maintains an employment bureau of farm labor; cooperates in an advisory capacity with the State departments having charge of institutions which maintain farms; and maintains close relations with State organizations that have to do with agricultural education and with the departments of the Commonwealth which have agricultural activities.

AGRICULTURAL STATISTICS.

The collection of agricultural statistics has been chiefly concerning crop production and live stock in cooperation with the New England Reporting Service of the United States Department of Agriculture and with the Division of Dairying and Animal Husbandry of this Department. The crop and animal statistics for Massachusetts for 1923 were published jointly with the other New England States in a publication issued from the office of the New England Crop Reporting Service. Some other statistics have been gathered but their publication has not been authorized.

PUBLICATIONS.

Adhering to the policy which the Commission on Administration and Finance established when they came into office relative to publications by this Department, no publication which could be refused has been accepted by them for publication.

List of Publications in 1924.

Department publication No.

- 127 Rules and regulations governing the allotment of State money through the agricultural societies and poultry associations. 4 pp.
 128 Annual report of the Commissioner. 34 pp.
 129 Bird migration and distribution during year ending November 30, 1923. 8 pp.
 130 White pine blister rust. 8 pp.

Many mimeographed publications on various topics have been issued. These are of a fleeting nature and serve as partial substitute for the publications on agricultural subjects for which the farmers of the State make request. The mimeographed market reports keep the market men and growers in contact with the Division of Markets of the Department and the weekly L.O.I. mimeographed series of about 500 words each serve as a medium for making public some of the more general activities of the Department. These go to all of the papers of the State, to Grange lecturers, and all agricultural instructors in the State.

THE LIBRARY.

As stated in the two last preceding reports the Library has largely been combined with and shelved with the State Library. The subject index cards have been kept up to date.

DISTRIBUTION OF AGRICULTURAL INFORMATION.

The usual matter relative to Department activities has been furnished to the press. The answers to inquiries on agricultural matters from correspondents, while time consuming, are apparently helpful and appreciated. From a supply of Extension Service Publications furnished by the Massachusetts Agricultural College and of Farmers' Bulletins of the United States Department of Agriculture supplied to us through the courtesy of the United States Senators and Members of Congress from Massachusetts, we are able to furnish correspondents with both College and Federal publications on animal industry, farm home, farm labor, field and garden crops, orchard management, poultry and allied subjects.

LISTING AND ADVERTISING MASSACHUSETTS FARMS FOR SALE.

This work has been continued with as much efficiency as has been possible without permit to publish in bulletin form the description of the farms listed with the Department. Mimeograph descriptions have been used as much as is practicable. It is difficult to very accurately estimate the number of farms sold through the activities of this office. But letters of appreciation indicate that many people find the activities useful.

MASSACHUSETTS STATE INSTITUTION FARMS.

The cooperative work with State and to some extent County institution farms begun in 1922 has been continued. The relations with the farms connected with the State Departments of Correction, Public Health and Public Welfare are very close.

This year it has been possible to make a beginning in work combining the best features of the cow testing association with registers of performance of the cattle clubs. This with the institution herd books, which have been in operation for about two years, make toward unity of the dairy work at the dozen farms and the over eight hundred animals. It is hoped that it will be practicable to continue this work, which will add much to better breeding and herd development.

REPORT OF THE DIVISION OF MARKETS.

The work of the Division of Markets has been included under the same projects as during previous years. These projects are continuously growing in scope as a result of demands for enlarged and more detailed services.

A report of activities for the year is herewith submitted.

WHOLESALE MARKET NEWS.

The outstanding feature of the market news work of the Division this year has been the issuing of a Special Apple Market Report. This has been prepared at the request of the fruit growers' organizations of the State. It has been sent out twice a week. An inquiry among the growers as to the value of these reports, and also asking for criticisms and suggestions, has brought a large number of replies which have uniformly commended the news which is contained in the releases. The reports have been commented upon favorably at fruit growers' meetings. Requests have been made that the reports be continued another year. The general scope of these reports has covered price quotations and comment on market conditions at Boston, Worcester and Springfield, supplemented by timely information on receipts, storage holdings, export movement, etc.

Producers are realizing that a more complete understanding and knowledge of the factors which operate to determine the selling price of their goods is necessary to a profitable return for their labor. The market reports issued by the Department give accurate information on market price, supply, demand and movement of agricultural products.

Market reports are published and sent out from the Boston office, 136 State House; the Worcester office, Worcester County Extension Service, 11 Foster Street; and the Springfield office, Hampden County Improvement League, 244 Main Street, according to the following daily schedule of reports:

Monday, 11 A.M. Boston Produce Market Report issued.¹ Worcester Produce Market Report issued. Springfield Produce Market Report issued.

Tuesday, 11 A.M. Boston Produce Market Report issued. Worcester Produce Market Report issued. Springfield Produce Market Report issued. 3 P.M. Special Apple Market Report issued.

Wednesday, 11 A.M. Boston Produce Market Report issued. Worcester Produce Market Report issued. Springfield Produce Market Report issued.

Thursday, 11 A.M. Boston Produce Market Report issued.² Worcester Produce Market Report issued. Springfield Produce Market Report issued.

Friday, 11 A.M. Boston Produce Market Report issued. Worcester Produce Market Report issued. Springfield Produce Market Report issued. 3 P.M. Special Apple Market Report issued.

Saturday, 11 A.M. Weekly summary of Springfield Produce Market issued. Weekly summary of Worcester Produce Market issued. 11.30 A.M. Grain, Feed, Hay and Straw report issued at Boston.

The sources of information from which the reports of the Division are prepared, are as follows:

I. Local:—

1. Interviews with growers on the Farmers' Market, receivers, wholesalers, jobbers and buyers on the wholesale fruit and vegetable market for market information on condition, volume and price.
2. Reports of daily arrivals including states of origin by railroad, obtained by calling railroad offices by telephone.
3. Weather report, obtained from local office.
4. Boston report on prices and amounts of "shipped in" fruits and vegetables received from U. S. Bureau of Agricultural Economics. Prices of "shipped in" products in other cities obtained by direct interviews.

¹The Worcester and Springfield offices publish reprint of Hay, Grain, Feed and Straw Report issued Saturday previous by Boston office.

²Report on weekly market conditions on Brighton Livestock Market published with these reports.

5. Brighton Livestock Market received through Boston office U. S. Bureau of Agricultural Economics.
6. Prices on Boston Auction Market received through local company.
7. Figures on storage holdings, receipts and deliveries from storage obtained from Quincy Market Cold Storage Co. and Commonwealth Ice and Cold Storage Co.
8. Crop Reports N. E. Cooperative Crop Reporting Service, Wakefield, Mass.
9. Exchange of market information between Boston, Worcester and Springfield offices.

II. Distant:—

1. Report on hay, straw, grain and feed market received from U. S. Bureau of Agricultural Economics, Washington, D. C.
2. Crop reports released from U. S. Department of Agriculture, Washington, D. C.
3. Export market on apples from U. S. Department of Agriculture, Washington, D. C., and local agency.
4. Canadian report on foreign market by wire from Canadian fruit commissioner.
5. New York market on apples through local office, U. S. Department of Agriculture, Bureau of Agricultural Economics.

METHODS OF DISSEMINATING MARKET REPORTS.

All produce market reports, including the Boston Retail Price Report, are mimeographed and sent to subscribers, who pay a small fee covering the cost of mailing.

The Worcester Gazette and the Worcester Telegram carry the Worcester Produce Market daily, the retail report on Wednesday and Friday, and the weekly summary of the produce market on Saturday.

The Springfield Union, Springfield Republican, and Daily News carry the Springfield Produce Market daily, the retail report on Wednesday and Saturday, and the weekly summary of the produce market on Saturday.

The Boston Farmers' Produce Market Report is carried on the afternoon wire of the Associated Press and published in the New Bedford Morning Mercury, the Lowell Courier-Citizen, and the Manchester Union.

The Worcester, Springfield and Greenfield papers carry the Special Apple Market Report. Daily at 12.45 P.M. Amrad Broadcasting Station, Medford Hillside, has broadcasted the Boston Produce Market Report.

Westinghouse (WBZ), East Springfield, broadcasts the Springfield market at 12 M. daily and the Boston market of the day previous.

Sherer's Department store, Station WBDH, broadcasts the Worcester market at 11.45 A.M. daily.

MARKET NEWS SERVICE FOR HOUSEWIVES.

Even the consumer who buys in small lots for the family table may profit by keeping in mind the seasons of greatest supply. These are often also the times of most desirable quality and usually of lowest prices. To consume, preserve or store produce at the season of its greatest natural abundance is good policy for enjoyment, health and economy.

The retail price report, published weekly by the Division, enables housewives to buy food to advantage. The information is mailed to 1 090 housewives, 65 domestic science teachers, and printed in newspapers. During the past year consumers market information was broadcasted from the Edison Station WEEL, Boston, every Wednesday evening at 7.50 P.M.

Special news articles have informed Boston, Worcester and Springfield consumer of new fruits and vegetables in their season, when the height of the shipping season was at hand and lower prices expected. Suggestions for canning and general market information on supply and prices were covered in these feature articles. This benefits not only the consumer, but the producer and distributor as well.

CROP REPORTING.

Of the two price determining factors, supply and demand, supply is by far the more important. On the average, the demand for agricultural commodities is fairly stable, although it is not so stable that it is unnecessary to study it closely in order to detect changes. Accordingly, just to the extent that we regard demand as stable, relative supply becomes the principal price determining factor.

Crop statistics constitute a basis for a market reporting program. Complete and accurate crop information both currently and for a period of years is necessary to the individual who has something to sell or to the agency rendering marketing service to him.

Because of the close and fundamental relationship between crop reporting and marketing, the Department of Agriculture has entered into an agreement with the United States Department of Agriculture. "The objects of the agreement are to conduct a cooperative crop reporting service, to improve and extend it to special local needs and to coordinate, so far as practicable, all efforts directed to providing such service, thereby avoiding duplication of work by the parties."

Crop reports reach our farmers through a mimeographed summary known as the New England Crop Report, which is enclosed with or quoted from on the daily reports of the Division of Markets. The report not only deals with the local situation, but also covers crop conditions in competing areas. Crop reports are also sent out through the press and by means of radio.

The subject matter of these reports may be classified under the following headings: feed crops, potatoes, apples, cranberries, milk, livestock, certified seed potatoes, maple products, onions, sweet corn, tobacco, and truck crops.

The crop reporting service, in addition to the regular work, has taken a census of the Massachusetts onion acreage and computed the yields, production, prices and storage. A census was also taken of the tobacco acreage and average yields by varieties. A complete report was made on the hail damaged tobacco for the year. A census of the Massachusetts cranberry bog acreage was made. This report was classified by varieties and by the amount of bog which could be flowed. The base figures for commercial apple crop in Massachusetts were analyzed and a new figure arrived at.

ROADSIDE MARKETS.

Extensive investigations of roadside marketing were made by the Division at the request of 200 roadside owners. A report on this subject has been prepared and distributed. Farmers are finding that the roadside stand is a very satisfactory method of selling their produce. On Saturday or Sunday an average business amounts to \$35., reaching its height on Columbus Day, when certain stands sell as high as \$150. worth. The seasonal sales vary from a few hundred dollars for small stands, to as much as \$12,000. for the largest. The average of seasonal sales is between \$1,500-\$2,500.

A few years ago there were only occasional "For Sale" signs on the roadside, usually offering fresh eggs. The increasing use of the automobile, aided by improved roads, has changed the opportunities available to the small farmer and offered new methods of marketing to the large growers. Roadside selling has prompted growers to cultivate new products. Instances are common where farmers keep bees, poultry and small fruits simply because they have found a way to dispose of small lots of produce without a trip to market.

Early attempts at selling by sign advertising did not produce the results which the exhibition of fair samples of products within easy view of the automobilist has accomplished. Placards specify the prices on most of the stands. Roadside markets are becoming more popular with car owners, which has resulted in keener competition.

Massachusetts has nineteen trunk lines and many other good roads extending from her cities into productive farming sections, and bordering on these roads one can count as high as forty roadside stands within six miles, which is sufficient evidence that some farmers have found a method of disposing of their

products at home. Roadside markets are an economical asset to the State when they are conducted by actual producers. This method of selling eliminates transportation and distribution charges and enables both the grower and consumer to profit thereby. Moreover, the consumer has his choice of a supply of fresh products that have not been bruised by a trip to market.

Prices received during the past at some roadside markets were checked by the Division and found to average those received in city wholesale markets. A common mistake often made is the belief that transients are glad to buy any grade of produce direct from the farm even at an increased price over that charged in the city stores. Transactions of this kind discourage roadside buying among the public. It is the repeat orders that establish the business and insure the success of the enterprise.

APPLE GRADING LAW.

Four important amendments (Chap. 119, Acts of 1924) were made to the Apple Grading Law. The first makes possible the use of attractive labels in marking packages under the law. Formerly only a black and white stencil could be used. The second fixes the time when closed packages should be branded, namely, "At the time of packing, repacking or closing." The third brings under the provisions of the law open packages of apples marked according to the standard. The fourth prohibits the practice of "overfacing" open as well as closed packages of apples. The act was approved March 20, 1924.

Because of these important changes it became necessary to modify the rules and regulations governing the law. Practical operation under the regulations since 1915 also brought out the necessity for some changes. Six meetings (Shelburne Falls, Springfield, Worcester, West Acton, Newburyport and Boston) were arranged for the discussion of the amendments.

On May 13th the commissioner of agriculture, under authority granted by section 110, Chapter 94, General Laws, modified the rules and regulations. The new regulations represent the average opinion of the fruit growers of the state as expressed at these meetings. Two thousand copies of the amended law and regulations have been distributed to the fruit growers and trade.

During the summer and fall a series of meetings were held for the purpose of discussing and demonstrating the grading of apples in order that everyone might have an opportunity to become acquainted with the provisions of the law and also meet the men who administer its provisions. On Sept. 12th a group of county extension leaders met at the farm of Mr. John Chandler, Sterling Jet., Mass., in order that they might become sufficiently acquainted with the details of the law to answer the questions of the apple growers in their counties.

At the request of the county extension service workers of the Massachusetts Agricultural College, meetings were held in the following places: Middlesex County—Billerica, Westford, Groton, Littleton, Stow, Marlboro; Worcester County—Lunenburg, Westboro; Franklin County—Colrain, Heath; Hampden County—Granville, East Longmeadow. Exhibits of the standard grades were shown at the New England, at Worcester, Deerfield Valley, Charlemont, Franklin County at Greenfield, Acton, Groton, Barre, Brockton, and Segreganset fairs. Over 200 growers by actual count attended the demonstrations, and it is estimated that over 200,000 people witnessed the exhibits of grades.

The opinion of the trade and growers is unanimous that the grading and packing of local apples has never been as good as this year. Two factors have undoubtedly contributed to bring this about, the unusually good quality of the fruit, and the law which has forbidden "overfacing" or "deaconing" of all packages. The Division has been particularly active in its educational program on apple grading this year.

PRODUCE MARKET STUDY.

The farther we progress from the barter system to specialization in marketing, the greater becomes our interest both as producers and consumers in the efficiency of the distribution system. Massachusetts is concerned with her problem of city marketing not only because 90 per cent of her population is urban and must

therefore pay for the cost of distribution in its food bill, but also because the producers are benefited by efficient distribution methods.

It has been the practice of the Division to conduct studies on the various phases of distribution in order to shed light on the facts involved. There is under way a study on the "Cost of Distributing Selected Farm Products Based on a Retail Unit," which is being conducted cooperatively by the Massachusetts Department of Agriculture and the United States Bureau of Agricultural Economics.

As a part of the general survey of the New England milk market situation, a study has been continued to establish the importance of the various factors influencing the demand for milk in Boston with special attention to advertising and publicity.

In order that the trend of the greenhouse vegetable business might be analyzed statistically, a study has been made of the trend in the cost and selling price of garden truck to greenhouse operators located in the vicinity of Boston. A summary has been prepared and distributed to greenhouse operators, explaining the results and illustrating the work by charts. No attempt will be made here to give the complete findings. It may be stated, however, that the greenhouse operator is working under a handicap of high costs, especially labor costs.

Massachusetts producers are evidencing an increased interest in the competition which they must meet in their markets. A research project entitled "Competition Between Areas Supplying Apples, Onions, Lettuce, and Other Products to the Boston Market" is now being conducted cooperatively with the United States Department of Agriculture. Reports for most of the important fruits and vegetables on the source of supply, the amounts received, period of receipts, shipping periods of competing areas, trend of acreage and production in these areas, and other pertinent facts relative to competition have been prepared. The story of the sources of supply, the amounts shipped to Boston and the periods of supply has been prepared in graphical form for the summer, fall and winter supply of apples, for asparagus, and for strawberries. These reports have been distributed to those interested in the marketing of these commodities.

As practically one-third of the family budget is spent for food, and we now depend largely upon areas outside of Massachusetts for our food, it is of great importance to us to know of the sources of supply. Pertinent facts regarding all food commodities coming into our cities are discussed in the Boston Food Supply Bulletin, published by the Division. It is interesting to note that it takes 50,000 carloads of fruits and vegetables to supply Boston and its distributing area for one year. Of this amount New England contributed 18,000 carloads, or about 35 per cent. If we consider only the crops that can be grown in Massachusetts, we find that this state supplies but 25 per cent of the Boston market requirements. Practically all meat and meat products, as well as poultry and poultry products, originate from sources outside of Massachusetts. A large supply of our butter and cheese comes from outside of New England. We depend upon practically every state in the Union and fifty foreign ports for our fruits and vegetables, grain, meat, eggs, butter and cheese.

PUBLICITY AND ADVERTISING.

During New England Week (Sept. 15-20) the Division, in cooperation with the Boston Chamber of Commerce, aroused considerable interest among fruit growers, commission men, retailers and consumers in New England grown agricultural products.

A market window display contest featuring apples was conducted in Brockton during the Fair Week by the Division in cooperation with the Brockton Chamber of Commerce and Plymouth County Farm Bureau. Eighteen stores competed and ribbon prizes were awarded by the Massachusetts Department of Agriculture.

The celebration of National Apple Week (Oct. 31-Nov. 6) proved more successful than the previous year. Twenty-four chambers of commerce through the Massachusetts Chamber of Commerce cooperated with the Massachusetts De-

partment of Agriculture and International Apple Shippers' Association to induce consumers to purchase and eat New England apples.

Five thousand apple posters were displayed in retail stores and restaurants. Eighty thousand New England Apple Week stickers were attached to hotel menus and business letters. Window display contests were conducted throughout the State and ribbon prizes awarded by the Massachusetts Department of Agriculture.

During the Week thousands of apples were distributed free in hospitals, schools, offices, and to commuters passing through the South Station, Boston. Apple recipe books, published jointly by the Boston Chamber of Commerce and the Massachusetts Agricultural College, were also distributed. Apple talks were broadcasted by radio during the week.

The Salem Chamber of Commerce received the silver cup awarded by the Massachusetts Department of Agriculture to the chamber securing the best results during Apple Week. The Boston Chamber of Commerce because of its greater size was excluded from the contest. As a special tribute, however, for the exceptional work done by the Boston Chamber during the Week, a Blue Ribbon was presented by the Massachusetts Department of Agriculture as a token of appreciation.

Weekly and monthly articles covering the subject of marketing problems and conditions are published in newspapers, magazines, and agricultural bulletins reaching 50,000 subscribers. Two hundred reprints are sent weekly to the agricultural leaders and educators of the State, as well as to the County Agents throughout New England.

COOPERATIVE RELATIONS.

We are working very closely with all the Federal and state agencies which are endeavoring to promote better marketing methods. Among these agencies are the United States Department of Agriculture, Bureau of Agricultural Economics, the Massachusetts Agricultural College, the Boston Market Gardeners Association, the Massachusetts Department of Health, and the County Extension Services. Our market news service has been greatly assisted through the cooperation of the Associated Press, the daily press in Springfield and Worcester, the Westinghouse Radio Broadcasting Station at East Springfield, the American Radio Research Corporation at Medford Hillside, and Sherer's Broadcasting Station at Worcester.

National Apple Week was a greater success than any previous year and this was due to extended efforts of the Massachusetts Chamber of Commerce and the Boston Chamber of Commerce. Twenty-eight Chambers of Commerce and Boards of Trade responded to invitations to participate in promoting the use of Massachusetts apples during National Apple Week.

At all times the Massachusetts Fruit Growers' Association and the Nashoba Fruit Growers' Association have cooperated in all activities directed toward the improvement of the fruit growing industry of the State.

Grading and marketing apples has been materially advanced by the assistance of the Massachusetts Agricultural College through its Experiment Station, County Extension Service, Department of Pomology, and Department of Economics by its research and educational work.

The Division of Markets aims to assist individuals, and to cooperate with organizations wherever possible, in the promotion of more efficient marketing of farm products.

REPORT OF THE DIVISION OF ORNITHOLOGY.

PUBLICATIONS OF THE YEAR.

The only publication issued by the Division in 1924 was entitled "Bird Migration and Distribution During Year Ending November 30, 1923" (8 pages). In 1924 also the manuscript of the first volume of "Birds of Massachusetts and New England" was completed and made ready for the printer.

INVESTIGATIONS.

The investigations undertaken during the year were largely such as would furnish material for the publication of the second volume of the work referred to above. Many facts regarding the food of birds have been gathered and recorded. The Boston Society of Natural History, the Museum of Comparative Zoology of Harvard University, the American Museum of New York and the National Museum at Washington all have placed specimens at the disposal of the Director.

Correspondence has been maintained with a large number of observers during the year through which information has been received as usual regarding the distribution and migration of New England bird life, and a bulletin has been sent out to each observer each month.

COOPERATION.

During the year the Division cooperated with the Massachusetts State Grange Committee on Wild Birds and joined them in celebrating a bird day at Concord, where the Director was one of the speakers. The Division has joined with the New England Federation of Bird Clubs in a plan for protecting the terns along the Massachusetts coast by placing wardens upon their breeding grounds. The Division has cooperated with the Northeastern Bird Banding Association, the Fish and Game Protective Association, the Department of Conservation, the Massachusetts Audubon Society and the National Association of Audubon Societies in measures looking toward the protection of useful birds in Massachusetts.

HEATH HEN.

Investigations made during the year in regard to the Heath Hen indicate that the birds have bred during the year, as several broods of young birds have been reported, but no very definite census of the Heath Hen has been taken.

CONSULTATION AND ADVICE.

Advice has been given to many persons and organizations proposing to establish bird sanctuaries in different parts of the State and in other parts of New England. Many individuals have consulted with the Director regarding the best means of establishing such reservations and attracting birds to them. In such cases advice is always freely given.

EDUCATIONAL WORK.

Lecturers on bird life have been recommended or furnished to many organizations and in many cases lantern slides have been loaned to lecturers. Articles have been prepared for newspapers.

RECORDS.

The records of the Division have been kept up to date with one important exception. The mapping year by year of the distribution and migration of Massachusetts birds was discontinued in 1922, as the appropriation for assistance was insufficient.

REPORT OF THE DIVISION OF PLANT PEST CONTROL

NURSERY INSPECTION.

The duties of the Division of Plant Pest Control are largely protective in their nature and this year they have been principally devoted to the inspection of nurseries, scouting for the Oriental and Satin Moths, control of the European Corn Borer and the White Pine Blister Rust.

The inspection of growing stock in the nurseries is very essential. It is designed to rid the nursery of injurious insects and plant diseases. The purchaser is thereby assured of receiving apparently healthy and clean stock. It is neces-

sary for the nurseryman to hold a certificate guaranteeing the stock before it is acceptable for transportation. Therefore, the inspection is essential for the nurseryman in order that he may carry on his business as well as a protection to the purchaser.

The nurseries this year are probably freer of pests than they have been for several years and there has been a marked difference in the attitude of the nurseryman to clean up his nursery. This has been especially noticeable in the case of the Gypsy moth. The nurserymen have made a very thorough clean-up of their stock, which together with the natural enemies have greatly reduced this pest in all of the nurseries. The inspection of the stock for scale, showed that the conditions were slightly changed from a year ago. The inspectors found and probably always will find, some of the susceptible trees and shrubs infested with both San José and Oyster-shell scale. These infestations were in all cases very light and in most cases the plants were destroyed. Where especially valuable stock or specimen plants were found infested, they were quarantined and will be withheld from sale until treated as directed.

White Pine Blister Rust was found in three of the nurseries on white pine. All trees that showed any signs of infection were destroyed and all Ribes, both cultivated and wild, were removed for a distance of 900 feet from all nurseries that grow any pine. With blister rust present in 165 towns in Massachusetts, it is not surprising that it occasionally crops out in a nursery.

Careful scouting was made to determine the exact area infested by the Oriental Hag Moth. This insect was brought in from Japan in 1906, but even at the present time is limited to Boston and towns adjoining and has not been found in any of our nurseries.

The Satin Moth, another exotic insect, seems to be firmly established in Eastern Massachusetts. Twenty-seven additional towns were found infested this year, making a total of 103 in the infested area. So far this pest has only been found on willows and poplars and spraying at the proper time has proved effective in controlling it.

During the past winter a thorough inspection was made of the property surrounding each nursery that held a certificate from this department. In case the adjoining property was infested with pests that might spread to the nursery, a notice was served on the property owner notifying him of the nuisance, instructing him of the measures to abate the same and the time when this should be completed. In most cases the property owner attended to this, but where he neglected to do so, or if the work performed by him was unsatisfactory, the Department of Agriculture completed the work and charged the same to the property owner. This clean area or strip around the nursery is a great help to the nurseryman, as a source of infestation may lie immediately outside the nursery.

A ruling of the Federal Horticultural Board prohibited the shipment of nursery stock outside the gypsy moth area if a single egg mass was found on stock consigned to points outside the area until certain requirements were met. At the same time they prohibited the shipment of evergreens outside the area, "after the gypsy egg masses hatched." The nurserymen were able to have this ruling modified so that evergreens could be shipped after the egg masses hatched, providing that each shipment was sprayed under supervision of a Federal inspector. This modification was beneficial in that it gave the nurseryman a much longer shipping season.

The department was particularly interested in two hearings held before the Federal Horticultural Board—one, relative to the Oriental Hag Moth; the other to White Pine Blister Rust.

In August the Federal Horticultural Board held a hearing presumably with the intention of placing a quarantine on the area infested with the Oriental Hag Moth.

The Oriental Hag Moth was first discovered in Dorchester in 1906. It was probably imported from Japan on nursery stock, as in 1906 there was a nursery in Dorchester conducted by Japs. The infested area was scouted in 1907 by the State Board of Agriculture and the Department has kept close watch of

this insect since that date. The area has been carefully scouted the last two winters and at present the insect is known to be present in five towns immediately adjoining Boston. This pest passes the winter in a cocoon and it is easily detected. The caterpillar stage or feeding period is during August and at that time the insect is easily controlled by spraying with arsenate of lead. The State Department of Agriculture has secured the assistance of the authorities in the infested towns and spraying in these towns has been done according to our recommendations. There are no nurseries in the infested area and, therefore, very little chance of shipping the insect out. A quarantine at the present time would not directly hurt the nurserymen, but each time a new insect pest is found in Massachusetts and is given wide publicity it does hurt Massachusetts agriculture in that it calls attention to the fact that we have a new bug.

It was, therefore, suggested that the Federal Horticultural Board allow this department to continue to take charge of the situation, because the department believed it was especially capable of doing so, and fully realized the importance of the insect. If at any time the area increases so as to include any nurseries, this department will work with all necessary precaution, and if the situation warrants it, ask assistance of the Federal Government. After due consideration the Federal Horticultural Board decided that a quarantine at this time seemed unnecessary since this department appeared to have the matter well in hand.

The hearing relative to the White Pine Blister Rust quarantine was held in Washington at the request of the American Association of Nurserymen. At the conference this department recommended that the unrestricted movement of five-leaved pines from Massachusetts nurseries be permitted, provided that no *Ribes*, wild or cultivated, are present in the nurseries or within 900 feet of the nurseries and provided that no black currants, including *R. aureum* or *odoratum*, are present within one mile of the nurseries; and provided further that only such five-leaved pines as are grown in the nurseries subsequent to the establishment of the above referred to *Ribes*-free zone shall be shipped.

The *Ribes*-free areas shall be established by the State Department of Agriculture and certification of the pines grown under these *Ribes*-free conditions shall be made by the State Department.

As yet the Federal Horticultural Board have not advised us whether any change will be made.

EUROPEAN CORN BORER

We have cooperated with the U. S. Government in maintaining offices in the Boston and Worcester Markets, where the inspection is made of vegetables and flowers consigned to points outside the infested area.

In 1923 the Legislature passed a law which required that all corn stubble, in the area infested by the European Corn Borer, be plowed under by December 1 of each year. There was very little opposition to this law, the only cases coming to our attention being where owners desired to seed their corn field down to grass or rye at the time of the last cultivation. Last year the department conducted an educational campaign with several agents in the field acquainting the growers with this law. The results were very satisfactory and it is estimated that 75-90% of the stubble was plowed under. This year a similar plan was put into operation with eight agents in the field. Without doubt there will be some delinquents, but it is gratifying to know that most of the growers are complying with this law. A careful scouting was made this fall for the borer and no new towns were found infested. This was especially encouraging and can perhaps be partially accounted for by the fall plowing. Also, a field survey in the late summer and fall showed that there had occurred a *decrease* in intensity of infestation of about 20% as compared to 1923.

An examination of the ears of sweet corn showed only 1.2% were infested compared to 10.6% in 1923 and 20.4% in 1922. Similar decreases were noted in beets, beans, celery, dahlias, gladioli, and chrysanthemums. The infestation in weed areas was reduced to a very low point—estimated at a decrease of 75%. The experts at the Government Laboratory in Arlington have liberated over a million parasites consisting of seven different species, two of which have been

recovered in small numbers. It is hoped that these will survive our climate and be a deciding factor in controlling the European Corn Borer.

WHITE PINE BLISTER RUST.

The White Pine Blister Rust, a serious plant disease which is menacing the white pine forests of this country, has been reported to date—November 30, 1924, as attacking white pines in 165 Massachusetts towns. This is indicative of the scattering distribution of the disease throughout the State. As has been stated in previous reports, the responsibility for the prevention of the further spread of this disease in Massachusetts, was originally assigned to this division under the Nursery Inspection Law. In an endeavor to discharge this duty, the activities of the department during the fiscal year 1924 have followed the same general procedure as last year and in accordance with the plan and policy adopted in the spring of 1922. This plan is divided into three major projects—Education, Service, and Control.

The object of educational work is to furnish to the public, and more especially to the owners of white pine, the essential facts concerning blister rust, and to make clear that the further spread of the disease in local areas can be prevented in but one way, and that is, by the elimination of both wild and cultivated currant and gooseberry bushes, technically termed *Ribes*, in pine producing sections of the State. These plants and no others are the active agents in the spread of the disease. This educational work is accomplished by means of talks at local community meetings, illustrated by the use of lantern slides and motion pictures; the proper exhibition of specimens showing the damage which blister rust can do; the distribution of circulars of information; the insertion of news items in the local press; and the display of illustrated posters and notices about the disease and its control.

The second project, which has been termed Service, has for its object the rendering of a service to the persons directly concerned; that is to say, to individual pine owners. This is accomplished by private interviews and personal instruction in the means of recognizing the symptoms of the disease; demonstrations of the damage that the disease is doing; and instructions in the use of the methods whereby it can be effectively controlled in local areas.

The third project; namely, Cooperative Control, usually referred to as *Ribes* eradication work, involves the rendering of assistance to pine owners in securing the efficient and effective removal of currant and gooseberry bushes, as a protection to their white pine. This assistance takes the form of instruction and supervision only, the pine owners furnishing the necessary labor with which to carry on control work and the State Department providing supervision through the employment of temporary inspectors or foremen.

The results of the work carried on during the field season of 1924 indicate that the educational and service work have been conducted even more successfully than in the past. As a result of this work, 2,544 owners have taken some active part in cooperative control work, and have assisted in the uprooting of 1,411,166 wild and 38,777 cultivated currant and gooseberry bushes in an effort to protect the white pine now growing in the communities in which they reside or possess forest land. This represents an increase of 141% over the number of individuals cooperating in the work in 1923. In carrying on this protective work, the cooperating owners have been willing to expend the equivalent of \$11,527.04, this amount constituting an increase of 67% over last year's record.

As a further indication of the effectiveness of the educational work, it is interesting to note that 1,564 owners have been willing to or at least did actually sacrifice their fruit-producing bushes without requesting reimbursement from the State. This fact, representing a gain of 167% in this type of cooperation, speaks well for the effort which is being made to carry on this phase of the work, not by and with the authority of the law, but by means of persuasion and an appeal to the community spirit. The average individual responds to the right sort of a reasonable appeal for cooperation, but rebels at compulsion. Fifty-five claims have been received from owners who feel that they should receive some reimbursement for the loss sustained in the removal of 5,960 cultivated bushes.

These claimants, however, represent less than 4% of the total number of persons who have been called upon to destroy their bushes and in nearly every instance they were deriving a considerable income from the plants.

With the increase in the number of individuals cooperating with the department, it might be expected that the area of land examined would be larger than that of last year. Such is not the case, however, the total land area examined this year—150,876 acres—being somewhat below the unusually large acreage examined in 1923. This situation is due to the fact that many of the lots were very small and practically no areas were Ribes-free, as was the case last year.

The reduction in the area of land examined has naturally resulted in a slight increase in the average cost per acre from the unprecedented low figure of 12¢ per acre in 1923, to 19¢ per acre for 1924.

The following tabulation of data summarizes the results of the field work performed during the fiscal year 1924.

Education:

Number of local meetings attended	57
Attendance at meetings	4,564
Number of exhibits placed	65
Number of circulars distributed	11,371
Number of news items prepared	211
Number of posters placed	416

Service:

Number of initial interviews with property owners	4,466
Number of follow-up calls	1,845
Number of field demonstrations to individuals:	
Instruction in identification of the disease	919
Instruction in the practice of control work	1,248

Cooperative Control (Ribes eradication):

Number of owners removing cultivated Ribes only	1,564
Number of owners removing wild and cult. Ribes	980
Total amount expended by cooperating owners	\$11,527.04
Area of land (acres) examined for wild Ribes	150,876
Estimated area (acres) of white pine protected	98,318
Number of wild Ribes pulled	1,411,166
Number of cultivated Ribes pulled	38,777
Average cost per acre (total expenditures)	19¢
Number of towns in which work has been conducted	70

These activities have been conducted as heretofore under a formal written agreement between the U. S. Department of Agriculture (Bureau of Plant Industry and the Office of Cooperative Extension Work), the State Extension Service (Director of Extension and the County Agricultural Agents), and the Massachusetts Department of Agriculture (Division of Plant Pest Control). The parties to the cooperative agreement are represented by an appointee of the Bureau of Plant Industry designated as the State Blister Rust Leader. The State Leader is responsible for the carrying out of the cooperative blister rust control program within the State, but administers the work in intimate association with the Director of this division.

During the fiscal year 1924, the State Leader, Mr. C. C. Perry, has been assisted in carrying on the work by the following personnel, designated as blister rust control agents, each man being charged with the responsibility for carrying out the plan of work in a definite district in the State:

<i>District</i>	<i>Agent in charge</i>
I Essex	W. T. Roop
III Plymouth-Norfolk	E. M. Brockway
V Worcester (South)	E. J. McNerney
VI Worcester (North)	R. W. Merrick
VII Franklin-Hampshire (North)	G. S. Doore
VIII Hampden-Hampshire (South)	R. E. Wheeler

In addition to the control work performed under the direction of this department, the Division of Forestry of the Massachusetts Department of Conservation has been conducting Ribes eradication work on lands under its jurisdiction. In this work 8,900 acres have been examined during the field season. From this area 613,870 wild Ribes were removed.

The Director wishes at this time to express his appreciation of the work done by Mr. C. C. Perry, who has had charge of the white pine blister rust; to his untiring efforts and conscientiousness are due the excellent results which have been accomplished. The services rendered by Mr. Q. S. Lowry as assistant have been very helpful and his thoughtfulness has been greatly appreciated.

APIARY INSPECTION.

The first matter of the year brought to the attention of the inspector of apiaries, was the possibility of desirable legislation for the elimination of bees kept in box hives and similar containers, the purpose being to require such colonies to be transferred to hives with removable fixtures, to the end of more possible and accurate inspection for bee diseases. This proposal was made by the members of the Attleboro Beekeepers' Society. After careful consideration it was determined that the provision in the apiary inspection statute, empowering the Inspector of Apiaries to make reasonable regulations for carrying out the necessary provisions, afforded the Department plenty of authority to regulate the problem of the box hive as presented. At the annual meeting of beekeepers held in Worcester, during the Annual Union Meetings, the various angles of the problem were carefully considered. It was agreed by all, including the delegates from the Attleboro Society, that the Department should first make this a departmental regulation; then if experience showed that legislation was necessary, this should be looked for in the future. In accordance, a regulation governing the use of box hives and similar equipment was prepared.

With the commencement of the active season of inspection, this box hive regulation was enforced by the inspectors. Only a slight amount of objection was encountered, limited perhaps in most cases to the more aged beekeepers, who all of their lives had been accustomed to the old-fashioned box hive, and to foreigners, whose custom was to keep bees in similar hives in the old countries. In some instances objection to the expense of new equipment has been raised, but this objection has usually been overcome, in one way or another. Similarly other objections have been met, so that as a whole the regulation has caused a considerable number of colonies to be transferred, "taken up," sold to other beekeepers with the understanding that the colonies would be transferred, or have been otherwise satisfactorily disposed of. There are a considerable number of colonies being held, pending transfer in the spring, when the season will be more favorable than it was in middle or late summer, when these cases were encountered. The trial of the regulation can be considered highly successful thus far. It is observed that this provision in apiary inspection powers is considered one of the four legal requisites in the proposed plan for "National Foulbrood Eradication," referred to elsewhere.

As Deputy Apiary Inspectors, the following were appointed on the usual per diem basis: Mr. Fred Challet, Northampton, who served in the Connecticut Valley; Mr. Charles N. Ellis, Westwood, worked north and south of Boston; Mr. O. F. Fuller, Blackstone, covered southern Worcester County and southeastern Massachusetts toward Cape Cod; Mr. Ivan Rawson, Pittsfield, was assigned to Berkshire County; and Mr. Edwards Thorne, Worcester, inspected in northern and central Worcester County and east in Middlesex County. The writer as Inspector of Apiaries directed the work.

The diseases encountered were American foulbrood in isolated and limited districts, particularly in the east; European foulbrood in Berkshire County, the Connecticut Valley and east, but to a noticeably limited extent in most all localities; sac-brood was reported in a few apiaries, but this disease is usually of self-eliminating character. In one or two instances treatment was recommended by the inspector. Diseases of the adult bees like the so-called nosema disease were not appreciable this year.

In January at Worcester, on the occasion of the Union Agricultural Meetings, the inspector arranged an exhibition of honey in various forms, wax, honey-vinegar, and bee products for the exhibitors of the Worcester County Beekeepers' Society. A lecture on bees and beekeeping was delivered in Attleboro on November 27, before the Centenary Men's Club. A considerable number of beekeepers were present in the audience of upward of fifty.

The appropriation was \$2,500, of which a small balance of \$4.35 remained unexpended at the close of the fiscal year. It is recommended that the appropriation of \$2,500 be continued for the year of 1925.

There is being promoted by the American Honey Producers' League, a project whereby the Federal Department of Agriculture will cooperate in National bee disease control, particularly in the control of American foulbrood. This department was requested recently to consider the general features of the plan and to state whether as a whole Massachusetts law would give adequate authority or could be made to do so. After due consideration the Inspector of Apiaries with the approval of the Commissioner replied that Massachusetts is in sympathy with the plan insofar as it has been made known and that the statute affords ample authority on each of the four essentials of law outlined by the League as being necessary in order to successfully clean up bee disease. It is understood that the plan is now being informally discussed with members of Congress and that shortly a bill will be introduced asking for the necessary funds, to be appropriated to the United States Department of Agriculture.

REPORT OF THE DIVISION OF RECLAMATION, SOIL SURVEY AND FAIRS.

IRECLAMATION.

As in 1923 the reclamation work of this division has been conducted by the State Reclamation Board, the Director of the Division being the official representative of the Department on the Board and Secretary of the Board. The report of the Board is therefore embodied in the report of the Division.

REPORT OF STATE RECLAMATION BOARD.

The personnel of the Board has been the same as during the last several years.—Mr. Warren C. Jewett of Worcester, Chairman, representing the Department of Public Health and Mr. Leslie R. Smith of Hadley, Secretary, representing the Department of Agriculture. The employment of Mr. P. M. Churchill of Elmwood, as Consulting Engineer, has been continued throughout the year, and Mr. John W. Plaisted, Chief Inspector for the Department of Agriculture, has acted as attorney for the Board on various legal questions.

At the beginning of the year the Board recommended to the Legislature, through the Department, that provision be made for proxy voting in reclamation districts and for the preparation of plans of districts to show their boundaries. These amendments to the law were made without opposition, appearing as Chapter 93 of the Acts of 1924. The provision for proxy voting is essential to the operation of some districts which have so many members living at a distance from the district lands that a quorum cannot be secured to attend meetings in person.

The Board has not had a sufficient appropriation to undertake general investigations of tracts of wet lands throughout the State, but has been obliged to confine itself largely to the consideration of new projects for drainage, and the supervision of projects previously undertaken. The Board has continued to furnish information about drainage questions upon application, and has given aid in some cases where the immediate organization of a district seemed unnecessary or inadvisable.

A new line of work has developed from contact with the Department of Public Works. Examination of various highway locations, which was required in connection with surveys of proposed districts, brought out the fact that the construction of highways is not always planned to provide for proper drainage of the land which the highways cross. A number of instances were found where

culverts in highway embankments are set too high to carry off any water except flood or surface water, and are of no value for removing ground water. In such cases the highway embankment acts as a dam, and sometimes aggravates the marshy condition of land through which it runs. Discussion of this condition with the Department of Public Works led to a request by the Commissioner of that Department that the Board would examine the locations decided upon each year for new highway construction, and report and recommend proper measures for taking care of the flow of water from tracts lying near the locations in question. This the Board has undertaken to do. A list of the State Highway projects for 1924 was submitted to the Board in November, 1923, and was examined by the consulting engineer for the Board before January 1, 1924. A similar list covering State Highway projects for 1925 was submitted early in November of the present year and was examined by the consulting engineer before the end of that month. A report on the 1924 projects was submitted to the Department of Public Works before construction began and a report on the 1925 projects will be prepared and submitted during the coming winter. It is expected that the examination of these projects before construction will enable the Board to bring about proper attention to drainage requirements in highway undertakings. In order to make this service fully effective the Board should also have information about projected County and Town highways long enough in advance so that these projects can be examined and recommendations made to cover the drainage features that may be involved.

During the year the Board held eight meetings, including five hearings on drainage projects. It received petitions for two new projects, and two petitions from old projects whose reorganization under the new form of law was found to be necessary. Hearings were held on all these petitions and all were approved. In each case District Commissioners were appointed.

STATUS OF RECLAMATION PROJECTS.

The projects now before the Board are in several different stages. There are three drainage districts organized under the law passed in 1918, and amended in 1922. Three districts have been organized since the complete revision of the law in 1923, and two districts formerly organized under the older law have been dissolved by act of the Legislature, and have been reorganized under the revised statute. The situation of the several projects at the end of the year were as follows:

ASSABET RIVER RECLAMATION DISTRICT (WESTBOROUGH-NORTHBOROUGH)

In accordance with the request of the Commissioners of the old drainage district, that district was dissolved by act of the Legislature during the session of the present year. A new petition for organizing a reclamation district under the revised form of the law received sufficient signatures to be presented to the Board in October. A hearing was held at Westborough on November 3d, and the organization of a Reclamation District was approved by the Board immediately after the hearing. The same Commissioners who served the drainage district have been appointed commissioners of the Reclamation District. Examination of the district area indicates that a thorough survey should be made before any construction work is undertaken. Arrangement for that survey is consequently being made. The situation in this district is complicated, because the Town of Westborough owns land within the district area, while the Commonwealth not only owns part of the land, a tract controlled by the Lyman School for Boys, but also has another institution between North Grafton and Westborough which pours a large quantity of water into the river, which flows through the district. It is not yet wholly clear under the law, how contribution to the expense of the district work can be made by the town and the Commonwealth. This problem will be pressed for solution during the coming winter.

BEAR MEADOW RECLAMATION PROJECT (WHITMAN)

The petition for this project was received just at the end of the year 1923. It covers a rather narrow strip of about 200 acres, extending from the Railroad Station at Whitman to a point near the station at North Hanson. At the lower

end an old flowage right is involved and near the upper end a stream which flows through the tract is receiving considerable quantities of water and sewage from the shoe factories. Some rubbish appears also to be finding its way into the stream from a town dump on the edge of Hobart Pond in Whitman, to which the stream serves as the outlet. Owing to the desire of some parties interested in the project to improve conditions around Hobart Pond and if possible to solve the problem of the district in connection with the construction of a sewerage system by the town of Whitman, the district has not yet been organized. Steps are being taken to bring about a line of action by all parties concerned which will settle all the difficulties involved. If it appears that the organization of a district is necessary or desirable, organization will be effected within the next few months.

CHERRY RUM BROOK DRAINAGE DISTRICT (GREENFIELD)

No construction work of any consequence has been done in this district during the year. In some places the main ditch has been partly filled up by sand brought down in times of flood. The cost of the improvement has been certified to the assessors of Greenfield, whose duty it is to make the assessments on the individual proprietors. The success of the work in this district has been made more evident by experience during the year.

CUTTER SWAMP RECLAMATION DISTRICT (ARLINGTON AND LEXINGTON)

The petition for this project was received in February and the Board held a hearing upon it in Arlington Town Hall, February 26th. The area involved is about forty acres lying along the boundary line between Arlington and Lexington near the boulevard. The work to be done is simple and inexpensive, except that it may involve a change in the location of two or three highway culverts. The project was approved by the Board and a Reclamation District duly organized. The district has been endeavoring to make arrangements for a survey and has not yet begun construction.

GREEN HARBOR RECLAMATION DISTRICT (MARSHFIELD)

The drainage district covering this area was dissolved by the Legislature during the 1924 Session, and steps were immediately taken to organize a Reclamation District under the revised law. After a hearing the Board approved the project and appointed District Commissioners. The organization meeting of the district was held in June, and later in the year the District Commissioners arrived at an agreement with the Town of Marshfield and the County of Plymouth for the construction of a bridge with tide-gates and stop planks through the dyke at a point near the old channel of the Green Harbor River. The plan for this bridge has been submitted to the Board and has been approved. It appeared, however, that the district must acquire title to the dyke and the land on which it is situated. This title now stands in the name of the proprietors of Green Harbor Marsh, an organization authorized by legislation passed in 1871. Since conditions make a conveyance impossible it is apparently necessary that the District Commissioners make a taking by eminent domain. Arrangements are now being made to put through the necessary process. It seems probable that if the proposed bridge can be constructed according to the plan, and the dyke and bridge properly maintained thereafter, the difficulties encountered by land owners in this marsh over a long period of time will be satisfactorily brought to an end.

NORTH SCITUATE RECLAMATION PROJECT (SCITUATE)

Little progress has been made on this project during the year. Only a few land owners are involved, but there is apparently no prospect that they can secure the improvements desired except with some of the powers that a district will give. As the land owners are still interested it is probable that some definite action will be taken during the coming season.

SALISBURY DRAINAGE DISTRICT (SALISBURY)

This district has not been reorganized under the revised form of the law, but such reorganization seems very desirable because many of the land owners in the area involved live at a distance, so that the affairs of the district would be much more readily handled if these members could vote by proxy. Proxy voting is, however, possible only under the revised form of the law. The District Commissioners have continued their efforts to secure an advance of money from the County of Essex, but this effort has been unsuccessful.

SHELBURNE RECLAMATION PROJECT (SHELBURNE)

The land owners in this area have found a means to secure drainage without the organization of a district and have completed the necessary work.

WAPPING RECLAMATION DISTRICT (DEERFIELD)

The area involved in this project is described in the last annual report of the Board. The District Commissioners were appointed in December, 1923, but the district was not organized until June, 1924. A further survey of the area to be drained indicated that the proper outlet was in a different location from that originally decided upon. The plan for improvements in this district does not contemplate doing all the work at one time, but taking it up by sections, as the district may decide. Bids are now being secured for constructing the first section. It is expected that the so-called Great Pasture Project in Deerfield will be combined with the Wapping Project.

WEWEANTIC RIVER DRAINAGE DISTRICT (CARVER)

No new construction has been undertaken by the district during the year. The new bridge on the location of the Old England Bridge near Tremont has proved to be much better suited to pass the water of the river than the old bridge. Near the upper end of the district the part of the bed of the river which was cleared when the district first began operations is showing a tendency to fill up again. This part of the river will need further cleaning, and some additional work should be done to remove obstructions and straighten the channel farther down stream.

INACTIVE PROJECTS

The so-called Malagasco, North Marblehead and Wessagussett Projects appear to be at a standstill. At North Marblehead the land owners appear to have lost interest, and various obstacles have prevented anything further being done on the other two projects which are situated in Boylston and North Weymouth respectively.

PENDING PROJECTS

The Board has information about several places where the land owners are interested in securing drainage. This includes a considerable area near Massapoag Lake in Sharon, a large tract in Whitman west of the Bear Meadow Project, and an area in Dedham which interferes with the development of that town and the construction of town parks and playgrounds. None of these have reached the stage of sending in a petition.

RECOMMENDATIONS

The Board regrets the necessity of asking for further changes in the Reclamation Law. In most respects the law is meeting the expectations of the Board and others interested in the State's drainage problem. It should be recognized, however, that this is a new line of State activity and that the legislation is necessarily experimental. It is not to be expected that every contingency can be met until after several years' experience with the law and with the situations which administration of the law brings to light.

To facilitate the operation of the Board, the personnel should be three members instead of two. One of the present members of the Board is not available on short notice, and without either member the Board cannot legally act. It is,

therefore, proposed that the Commissioners of Public Health and Agriculture be authorized to appoint a third member of the Board to serve for a term of three years. It is also recommended that the members of the Board be allowed compensation for their services as such, because a large part of their work must in order to meet the requirements of land owners of the various districts be done outside regular hours. The Board is convinced that it should have more information before passing on the advisability and practicability of projects and is therefore recommending an amendment to the law providing for a more thorough survey of each tract before acting upon a petition for improvements. Some other minor amendments are recommended, but those are not of enough consequence to be mentioned in detail.

Respectfully submitted,

(Signed) LESLIE R. SMITH, *Secretary*.

II. SOIL SURVEY.

The field work on the Soil Survey of the State went forward this year in Middlesex County under the same cooperative agreement as heretofore between this Department and the United States Department of Agriculture. The personnel of the field party was the same as during the two preceding seasons. Mr. W. J. Latimer represented the Bureau of Soils, United States Department of Agriculture, and Mr. M. O. Lanphear represented the Massachusetts Department. The State is fortunate in being able to secure the continued services of these men.

The party succeeded in covering the whole of Middlesex County before cold weather made necessary the bringing of the field work to a close. The necessary inspection of the county and other detail work still remains to be done so that no extended report can be given describing the results obtained. It was found that the extensive areas of first-class orchard soils which were found in Worcester County and were there given the name of Charlton extend into Middlesex County across the Nashoba Apple Belt. The best orchards in Middlesex are on this soil and it is noticeable that orchards on other soils are less successful. The Charlton soils appear to be derived from a belt of rock of a type known as schist, which extends from Brimfield at the easterly end of Hampden County, in a northeasterly direction across Worcester and Middlesex counties, nearly to the Merrimac River. Except for this belt of good orchard soils, the survey disclosed that the average soils in Middlesex County are generally less desirable for tillage than the soils of Worcester County. Gravelly and sandy soils cover large areas and there are also extensive tracts of meadow and marsh land, a considerable part of which is too wet for agricultural use. The agricultural importance of Middlesex County, therefore, except for the apple-growing industry, depends more on the proximity of most of the county to good markets than upon the general excellence of its soils. The convenience of markets has led to the development of soils that would not be used in more remote localities.

During the summer copies of the Soil Survey Report on Barnstable, Bristol and Norfolk Counties were received from the Bureau of Soils, and some of these were distributed. This report varies from the usual practice of the Bureau of Soils, in that it covers three counties instead of one. Detailed soil maps of each of the three counties are included in the report. The Department still has some copies that will be furnished upon request. On account of vacancies in the force of inspectors employed by the Bureau of Soils, no inspection of Berkshire County could be made this year. This delay is unfortunate because it will defer the publication of the report on this county.

The field work in this State has now covered the following complete counties, which are named in the order in which the survey work was done: Plymouth, Bristol, Barnstable, Norfolk, Worcester, Berkshire, Middlesex. The Connecticut Valley was surveyed about twenty years ago, but the survey did not cover any complete county. The counties of Franklin, Hampshire and Hampden will, therefore, be surveyed before the work in Massachusetts is brought to a close. Reports have been published on the first four counties named. According to present plans the field work next year will cover the County of Essex.

III FAIRS AND EXHIBITIONS.

Prize money allotments were made to 115 agricultural societies, granges and poultry associations holding fairs and shows in Massachusetts this year. Out of this number, 96 fairs and shows held exhibitions, and 19 returned their allotments either because those in charge of the fair did not deem exhibits worthy of State prize money or because for some reason the fair could not be held.

Special exhibits were installed in connection with the Union Agricultural Meeting, Mechanics Building, Worcester; Brockton Fair; Hancock Community Fair; Worcester Fair; Eastern States Exposition and Woburn Exposition. An extensive exhibit showing the milk problem from beginning to end was shown in the Massachusetts Building at the Eastern States Exposition this year, which proved as interesting and effective as the apple industry exhibit shown a year ago. Each fair and poultry show was inspected by a representative of the Department and a detailed record of inspection, giving the number and character of exhibits, is on file.

The fairs' lecture is in good demand and many new lantern slides have been added during the year so that the lecture is kept up to date.

The fairs were very well attended and the exhibits both in quantity and quality were very good. The increased attendance at the large fairs and the quality of the exhibits would seem to indicate the continued and growing interest of the people in the agriculture of the State and to warrant an increased appropriation to carry on the work. Request has, therefore, been made for a larger appropriation for next year.

Special ribbons were awarded at all the Grange fairs for the best exhibit of canned goods, the best exhibit of fruit and the best exhibit of vegetables. In a few cases, these ribbons were given at other agricultural fairs.

MEDALS.

In 1924 the Department decided to make a permanent annual award of gold medals for outstanding agricultural achievements.

These medals, awarded to man or woman, boy or girl, as the case may be, represent the highest reward of merit that is conferred by the Department. These medals are awarded only after the most careful study by a Board of Awards, consisting of the Commissioner of the Department of Agriculture, the Director of the Division of Reclamation, Soil Survey and Fairs, the members of the Advisory Board of the Department of Agriculture, the President of the Massachusetts Agricultural College, the Master of the State Grange, the President of the Massachusetts Federated Farm Bureau and the Editor of the New England Homestead. In 1923 and again in 1924, six awards were made. A permanent record is being compiled, showing photograph of the recipient and a description of the accomplishment.

In addition, silver and bronze medals and cups are given each year at the discretion of the Commissioner of Agriculture and Director of the Division of Reclamation, Soil Survey and Fairs.

CAMP GILBERT

The Department cooperated in the conducting of Camp Gilbert at the Massachusetts Agricultural College this year and paid the expense of Boys' and Girls' Club Work amounting to \$1,747.30.

EXPENSES OF SPECIAL EXHIBITS

Union Agricultural Meeting	\$519.63
Brockton Fair	43.59
Hancock Community Fair	2.94
Worcester Fair	7.42
Eastern States Exposition	3,246.05
Woburn Exposition	81.93

\$3,901.56

AGRICULTURAL PRIZE MONEY AWARDED TO SOCIETIES AND FAIRS
1923-1924

Acton Agricultural Society	\$400.00
Acushnet Grange	30.00
Annarsnac Grange	15.00
Ashburnham Grange	20.00
Barnstable Agricultural Society	516.00
Becket Grange	20.00
Bedford Grange	35.00
Blackstone Valley Agricultural Society	401.50
Blue Ribbon Agricultural Club	36.50
Bourne Agricultural Society	37.00
Braintree Grange	30.00
Brimfield Grange	20.00
Bristol County Farmers' Club	200.00
Brookville Grange	21.00
Burlington Grange	15.00
Cheshire Grange	19.00
Deerfield Valley Agricultural Society	650.00
East Bridgewater Grange	20.00
Essex Agricultural Society	599.00
Flintstone Grange	13.00
Framingham Boys' and Girls' Club Work	50.00
Franklin County Agricultural Society	900.00
Gardner Agricultural Association	350.00
Gill Grange	20.00
Granby Grange	16.00
Greater Lynn Agricultural Society	450.00
Groton Farmers' and Mechanics' Club	450.00
Hampden County Improvement League	77.00
Hampshire, Franklin and Hampden Agricultural Society	900.00
Heath Agricultural Fair	125.00
Highland Agricultural Society	650.50
Hillside Agricultural Society	650.00
Hilltop Grange	15.00
Hingham Rose and Strawberry Show	72.00
Hinsdale Grange	21.00
Holliston Grange	25.00
Hoosac Valley Agricultural Society	392.50
Housatonic Agricultural Society	900.00
Lawrence Horticultural Society	36.00
Lee Grange	25.00
Lenox Grange	33.00
Littleville Community Fair	35.00
Lanenburg Grange	17.50
Lanenburg Community Fair	50.00
Mansfield Grange	25.00
Marshfield Agricultural Society	598.00
Martha's Vineyard Agricultural Society	400.00
Merrimac Grange	25.00
Milton Grange	15.00
Nantucket Agricultural Society	250.00
Natick Grange	15.00
Needham Grange	20.00
New Salem Grange	15.00
Norfolk County Fair	350.00
Norton Grange	22.50
Otis Grange	20.00
Oxford Agricultural Society	400.00
Pembroke Grange	34.00

P.D. 123.	35
Plainville Grange	15.00
Plymouth County Agricultural Society	450.00
Ponkapoag Grange	16.00
Reading Grange	20.00
Rockland Grange	20.00
Southboro Cattle Show and Fair	192.00
Southboro Grange	19.50
Sterling Farmers' Club	50.00
Stockbridge Grange	25.00
Stoughton Grange	15.00
Templeton Grange	35.00
Thrifty Grange	15.00
Union Agricultural Society	598.00
United Shoe Machinery Athletic Association	48.50
Wachusett Grange	25.00
Warren Grange	30.00
Wendell Grange	24.00
Westminster Farmers' and Mechanics' Club	50.00
West Newbury Grange	21.50
Westport Agricultural Society	500.00
West Stockbridge Grange	25.00
Worcester Agricultural Society	900.00
Worcester Northwest Agricultural and Mechanical Society	700.00
Worcester South Agricultural Society	650.00
Worcester County West Agricultural Society	700.00

TOTAL — \$16,692.50

POULTRY SHOWS 1923-1924

The Department offered prizes through thirteen poultry, pigeon and pet stock association shows during the year 1924. Each show was inspected by a representative of this Department and a record of the number and character of exhibits is on file.

The prize money was awarded as follows:

Amherst Poultry Association	\$139.00
Athol Poultry Association	75.00
Boston Poultry Association	500.50
Eastern Mass. Pigeon, Poultry and Pet Stock Assn.	175.00
Fitchburg Poultry Association	49.00
Gardner Poultry Association	92.50
Hub Poultry Association	149.00
Lenox Poultry Association	150.00
New England Poultry Association	175.00
Northampton Poultry Association	151.50
Springfield Poultry Association	200.00
Templeton Poultry Association	50.00
United Rabbit & Cavie Club	50.00

TOTAL — \$1,956.50

SUMMARY OF EXPENDITURES

Appropriation	\$28,619.82
Paid:	
Prizes at fairs	\$16,692.50
Special exhibits	3,901.56
Poultry shows	1,956.50
Boys' and Girls' Club Work (Camp Gilbert)	1,747.30
Badges and medals	900.38

Trucking	50.00	
Photography	43.00	
Postage	100.00	
		<hr/>
		25,391.24
Balance		<hr/>
		\$3,228.58

IV. CONTROL WORK.

The first part of the year was occupied largely with legislative matters. Early in December the Department filed its recommendations for legislation which covered five subjects. These proposals are described in detail in the previous annual report. The recommendations were referred to the joint committee on agriculture, which reported favorably on all of them, and all ultimately became law in somewhat different form than that at first proposed (Acts of 1924, Chapters 90, 93, 94, 119, Resolves of 1924, Chapter 36). During the session of the General Court a considerable number of bills in addition to those proposed by the department were considered, and representatives of the department appeared at the hearings held upon several of them.

During the year fourteen cases were prosecuted in various courts—twelve for violations of the dairy laws and two for violations of the law on apple grading and packing. Most of these cases involved two or more counts. Eleven of the twelve cases arising under the dairy laws resulted in convictions in the District Courts. Two were appealed to the Superior Court in Middlesex County, where the finding of the District Court was affirmed. One other occurring near the end of the year was appealed to the Superior Court and is still pending. This last case has developed into a test case to determine whether a certain product is oleomargarine under Massachusetts law. One case brought under the new enactment to prevent the sale of filled milk, so-called, resulted in an acquittal.

The record in the two cases under the apple grading law was one conviction and one acquittal. In the former case the defendant appealed and the appeal is still pending.

In November two cases were initiated under the apple grading law, but these had not come to trial at the end of the month.

The compilation of Agricultural Laws was completed to the end of the last legislative session. Investigations of legal questions were made for the several divisions. Assistance was given to the special Commission on Pensions in securing statistics of the value of farm products used on Massachusetts farms where they are produced. The official in charge of control work acted as attorney for the State Reclamation Board throughout the year and in October was elected Executive Officer for the Board. One reclamation district and two agricultural corporations were organized during the year.

At the close of the year legislative recommendations for the session of 1925 were in the course of preparation and bills were being drafted to accompany these recommendations.

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The Commonwealth of Massachusetts

ANNUAL REPORT

OF THE

Commissioner of Agriculture

FOR THE

Year Ending November 30, 1925



DEPARTMENT OF AGRICULTURE, 1925

Commissioner of Agriculture

DR. ARTHUR W. GILBERT OF BELMONT

Advisory Board Appointed by the Governor and Council

PETER I. ADAMS OF STOCKBRIDGE (HOUSATONIC), Term expires November 30, 1925.

HERBERT N. SHEPARD OF WARREN, Term expires November 30, 1925.

JOHN BURSLEY OF BARNSTABLE (WEST), Term expires November 30, 1926.

STUART L. LITTLE OF NEWBURY, Term expires November 30, 1926.

EVAN F. RICHARDSON OF MILLIS, Term expires November 30, 1927.

LESLIE R. SMITH OF HADLEY, Term expires November 30, 1927.

Organization of the Department

DIVISION OF DAIRYING AND ANIMAL HUSBANDRY—JOSEPH C. CORT OF CAMBRIDGE, *Director*

DIVISION OF MARKETS—WILLARD A. MUNSON OF WALPOLE, *Director*

DIVISION OF ORNITHOLOGY—EDWARD HOWE FORBUSH OF WESTBOROUGH, *Director*

DIVISION OF PLANT PEST CONTROL—R. HAROLD ALLEN OF TAUNTON, *Director*

DIVISION OF RECLAMATION, SOIL SURVEY AND FAIRS—LESLIE R. SMITH OF HADLEY, *Director*

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The Commonwealth of Massachusetts

REPORT OF THE COMMISSIONER.

RECOMMENDATIONS FOR LEGISLATION.

In the course of apiary inspection work, certain violations of the regulations made and issued under section 32 of Chapter 128 of the General Laws have been noted. Usually such violations are corrected without prosecution, but during the past year one such violation could not be so corrected. Prosecution was contemplated when a review of the Apiary Inspection Law showed that no penalty was provided for violation of apiary inspection regulations. This defect in the Apiary Inspection Law led to an examination of other laws which the Department is required to administer with the result that similar defects were found in the sections relating to plant pest control (General Laws, Chapter 128, sections 16-31 A. inclusive) and in the sections concerning the grading and packing of apples (General Laws, Chapter 94, sections 100-114, inclusive). I therefore recommend that these statutes be so amended as to permit enforcement of the rules and regulations which they authorize. The examination of the Apple Grading and Packing Law also disclosed that no penalty is now provided in cases where the Commissioner or his assistants are obstructed or hindered in making inspections and performing other duties under the law. The desirability of such a provision is apparent and I recommend a further amendment to remedy the existing defect.

CHANGES IN THE STAFF.

During the year, the Department lost through death, the services of Dr. Charles D. Woods, Director of the Division of Information, and through resignations the services of Mr. Osmon M. Camburn, Director of the Division of Dairying and Animal Husbandry; and Mr. Ralph W. Harwood and Miss Dorothy H. Goodwin, Investigators of the Division of Markets.

Dr. Wood's death is an irreparable loss, not only to the Massachusetts Department of Agriculture, but to the country at large. He was a scientist and administrator of international reputation, a graduate of Wesleyan University, and for many years was Director of the Agricultural Experiment Station for the State of Maine.

The Commission on Administration and Finance refused to sanction the appointment of an adequate successor of Dr. Woods. The Division of Information which had been so useful to the farmers of the state has ceased to exist as a Division, and has been merged with the general office and its personnel decreased.

On June 30, 1925, Professor Camburn resigned to become Professor of Dairying at the University of Vermont. Mr. Camburn made very many personal friends, and through his energy and efficacy did much to build up the livestock and dairy interests of the state. The vacancy caused by Mr. Camburn's resignation is being ably filled through the appointment on July 1, of Mr. J. C. Cort. Mr. Cort is a graduate of Iowa State College, has taught at the University of Minnesota and has in addition, broad and successful experience in commercial farming in the West.

Mr. Harwood resigned on June 8, to enter business at a considerably advanced salary. A graduate of the Massachusetts Agricultural College, and an exceptional man he had done efficient service in the Division of Markets, especially organizing its valuable market reporting service. His place was filled on June 9 by the appointment of Mr. Walter E. Piper, Jr., who was formerly an apple inspector in this Division. Mr. Piper has taken up actively his enlarged sphere of usefulness. He commands the confidence of

farmers and merchants alike, and his apple bulletins especially have attracted wide recognition and are assisting materially to build up the apple industry of the state.

Miss Goodwin left to be married on April 11, 1925. Her place has been filled by the appointment on July 23, 1925 of Miss Marion L. Speer. The latter is a graduate of Wellesley College and has had excellent training in economics and marketing problems.

Since the death of Dr. Woods, the work formerly in the Division of Information has been ably carried on under the immediate direction of my secretary, Miss Hylda M. Deegan.

FARMS FOR SALE.

One of the outstanding pieces of service, and carried on by the Department for several years has been the publication of a bulletin containing a list of farms for sale in Massachusetts. Through a small advertisement in certain national farm papers calling attention to advantages of farming in Massachusetts, the bulletin has been in great demand. As a result of its distribution a large number of farms have been sold mostly to young men from the West.

SUMMER FACILITIES IN MASSACHUSETTS.

A new plan was started last year, that of listing in bulletin form the many facilities on farms for summer guests. A surprisingly large number of such places are available. This bulletin was in great demand, and as a result of its broad distribution, many city families found enjoyable, healthy pleasure at a moderate price in the country. This was an advantage both to city and country people. The plan will be continued.

FARM LABOR.

The plan of former years of conducting a labor bureau for the placement of farm laborers has been continued with the usual success. The quality of men seeking positions was improved the last year. Many farmers have been well served also through this channel.

PRESENT STATUS OF MASSACHUSETTS AGRICULTURE.

Farming in Massachusetts continues to improve. A farmer with good training, good health and adequate capital can make a good living on a Massachusetts farm under present conditions. The hours of labor may be long and the work often arduous and at times disagreeable, but there are also certain advantages and amenities to, in part, offset the hardships. Those who are intelligently practicing the kinds of farming adapted to our conditions may look forward to fairly successful futures.

DIVISION OF DAIRYING AND ANIMAL HUSBANDRY

In previous years the annual report of this division has included a general survey of the livestock, dairy and poultry situation. No such comprehensive statement will be attempted in this report, but only a brief summary of the actual work as carried on by the division will be given.

On March 1st the six demonstration sheep farms were discontinued as a state project, but Mr. C. D. Richardson, who had acted as supervisor, was continued on a part-time basis for the sheep work.

INSPECTION WORK.

The dairy inspectors of the division have made 8,542 inspections during the year, with 59 samples taken. The result was thirteen court cases and thirteen convictions.

*Report of Inspections.
Twelve Months Ending November 30, 1925.*

	<i>Total Inspections</i>	<i>Inspections without samples</i>	<i>Inspections with samples</i>	<i>Total samples</i>
December	1,151	1,145	6	6
January	696	688	8	8
February	943	938	5	5
March	1,422	1,409	13	17
April	1,636	1,635	1	1
May	1,159	1,159	0	0
June	798	797	1	1
July	280	275	5	5
August	3	3	0	0
September	134	134	0	0
October	1	1	0	0
November	319	304	15	16
TOTALS	8,542	8,488	54	59

Summary of Court Cases During the Twelve Months Ending November 30, 1925

<i>City or Town</i>	<i>Where Tried</i>	<i>Month</i>	<i>Number</i>	<i>Law Violated</i>	<i>Convictions</i>
New Bedford	New Bedford	December	3	Oleomargarine	3
New Bedford	New Bedford	February	1	Milk	1
Springfield	Springfield	March	2	Oleomargarine	2
Worcester	Worcester	March	2	Oleomargarine	2
Everett	Malden	April	1	Milk	1
Worcester	Worcester	May	4	Oleomargarine	4

QUALITY OF MILK.

Throughout the summer and early fall a series of tests were conducted at several of the cooperative and proprietary milk plants to effect an improvement in the quality of milk. In order that the Massachusetts producer may successfully meet the competition of up-country milk he must produce a product of superior keeping quality. By employing the reductase or methylene blue test the raw milk can be graded fairly accurately into four classes that indicate relative quality as far as bacteria content is concerned. By this method 1,285 samples of milk were tested and those of poor keeping quality determined. The day following, or as soon after as possible, a visit was made to the farms supplying this poor quality milk. Simple, inexpensive methods were suggested to the farmers as to how to remedy this condition. The table following shows how effective the plan was in improving the milk supply. Three series of tests were run in this plant approximately thirty days apart. Class 1 indicates the highest quality milk and Class 4 the lowest. In all, 291 farm visits were made, the work being conducted as an educational campaign rather than an inspection or law enforcement proposition.

Result of the Reductase Test at One Plant.

	<i>No. of Samples</i>	<i>Class 1</i>	<i>Class 2</i>	<i>Class 3</i>	<i>Class 4</i>
Test No. 1	68	7	14	26	21
Test No. 2	57	16	15	22	4
Test No. 3	58	20	32	6	0

SHEEP WORK

During the spring and summer Mr. C. D. Richardson was in constant touch with the lamb and wool market and kept the sheep men over the State posted on prices and where they could find the best markets through reliable

dealers. He also assisted in the buying and selling of several thousand dollars' worth of sheep by getting the interested parties together.

Quite a large number of all wool blankets have been located and exchanged for wool until the supply of such blankets has been practically exhausted. For the past few months he has been trying to get a close estimate of the amount of wool which the growers want to make into all wool blankets, and arrangements are being made to have them manufactured. Talks on sheep raising have been given at grange meetings.

GARBAGE FEEDING SURVEY.

An extensive study of the garbage feeding problem was made during the summer and fall. This work was done in cooperation with the State Department of Public Health and a report was submitted to them.

BROCKTON FAIR.

Members of the division assisted in supervising the cattle department of the Brockton Fair. A larger number of cattle were shown than ever before—about fifty per cent more than the preceding year. The quality of the cattle was unusually good. Many individuals were later shown at the National Dairy Show and were quite consistent winners.

BEEF CATTLE PROJECT.

Mr. Camburn assisted in the organization of the Eastern Beef Producers' Association and during the spring a beef cattle investigation was made in the Connecticut Valley by Mr. S. R. Morrison to determine the possibilities of feeding steers on tobacco farms. There was a very great interest in this proposition but most of the men did not have feed sufficient to warrant undertaking the feeding of steers. However, during the fall several hundred steers were placed on feed in the valley and the results of this work will be watched every closely

REPORT OF THE DIVISION OF MARKETS

The Division of Markets has endeavored to improve its services with the result that each year has seen those farmers, wholesalers, consumers and all who use them placing increased confidence in their dependability.

The daily releases of our market reporters are a guide to many growers and buyers in carrying on their business and the mimeographed reports going out and reaching many consumers through the press and the mails bring us favorable reactions as to their value in assisting the consumer to take advantage of favorable opportunities to purchase products for the family table.

A very necessary step to be taken is to find some method by which the quality products of Massachusetts farmers can be identified by the trade and the consumer. Many of our growers produce the finest vegetables, fruit, poultry and dairy products, but when these leave the farm and begin to pass through the channels of trade they lose their identity as locally grown stuff with the result that the consumer has little opportunity to tell whether he is buying the high quality, unusually tender and most desirably flavored Massachusetts grown product, or the ones that are grown to hold their good appearance and ship best from long distances without very much attention to tenderness and flavor.

Massachusetts farms are near to market. This fact gives distinct advantages to be capitalized by the owners in that the demand of the market can be very closely watched. It is the man who uses this advantage to determine what the markets want, when and how it prefers his crops, and then governs his operations accordingly who is reaping the best results.

The purchasing power of the large mass of consumers in this northeastern section of the country is as good, if not better than any other locality. Indus-

trial workers are paid good wages, and when workers are receiving good pay they desire better products. If more of our growers realized this fact, they would make a greater effort to fill the desire that comes as people procure more wealth.

Roadside markets in many instances are proving to be an efficient method for the grower suitably situated to dispose of his crops to the consumer. The difficulty which the motorist has in determining the farmer's stand using the most ethical retailing practices from the pedler's stand discourages many of the automobile travelling public from purchasing at any roadside market whatever.

The plan of identifying markets started by a group of farmers in Middlesex County has the possibility of informing purchasers that they are buying fresh harvested crops of the man who grew them.

This plan of identifying the stands along our highways should be extended in a uniform manner to cover the state.

Plans developed by sections without regard to uniformity have the possibility of confusing the prospective customer to the extent of defeating the purpose of the identification. The object is to build up consumer confidence in the farmer's retail methods. If a person is accustomed to buying direct of the farmer operating under certain rules in one section of the state he will expect the same opportunity when buying of a trade marked stand in any other location of the state.

Methods of distributing food commodities are continually becoming more complex as population grows and as congestion in city centers increases. In order to be well informed and to administer the duties assigned to us by law and expected of us by the public, it is necessary to continually collect facts upon which we can depend to guide us in our work.

Following are brief statements of the Division's activities during the past year.

WHOLESALE MARKET NEWS.

Farmers' Produce Market. Reports on the Wholesale Produce Market have been issued daily except Saturday throughout the year from our three large markets, Boston, Worcester and Springfield. These reports are disseminated in accordance with schedules of the previous year.

Special News on Apples. The Special Apple Market Report is issued during eight months, approximately, August 1—April 1. A fifty per cent increase in subscribers during the past year testifies to the interests in this type of market news.

An added feature this year has been the inauguration of a daily Springfield Special Apple Market Report as a part of the regular Produce Market Report. This service was started to meet the demand of apple growers in the area from which the Springfield market draws its supplies.

Weekly News Letters. Our Worcester and Springfield offices issue a regular weekly news letter touching on items of interest in the market. These news letters through their popular style are designed for the purpose of informing consumers as well as distributors concerning the movement of some of the important items of our food supply.

Supplementary Reports. Our supplementary market news service covering weekly reports on the Brighton Livestock Market and Hay, Straw, Grain and Feed prices have been continued through the year.

Dissemination of Market News. The policy of distributing market reports only to those who subscribe an amount sufficient to cover postage is maintaining our market news service on a sound and satisfactory basis. Waste is avoided and those who have charge of the work are assured of the interest of their readers.

A rather wide distribution not easily estimated is also obtained for our reports through the Associated Press and through the daily papers in Worcester and Springfield.

Sources of Information. It is through the cooperation of producers and distributors that the compilation of market news is made possible. This type of news is merely the "boiled down" opinions of men engaged in the

business. The greater extent to which producers and distributors cooperate in furnishing their opinions, the greater will be the scope, usefulness and reliability of the resulting reports.

RETAIL MARKET NEWS.

The retail market reports published by the Division aim to help the consumer buy food by informing her about quality, quantity and price. The Boston report is sent to housewives, domestic science teachers and to the market gardeners who receive the wholesale report. During the past year Food Facts Bulletins were issued in conjunction with the Retail Report, stressing particular features of crops or markets. The Division also cooperated with the Massachusetts Federation of Women's Clubs, Department of the American Home, in writing menus and timely recipes. In Springfield the retail report, issued on Tuesdays and Fridays, is published in three of the leading papers with a total circulation of over 120,000. The Weekly Market Letter with notes on retail and wholesale market conditions, appears in the Sunday papers. A sheet of suggestions of seasonable and attractive menus and recipes, furnished by the Hampden County Improvement League, appears with the weekly report. In Worcester retail prices are collected twice a week and sent to a paper and broadcasted from Station WTAG with news of interest to housewives, prepared by the Worcester County Extension Service.

CROP REPORTS.

A continuance of our cooperative relations with the United States Department of Agriculture in the maintenance of the New England Crop Reporting Service with headquarters at Wakefield, Mass., has made possible the issuance of crop forecasts and reports on several principal commodities.

During the past year the Service carried on the following lines of work:— Assisted in the federal census of agriculture; completed and published a survey of the acreage, flowage and production of cranberries in Massachusetts; helped plan and conduct a survey of apple orchards, production and marketing; tabulated records not previously so assembled as to numbers of livestock in Massachusetts and Connecticut; made extensive inquiries as to crop acreages and yields; further developed the monthly reports on dairy production throughout New England, and obtained much wider dissemination of its many reports.

The new federal census will help to provide the necessary fundamental statistics of agriculture, while the survey of cranberries makes possible a much more reliable reporting service for this crop than was possible before. With the results of the apple survey growers throughout New England will be able to extend their orchards and production much more successfully and profitably. They will know which varieties sell best, volume of demand, volume of present and expected production, prices that may be expected for different varieties. This information or comprehensive inventory of the apple industry will enable the Crop Reporting Service to render a much more useful current service to growers.

Records as to numbers of livestock and milk production will directly assist in stabilizing the dairy business and in preventing the wasteful periods of excess production. The extensive acreage and crop yield inquiries were very useful in providing reliable basis for estimating crop production, and the greater study and use of the published reports by farmers help them towards better balance of production with demand.

ROADSIDE MARKETS.

As in past seasons the Division of Markets has kept in touch with the development of roadside markets in Massachusetts, making a brief survey of those on four of the principal roads leading out of Boston. The number of markets seems to have increased this year, while the amount of business done by each stand has decreased with the added competition. The problem in this type of marketing is to insure fresh fruit and vegetables at a reasonable

price. The Roadside Stand Association is making a systematic attempt to stand for fresh products, although as yet its membership is not large.

APPLE GRADING LAW.

The Massachusetts Apple Grading Law, designed primarily in order to bring about standardization of grades of apples and thus to establish a reputation for apples packed and branded in accordance therewith has now been a part of the law of our state for ten years.

During this entire period the administration of the provisions of the Law has been largely along educational lines. While the possibilities for its use along educational lines should never be overlooked, it seems reasonable to assume that extensive publicity has given the apple industry of the state an ample opportunity to become fully acquainted with the requirements of the Law.

In order, therefore, that objects of the Apple Grading Law may be attained, a policy of increasing stringency of enforcement seems advisable.

STUDIES IN MARKETING.

Retail Food Price Study. During the summer an investigation was made of retail prices of selected perishable foods in thirteen Massachusetts cities in order to determine the differences which existed in such prices in different parts of the state, and to ascertain the causes of such variations. The price differences revealed by the investigation were studied from the standpoint of the farmer, the retailer, and the consumer, with the object of suggesting improvements. The lowest price area proved to be in the northeastern part of the state, and the highest in the western part.

Study of Prices of Staple Goods in Different Types of Retail Grocery Stores. A comparison between retail prices of staple goods in grocery stores of different types was made in 1925. Prices were corrected simultaneously in twelve cities in Massachusetts in sixty-nine stores, some cash-and-delivery, some charge-and-delivery, and some cash-and-carry. It was found that organization was an important factor affecting price, since chain stores rendering the same services were cheaper than non-chain, but it was also seen that services are probably a more important factor than organization, since those stores rendering greater service showed a marked increase in price over those giving less service.

The results of the study are intended primarily to give the consumer some idea of the amount she saves or does not save by trading in different types of retail stores.

Fruit and Vegetable Commodity Study. Our food supply from many states and foreign countries gives us products of great variety throughout the season. It is important for growers and distributors to know the source, season and volume of this supply.

In order that information may be available regarding some of these products, we have during the past year as opportunity permitted, carried on studies of several of our principal fruits and vegetables as they appeared on our markets. This work has attempted to determine facts relative to quality and condition of product, use of brands or labels, size and types of containers, units of sale, market handling, trade preferences, etc.

As much of this as has been compiled is on file for use as basic information in our market news work, as well as other purposes.

Worcester Egg Study. A study of the supply and distribution of eggs in the city of Worcester has been conducted for the purpose of making available to growers and distributors some facts relative to market requirements and methods of handling.

The Use of Milk in Metropolitan Boston. A study of the use of milk in Metropolitan Boston was prepared in 1925 by the Massachusetts Department of Agriculture, Division of Markets, cooperating with the U. S. Bureau of Agricultural Economics under the auspices of the New England Research Council.

This study takes up the household use of dairy products, use of milk in hotels and restaurants, seasonal use of milk in restaurants and the distribution of milk sales in Boston. The questionnaire method was used. It brings up to date and expands a study made some years ago on the influence of advertising on the demand for milk. A number of charts and tables with explanations make up the greater part of the report.

Receipts and Sources of Boston's Food Supply. A yearly bulletin, "Receipts and Sources of Boston's Food Supply," was compiled at the end of 1925, covering the carlot receipts of vegetables and fruits, butter, cheese, eggs, poultry, live-stock and dressed meats, trucked in fruits and vegetables, receipts of milk, flour, grain, sugar and tea. The tables are given in such form that they are comparable with similar reports of the two previous years. The report is mimeographed and sent to consumers, market gardeners, teachers in agricultural colleges, where there is a distinct demand for its use in classrooms, teachers of domestic science and officials in other states. Government, state, city and private reports are the sources of this data. In addition to these there were interviews with wholesalers and commission men, freight agents, retailers and city inspectors and officials.

COOPERATIVE RELATIONS.

The work of the Division in the development of cooperative projects has two distinct aspects: first, our direct participation as one of the cooperating agencies in project designed for the promotion of better marketing methods; second, our indirect participation as a coordinating agency in encouraging and developing the cooperative efforts of other agencies.

Here it is and always has been the policy of the Division to recognize the fact that the initiation of cooperative activities should arise from a definite need and should only be encouraged when it is apparent that some definite function can be more efficiently performed in this way than it can on an individual basis.

Furthermore, we realize that the strength of any such projects depends on the extent to which the individuals who are cooperating realize that the job at hand is primarily their job. Consequently we believe that a public agency such as ours should use extreme care in seeing that it does not overstep the functions of any private cooperative organization.

Massachusetts National Apple Week. The observance of Massachusetts National Apple Week offers an example of the possibilities of a cooperative advertising project.

During the week of October 29–November 6 in conjunction with the Massachusetts Chamber of Commerce and County Extension Services, the Division assisted in carrying on an advertising campaign designed to point out to consumers the advantages of using Massachusetts apples. Thirty-three cities and towns registered to take part in a window display campaign. The Department awarded ribbons for window displays and presented two silver cups to the city or town putting on the most complete apple advertising program—one cup for cities 75,000 population or over, and one for cities under 75,000.

Apple Survey of Massachusetts. During the summer an apple tree survey was carried on by the Department of Agricultural Economics of the Massachusetts Agricultural College with the assistance of men from the Division who acted as field agents in collecting information. Cooperating with the New England Research Council we worked toward the coordination of this work with similar activities in other New England states.

The results of this survey are to be used as a basis for compiling future crop and market news. They will also be useful to growers as a guide for future plantings and in planning their future cultural and marketing practices.

A Study of Consumer Demand for Massachusetts Apples. This study is being carried on by the Agricultural College. We are assisting in compiling information. This project is designed to determine some facts relative to consumers' preferences for varieties, grades, units of sale, etc. It may be used as supplemental to results of the Survey mentioned above in offering

to the apple industry information concerning some features affecting the consumer demand for their products.

Cooperation with U. S. Dept. of Agriculture. Cooperative relations with the Bureau of Agricultural Economics of the U. S. Dept. of Agriculture makes the Bureau's crop and market reports available for our use. These reports gathered through their extensive machinery of market news service cover shipping points and markets throughout the country. We are thus able to transmit to readers of our market reports prompt and reliable news from production and distribution centers outside the state.

Close contact with the activities of the U. S. Dept. of Agriculture also enables us to keep in touch with activities for promotion of better marketing methods throughout the country.

The work of the New England Research Council on Marketing and Food Supply during the past year shows the increasing value of such an agency founded on the recognition of and designed for the promotion of the agricultural and economic unity of the New England states.

The New England Crop Reporting Service whose report appears in another column is another agency made possible by the cooperative efforts of the Department and Bureaus of Agriculture in the New England states and the Federal Department.

The College and Extension Service. Our cooperation in the activities of the Massachusetts Agricultural College and County Extension Services referred to elsewhere testifies to our cooperative relations with those engaged in agricultural education.

Assistant of Organizations. Associations of producers and distributors have been of much help in our marketing studies and in many other ways. The value of such associations in presenting the needs of its members cannot be overlooked.

Newspaper and Radio Service. The value of newspaper and radio services in disseminating market news deserves recognition of the assistance which these agencies have rendered during the past year. The extent to which such services can be obtained depends largely upon the extent to which readers and listeners make known their desires.

REPORT OF THE DIVISION OF ORNITHOLOGY

During the year three publications have been issued;

1. A revision and reprint of "Out-door Bird Study"
2. A revision and reprint of "Food, Feeding and Drinking Appliances and Nesting Material To Attract Birds."
3. The Birds of Massachusetts and Other New England States, Part I, Water Birds, Marsh Birds and Shore Birds, with colored plates by Louis Agassiz Fuertes; the first of three volumes on the birds of Massachusetts and New England, the preparation of which has been authorized by the General Court.

The Division has cooperated with the New England Federation of Bird Clubs in procuring and setting aside as bird refuges four islands as breeding places for sea birds, and two reservations for breeding land birds. Two island reservations have already been presented to the Commonwealth by the Federation, and others will probably follow.

E. H. FORBUSH, *Director.*

REPORT OF THE DIVISION OF PLANT PEST CONTROL

NURSERY INSPECTION.

The nurseryman's problem of keeping his nursery comparatively free from injurious insects and plant diseases nowadays, presents on the whole, fewer difficulties than previously. Practically all of the insects and diseases have

been with us for some time. We are familiar with their appearance, the manner in which they work and in most cases know effective and economical means of control.

The day of total eradication of nursery pests except in rare instances, is beyond any possibility. The problem is one of pest suppression to a point where the plants can be maintained in the nurseries in a healthy state and delivered to the purchaser in as clean condition as is consistent with reason, in these days of wide spread pest prevalence. No inspector can be expected to be 100 per cent perfect in his detection of insect pests and plant diseases. Even if susceptible plants are sold in a clean and healthy condition, a certain responsibility devolves upon the purchaser in maintaining them in this condition. Otherwise, they will soon fall heir to the pests which attack plants and suffer accordingly.

The field inspection of the nurseries was carried on with a force of ten men during July and August. The inspection showed that the stock was in very good condition and apparently free from scale. Except in the southern part of Massachusetts—especially Cape Cod, the gypsy egg masses were fewer this year than for several previous seasons. The property surrounding the nurseries was especially free from pests, so that very few notices to clean up had to be served on the owners.

Considerable time was spent scouting for the Satin Moth. This is a European insect and, in this country, has confined its feeding to willow and poplar trees. About ninety additional towns were added to those already known to be infested, so that at the present time the area includes all of Eastern Massachusetts and as far west as Worcester. The infested towns have been quarantined, and the shipping of willows and poplars out of the area prohibited.

During the past winter and spring, a very careful survey was made to determine the exact area infested by the Oriental Hag Moth. This insect was brought into Massachusetts from Japan in 1906 and, although at the present time it infests only a small area, the Division believes that it is advisable to keep in very close touch with the pest. The scouting showed that the insect had spread very little during the past season and that the light infestation in Nahant and Saugus could be easily cleaned up. This clean-up was accomplished, so that the northern limit is now in Revere. The Oriental Hag Moth can be controlled by spraying the infested stock during August, using arsenate of lead at the rate of 3 lbs. to 50 gallons of water.

Two importations of nursery stock from France were found infested with foreign insects not established in this country. Such cases clearly show the advisability of thoroughly inspecting each importation. A large number of inspections were made of stock entering Massachusetts from other States as well as shipments consigned to points outside of the State. Most of the stock coming into the State was in good condition, although one shipment of oak trees from Ohio was found to be infested with borers. The infested trees were destroyed.

An inspection of five-leaved pines in the nurseries showed that there is a small amount of blister rust present. In order to furnish further protection to the five-leaved pines, in the nurseries where any considerable number are raised, the Division removed all black currants for a distance of one mile.

EUROPEAN CORN BORER.

This insect furnishes one of our major problems. Three years ago the Legislature passed a bill which made it compulsory for all corn stubble in the area infested by the corn borer, to be plowed by the first of December. This measure tends to destroy such borers as would winter over in the stubble. The fact that the insect has not spread in Massachusetts for the past three years, can be perhaps accounted for by this law. A few violators were summoned into court last year for failure to comply with the law, but no penalties administered.

This fall the Division has had eleven inspectors in the field and the area thoroughly canvassed. It is hoped that the regulations will be carried out

by every corn grower, whether he be a farmer or an individual with a back yard garden. The damage caused by this insect in Canada this past season should be borne in mind when carrying on the control work in Massachusetts where we have a two-brooded borer which has far greater possibilities of causing enormous losses.

The Division has cooperated with the United States Government in the inspection of vegetables and flowers consigned to points outside the infested area, offices being maintained in the Boston and Worcester markets.

In several towns there has been an increase in the intensity of infestation as compared to 1924, although the infestations are not as heavy as in 1923. This increase was especially noticeable in the ears of early sweet corn and also in the stalks of late corn. The infestations in beets and beans were about the same as in 1924; namely, scattered infestations, but no severe damage observed. This was also found to be true of the infestations in dahlias, gladioli, and chrysanthemums. The infestation in weeds was also very light.

The Massachusetts Experiment Station is cooperating with the United States Government with the object of determining the proper time of planting to avoid heavy infestation, also the best varieties of corn to plant under prevailing conditions. These experiments will naturally take considerable time before definite recommendations can be made. The Government experts are still hopeful that the introduced parasites may prove a factor in controlling the corn borer, several species having been recovered in the areas in New England, New York, Ohio, and Canada.

APIARY INSPECTION.

January 6, in Worcester, Mass. there was held the annual meeting of beekeepers in connection with the Union Agricultural Meetings. It was a joint convention of the Federated Massachusetts Beekeepers' Association, Incorporated, and the Worcester County Beekeepers' Society. At this time there was a conference of the apiary inspectors of Massachusetts.

Former Deputy Inspectors of Apiaries were re-appointed as follows:

Mr. Fred Challet, Northampton, inspected in Connecticut Valley.

Mr. Charles N. Ellis, Westwood, inspected in Essex County and south of Boston.

Mr. O. F. Fuller, Blackstone, inspected in southeastern Massachusetts.

Mr. Ivan Rawson, Pittsfield, inspected in Berkshire County. Mr. Edwards Thorne, Worcester, inspected in Worcester County. Each served part time throughout the season. Mr. Benjamin A. Hildreth, Sherborne, was appointed on September 1, 1925 to serve the remainder of the season on a per diem basis. He assisted Mr. Ellis and served in Middlesex County.

As a result of the Department's regulation, approved May 14, 1924, requiring the transfer of bees from box-hives to hives with removable combs, the year 1925 has seen the completion of the transfer of a great many of these colonies. However, in some instances transferring is still pending. Furthermore, it may be necessary in the case of persistent failure to comply with the regulation and after other measures have failed, to invoke the provisions of the statute. This fall, arrangements were maturing, to prosecute in the case of an offender, when it was discovered that the statute at present is defective, in regard to prosecutions for failure to observe regulations. It is recommended that the statute be amended at the coming Legislature, so as to correct this defect.

Diseased conditions were found improved in Berkshire County and in the Connecticut Valley. As for the past several years, most of the disease found in the State was in Worcester County and east. Both American and European foulbrood occurred, but the former seems to predominate. Particular attention was paid to the suppression of the infection found centered at Brockton, in which district repeated examinations were made. It is expected to follow up closely this district in 1926. Similarly, inspection was concentrated in the vicinity of Framingham, where there appears to be a limited re-occurrence of a former outbreak. Here intensive inspection will be neces-

sary in 1926. In Lawrence and vicinity with unusual cooperation of the local beekeepers through their society, a limited outbreak of American foul-brood is thought to have been placed under control. On the whole, bee diseases in the State are far less frequent than they were in years past.

WHITE PINE BLISTER RUST

This Division, in cooperation with the Office of Blister Rust Control, United States Department of Agriculture, is conducting a state-wide campaign to prevent the further spread of the white pine blister rust—a serious plant disease—which is fatal in its attack upon white pine trees. The control of this disease is accomplished by the elimination of currant and gooseberry bushes which are the alternate host plants of the fungus which causes this disease. This campaign is being conducted on the basis of an eight-year program, during which time an attempt will be made to acquaint every white pine owner in the State, with the characteristics of the disease, the damage it is doing, and to induce all parties concerned, to promptly perform control work. This year marked the fourth under this program, and considerable progress was made toward the accomplishment of the fundamental purpose of the campaign; namely, the adequate protection of the white pine in Massachusetts against further damage by this disease.

For purposes of administration, the State was divided at the beginning of the campaign in the spring of 1922, into nine districts, the boundaries of which largely follow along county lines. This year, work was carried on in each of these nine districts except District IV Bristol-Barnstable. On July 1, work was resumed in District IX Berkshire and on November 16 work was initiated in District II Middlesex. The program of work as planned for District I—Essex, was practically completed, a limited amount of work being left for completion until the spring of 1926.

The stage of the disease as it appears on the white pine tree, has been reported in 187 towns in Massachusetts up to November 30, 1925. This record represents an increase of 22 towns since the report of a year ago. These figures indicate that the disease is generally distributed throughout the State in local centres from which there is likely to be a gradual spread unless the alternate host plants are promptly eliminated. Heavy infection was found throughout the State on currant and gooseberry leaves, and a number of new areas of rather serious pine infection were found in the town of Sturbridge in southern Worcester County and in the towns of Ashfield, Conway, and Shelburne in Franklin County.

The principal activity of this division as its part in the cooperative program, is to assist pine owners in locating such currant and gooseberry bushes as may be menacing pine trees on their properties, and to furnish general supervision to the task of actually up-rooting and destroying these offending bushes. In this work, 29 temporary field men were employed by this division during a period of about five months—May to September inclusive. These men rendered assistance to 1,763 land owners in making examinations on 194,851 acres of land, 110,892 acres of which is producing white pine. The cooperating owners expended the equivalent of \$5,554.15 in this protective work. From these areas 706,830 wild, and 33,610 cultivated currant and gooseberry bushes were eradicated at a total average cost of 11 cents per acre.

In connection with the conduct of control work, wherever cultivated currant and gooseberry bushes are so situated that they are considered likely to be a menace to nearby pines, it is necessary to remove such cultivated bushes, as well as the wild species. In handling this phase of the problems, every effort is made to encourage owners to donate their bushes to the cause of the protection of the pine and this year a very special attempt was made to keep these claims down to a minimum. The law provides, however, that an owner has the right to submit a claim and under the statute 23 persons have submitted such claims. These relate to the removal of 980 bushes which have been valued by the department at \$377.10. Of these claims, 10 pertain to bushes removed by this division in connection with the protection of the

more important pine producing nurseries in the State, reference to which has been made in the discussion of Nursery Inspection work.

The blister rust control work in Massachusetts has been conducted under the supervision of Mr. C. C. Perry, who has been assisted during the year by the following named men, designated as blister rust control agents, each assigned to a definite district in the State and responsible for all blister rust control work performed therein:

Earle M. Brockway	District	III	Plymouth-Norfolk
William Clave	District	VI	Worcester (North)
G. Stanley Doore	District	VII	Franklin-Hampshire (North)
William J. Endersbee	District	IX	Berkshire
Edward J. McNerney	District	V	Worcester (South)
Robert W. Merrick	District	VI	Worcester (North) de- ceased
William T. Roop	District	I	Essex; District II Middlesex
Ralph E. Wheeler	District	VIII	Hampden-Hampshire (South)

The Director wishes at this time to express his appreciation again for the conscientious and thoughtful work that has been carried on by Mr. Perry. His untiring efforts have been largely responsible for the success attained in the white pine blister rust control work. Mr. Q. S. Lowry, Assistant Director, has also been of great assistance in carrying on the Nursery Inspection work and field work in connection with the European Corn Borer.

REPORT OF THE DIVISION OF RECLAMATION, SOIL SURVEY AND FAIRS.

RECLAMATION.

The reclamation work of this division has been conducted as in previous years through the State Reclamation Board, of which the director of the division is secretary. The report of the Board follows:

REPORT OF THE STATE RECLAMATION BOARD

At the beginning of the year the personnel of the Board was the same as it has been since 1921—Mr. Warren C. Jewett of Worcester, chairman, representing the Department of Public Health and Mr. Leslie R. Smith of Hadley, secretary, representing the Department of Agriculture. On November 28, just at the close of the year, Mr. Jewett, whose health had been failing for some time, died at the Massachusetts General Hospital so that the year closed with one of the Board's two memberships vacant. The interest and conscientious service given by Mr. Jewett to the work of the Board was worthy of high appreciation by the people of the State and particularly by those connected with reclamation projects whose interests he was always desirous of serving. In the work of the Board and in the other activities in which he was prominent, Mr. Jewett will be greatly missed.

RECOMMENDATIONS FOR LEGISLATION.

The additional experience of the year just closed has demonstrated that some further changes in the Reclamation Law are necessary. To a large extent these amendments are only of a perfecting and clarifying character but changes are also required on a few fundamental points.

The first important recommendation is that a third member be added to the Board in order to facilitate securing a quorum of the Board for meetings. This recommendation is a repetition of one made last year.

The Board also believes it desirable that specific provision be made for compensation of the members. A large part of the Board's work is necessarily done outside the regular hours of State service since meetings with the district officers and members and with petitioners for improvements authorized under the law must largely be held in the evening and often at a distance from Boston that requires absence over night. The amount of compensation should be in proportion to the service rendered and can best be determined by the Governor and Council. An amendment to this effect is, therefore, recommended.

A third change in the law which we believe would have beneficial results would permit the Board to determine, after receiving petitions, whether the requested improvements require the organization of a district and would then enable necessary proceedings to be taken without the organization of a district if no district seems to be necessary. Some small projects can readily be handled by agreement among the parties involved, provided the work is properly supervised by the Board. The organization of a district is a formal and somewhat complicated legal matter which should not be compulsory where small areas and a simple program of work will meet requirements. Amendments providing for this additional line of procedure are, therefore, recommended.

The other amendments suggested are not described in detail because they are largely of a minor character intended to perfect the operation of the law and to clarify procedure in certain respects, particularly in dealing with the finances of districts.

GENERAL WORK OF THE BOARD.

The policy followed by the Board in previous years has been continued. It has supervised and directed such reclamation projects as were actually in process, has assisted in organizing districts for which petitions were presented and has acted as a bureau of information for individuals and for officers of cities and towns who were interested in draining and otherwise improving wet lands. So far as possible, engineers and contractors in the localities where the work is done are given preference. But in some instances it appears that this practice leads to greater expense in making surveys and performing construction work than is really necessary. It seems certain that surveys could be made much cheaper if conducted under the immediate direction of the Board by an employee of the Board itself, the cost then being assessed back on lands within the districts concerned.

Only one new petition was presented to the Board during the year. Several inquiries which will probably lead to petitions for the organization of districts have been brought to the Board's attention. A larger amount of actual construction work has been done than in any previous year and the variety of conditions encountered was greater than in any previous season. A statement of the situation in each of the organized districts and of conditions affecting projects where no district has yet been organized appears in the following paragraphs.

DRAINAGE DISTRICTS.

At the beginning of the year only three districts organized under the Drainage Law were still in existence; namely the Cherry Rum Brook District, Greenfield, the Salisbury District at Salisbury, and the Wewantic River District in Carver and Wareham. The latter two districts were inactive during the year. The Salisbury District made another effort to secure the financing of its project through the county commissioners of Essex County but was unsuccessful. It appears that this district should be reorganized as a reclamation district so that it can finance the necessary work in the district area. No work was done in the Wewantic River District but the project as originally outlined is far from completion. This district should also reorganize as a reclamation district or possibly as two districts because the interests of proprietors in different parts of the river valley appear to be divergent. The assessment for construction work in the Cherry Rum Brook District

was made by the assessors of Greenfield and included in the tax bills of the several proprietors when these bills were sent out in September. After the final report of the district commissioners is received this district will be turned over to the permanent district organization.

RECLAMATION DISTRICTS.

1. *Assabet River, Westborough and Northborough.* This district, formerly a drainage district, organized as a reclamation district March 19, district commissioners having been appointed at the end of 1924. The district commissioners adopted a plan for improvements on June 29, voting to undertake a part of the work at first and to complete the whole plan from time to time as money might be available. A detailed survey of the district was made and on the basis of this an assessment roll was prepared, the district commissioners determining, with the approval of the Board, that all land in the district which was affected by the improvements should be assessed equally. At the instance of the district commissioners an article was included in the warrant for the annual town meeting for the town of Northborough, proposing that the town pay a part of the cost of reconstructing a stone bridge over the Assabet River within the boundaries of the district and the town voted to pay two-thirds of the total cost, provided that cost did not exceed \$1,000. Plans for reconstruction for this bridge were prepared and submitted to the Department of Public Works. The form of contract and specifications for that part of the project which the district commissioners had decided to undertake was adopted by them with the approval of the Board November 13. A meeting of the district, held in October 3 and 8, voted to raise \$1,500 for current expenses and \$5,500 for construction. At the end of the year arrangements were under way for placing the district notes and to closing a contract for construction.

2. *Bear Meadow, Whitman.* This district voted to organize on July 10, and adopted by-laws at an adjourned meeting July 24. At the time of organization of the district the highway authorities were studying the improvement of Franklin Street which crosses the lower end of the project on the town boundary between Whitman and Hanson. The highway authorities wished to straighten the stream draining the district and to build a new highway bridge over the proposed new channel but were unable to secure the necessary land for this purpose. Since the straightening of the channel in this locality would be of marked advantage to the districts, the district commissioners decided to acquire the necessary land and authorize the highway authorities to relocate the channel of the river through this land thus making possible the construction of a new bridge on the proposed location. The land on the Whitman side of the highway was secured by a free deed of gift from the owner and the land on the Hanson side was taken by eminent domain, this taking being recorded at Plymouth on August 3. At the end of the year the district commissioners were working out further plans for improvements in the district.

4. *Cutter Swamp, Arlington.* This district extends a little over the town line to Lexington. Owing to various difficulties, little progress has been made on this project. The principal difficulty is financial. Arrangements for financing have been proposed that may enable this work to be done next spring. Market garden and house lot development is expected to follow the completion of the work.

5. *Green Harbor, Marshfield.*—Soon after the beginning of the year it began to be evident that assistance from the county of Plymouth and possibly from the town of Marshfield could be secured to build the most necessary structure required by this district; namely, a new sluice or sluices through Green Harbor Dike. The district commissioners, therefore, proceeded to determine the assessment roll of the district which was first completed February 11, and modified April 6. On March 20 the commissioners voted to make a taking by eminent domain of the dike and the land on which it was situated and shortly after the order of taking was duly executed and recorded in the Registry of Deeds for Plymouth County. A plan for a bridge

with sluices and tide gates was approved by the district commissioners February 28. This structure was also satisfactory to the county commissioners who proposed to build it as a highway improvement and collect one-third of the cost from the town of Marshfield and one-third from the district. A technicality which would have prevented the use of the money from the town during the year was overcome by the passage of a special act, which was put through during the last days of the session and signed by the Governor April 30. The county commissioners then called for bids for construction and let a contract to the Engineering Service and Construction Company of Boston in June. Work was begun almost immediately and proceeded through the summer until the structure was finished in September. In order not to interrupt traffic on the road along the dike, it was necessary to build, at additional expense, a temporary timber by-pass around the opening for the bridge. The total cost of the work, including the by-pass, was about \$33,000. After the tide gates were open the water in the marsh was lowered several feet and as far as could be determined, the new structure was a complete success.

6. *Milford, Milford.* Early in the spring the Milford Chamber of Commerce made an inquiry about the necessary procedure to clean up an unsanitary condition along the Charles River in Milford and took out a petition for organization of a reclamation district. This petition signed by almost all the landowners in the affected area was submitted soon after April 1. The Board held a hearing at Milford on April 2 and appointed district commissioners on April 25. Since the town was evidently involved in the problem, the five commissioners included the Chairman of the Board of Selectmen and the Secretary of the Board of Health. The commissioners called a meeting of the proprietors in the usual manner for organization. The district organized and adopted by-laws May 28. The proprietors in the district generally felt that the improvement should be financed by the town since the pollution and the obstruction of the river was largely due to the negligence of the town authorities in permitting waste and refuse from factories, public and private dumps, and other sources to get into the stream. A special town meeting was, therefore, called for August 3 and voted \$10,000 to pay the expense of the improvements to be made in accordance with the district plans. A defect in this vote necessitated the calling of another special town meeting October 28 in order to amend the original vote. This amendment was duly passed and a contract for the work was let during the month of November to Antone and Ransom of Greenfield. Work was proceeding in the district at the end of the year and promised to be a great success. The procedure followed in connection with this district may prove to be a precedent for correcting unsanitary conditions in other localities.

7. *Wapping, Deerfield.* In this district the district commissioners decided to clear the channel of that part of the stream nearest to the Deerfield River for a distance of about three-fourths of a mile and made a determination of the percentage of expense to be borne by the proprietors involved. Objection to this determination was made by one of the proprietors so that the Board held a hearing at Greenfield which resulted in an agreement among the parties concerned. This was approved by the Board; and a contract was then let to Antone and Ransom for the necessary ditching. Work under this contract began June 26 and was completed before the end of September. No machinery was used, the digging and removal of rubbish being accomplished entirely by hand labor. The results fully met the requirements of the landowners, having lowered the water over the whole area so that the land dried out during the fall and will apparently be useable for agricultural purposes next season. The proprietors themselves continued the channel for a short distance above the work performed by the contractors and thus lowered the water in an additional area. Obstruction of the channel in this district proved to be due partly to the washing of sand into the channel by drainage ditches from the State highway east of the district area. The construction of brush dams to keep out this sand was being considered at the end of the season.

INACTIVE PROJECTS.

Under this heading can be grouped a few projects considered in previous seasons but not carried to the point of definite action. Such projects are those at North Scituate and Marblehead, discussed in previous reports. Other projects taken up with the Board in previous years have apparently been dropped.

NEW PROJECTS.

Several new areas have been brought to the attention of the Board during the year. The proprietors of land along Herring River in Wellfleet, where the State has recently financed extensive improvements through the Department of Public Works, took out petition blanks with the intention of organizing a district to maintain these improvements and otherwise make the land in the district available for cultivation and other purposes. The petition was not presented to the Board during the year.

At Sharon, the Salvation Army found some drainage work necessary in the area which it was developing as a summer camp for mothers and children. Conditions were not such as to require the organization of a district, but the Board assisted with advice and suggestions while the work was going on. The Board ought to be specifically authorized to deal with requests of this sort which can be handled without the organization of a district.

On other occasions the Board has been consulted by town officers and private individuals who were interested in the drainage of various tracts and considerable assistance has been given in such cases, particularly to the authorities of the town of Lexington, who wish to accomplish extensive drainage work within the town limits. It seems probable that undertakings in Lexington will ultimately involve adjoining towns, particularly Arlington, Belmont and Waltham.

CONCLUSIONS.

The Board is convinced that the changes in the law which failed to pass during the year are necessary to the full success of the Board's operations. A saving in time and probably a saving in money to the several districts would result if the Board were allowed sufficient appropriations to employ a surveyor or engineer to make the district surveys. At present the district commissioners have charge of these surveys and are frequently delayed in securing proper persons to make them. Some progress has been made in securing the better location of bridges and culverts so that more thorough drainage of land above them can be secured.

The Board believes that only a beginning has been made in drainage work in Massachusetts and that valuable results can be obtained as its operations are extended. This can well be done without large expenditure, because the State pays only the cost of supervision over the projects undertaken, the whole expense of actual construction being borne by the land benefitted.

Respectfully submitted,

STATE RECLAMATION BOARD

By LESLIE R. SMITH, *Secretary*.

SOIL SURVEY.

The season of 1925 was so favorable that the field work covered not only Essex County as originally planned, but also Dukes County and Nantucket. Since the final report on this work has not been prepared, only a general statement about results can be made here. The survey of Essex County disclosed nothing of special note, the varieties of soils being substantially the same as some of those found in other counties. It appeared that Essex County has extensive areas of good soils and that these are much larger than the areas now in active use for agriculture. In the island counties, seven varieties of soils not found on the mainland were identified and mapped.

The nature of these soils indicates that most of them were laid down earlier than the present surface soils on the mainland and that the islands were not affected as much as the mainland by the ice sheet in the last glacial period. It is expected that these seven varieties of soils will prove to be similar to varieties already mapped in Long Island, New York.

As during several previous seasons, the work was conducted by Mr. W. J. Latimer, soil specialist of the Bureau of Soils of the United States Department of Agriculture. He has been assisted as previously by Mr. M. O. Lanphear of the Massachusetts Agricultural College. No additional soil survey reports were received during the year, although material is in process of preparation for reports on Worcester, Berkshire and Middlesex counties. The Department still has copies of the combined report on Barnstable, Bristol and Norfolk counties for distribution.

FAIRS.

Allotments of agricultural prize money were made to one hundred and eight Agricultural and Horticultural Societies, Grange and Community Fairs, Poultry Shows and other organizations holding fairs and special exhibitions in Massachusetts.

The Division cooperated with the Union Agricultural Meeting, State Armory, Worcester, January 6, 7, 8 and 9, 1925 and with the New England Fruit Show in Horticultural Hall, Boston, October 29–November 1, with the Eastern States Exposition, Springfield, September 20–26 and with the Brockton Fair at Brockton, September 29–October 3. The vegetable exhibit in the Massachusetts Building, Eastern States Exposition grounds, Springfield, was the most complete exhibit of vegetables ever put on by the Department covering all branches of the industry.

In connection with the New England Fruit Show in Boston besides paying all premiums won by Massachusetts exhibitors the Department also furnished the services of its employees and helped in paying the expense of staging the show.

At the request of the Educational Fuel Committee of the New England Governor's Fuel Commission arrangements were made and special exhibits of low volatile semi-bituminous coal were made at the following fairs:—

- Bristol County at Segreganset
- Brockton at Brockton
- Eastern States Exposition, Springfield
- Essex Agricultural Society, Topsfield
- Franklin County Agricultural Society at Greenfield
- Gardner Agricultural Society at Gardner
- Hampshire, Franklin and Hampden Agricultural Society,
Northampton
- Housatonic Society, Great Barrington

This was a great help, in view of the coal strike, in showing the public how to use substitutes for anthracite coal.

The Fairs have been inspected by the Director or Assistant Director of the Division and a detailed record of the number and character of the exhibits kept.

The illustrated lecture on fairs has been kept up-to-date and new slides made. The Department this year purchased a motion picture camera and as a result has a library of films made from pictures taken at the different fairs during the season. The season of 1925 was a most unusual one. The weather was wet and the temperature so low that the attendance was affected.

Department ribbons have been offered more extensively than in the past and the demand for this type of award is increasing in popularity.

MEDALS.

Gold medals for superior achievement were awarded on January 7, at the Union Agricultural Meeting at Worcester, and silver and bronze medals have been awarded through the fairs and other organizations.

CAMP GILBERT.

The Department cooperated in conducting Camp Gilbert at the Massachusetts Agricultural College again this year and paid expenses as follows:—

Silver Cups	\$55.42
Pins	702.91
Camp Expenses	1,191.46
TOTAL	————— \$1,949.79

FINANCIAL STATEMENT OF SPECIAL EXHIBITS

Union Agricultural Meeting	\$580.94
Eastern States Exposition	2,071.79
New England Fruit Show	3,157.73
Educational Fuel Exhibit	205.37
TOTAL	————— \$6,015.83

AGRICULTURAL PRIZE MONEY AWARDED TO SOCIETIES, GRANGES
AND FAIRS

Acton Agricultural Association, Inc., \$500.00; Acushnet Grange \$40.00; Annursac Grange, \$20.00; Ashburnham Grange, \$25.00; Ashfield Grange, \$20.00; Barnstable Co., Agricultural Society, \$600.00; Bristol Co. Farmers' Fair, \$250.00; Blackstone Valley Agricultural Society, \$500.00; Bourne Agricultural Society, \$50.50; Becket Grange, \$21.00; Bedford Grange, \$40.00; Brimfield Grange, \$22.00; Burlington Grange, \$40.00; Chelmsford Grange, \$13.50; Deerfield Valley Agricultural Society, \$700.00; Essex Agricultural Society, \$996.00; East Bridgewater Grange, \$25.00; Franklin Co. Agricultural Society, \$1,200.00; Framingham Boys' and Girls' Club, \$49.50; Flintstone Grange, \$12.00; Greater Lynn Agricultural Society, \$500.00; Groton Farmers' and Mechanics' Club, \$550.00; Granby Grange, \$20.00; Hampshire, Franklin & Hampden Agricultural Society, \$1,200; Hampden County Improvement League, \$98.00; Hancock Grange, \$20.00; Holliston Grange, \$25.00; Heath Agricultural Society, \$149.00; Hingham Agricultural & Horticultural Society, \$74.75; Highland Agricultural Society, \$772.50; Hillside Agricultural Society, \$700.00; Housatonic Agricultural Society, \$1,200.00; Lunenburg Community Fair, \$120.00; Lanesboro County Fair, \$15.00; Littleville Agricultural Society, \$50.00; Lee Grange, \$19.00; Lowell Riding & Driving Club, \$100.00; Lenox Grange, \$47.00; Lexington Grange, \$20.00; Lunenburg Grange, \$20.00; Marshfield Agricultural & Horticultural Society, \$641.00; Martha's Vineyard Agricultural Society, \$400.00; Mansfield Grange, \$30.00; Merrimac Grange, \$30.00; Monomoy Grange, \$15.00; Natick Grange, \$15.00; Needham Grange, \$21.00; New Salem Grange, \$20.00; Northfield Grange, \$18.25; Norton Grange, \$30.00; Nantucket Agricultural Society, \$300.00; Otis Grange, \$17.00; Orange Boys' & Girls' Club, \$50.00; Oxford Agricultural Society, \$479.00; Plainville Grange, \$20.00; Plymouth County Agricultural Society, \$499.75; Ponkapog Grange, \$20.00; Princeton Grange, \$20.00; Reading Grange, \$25.00; Sandwich Agricultural Society, \$50.00; South Amherst Apple Show, \$183.00; Sterling Farmers' Club, \$75.00; Southboro Cattle Show & Fair, \$224.00; Southboro Grange, \$35.00; Stockbridge Grange, \$34.00; Templeton Grange, \$40.00; Thrifty Grange, \$24.00; Tyngsboro Grange, \$19.50; Union Agricultural & Horticultural Society, \$400.00; United Shoe & Machine Company, \$31.00; Wachusett Grange, \$30.00; Wendell Grange, \$30.00; West Stockbridge Grange, \$31.00; West Newbury Grange, \$27.50; Williamsburg Grange, \$35.00; Westminster Farmers' & Mechanics' Club, \$27.00; Weymouth Agricultural Society (Norfolk Co. Fair), \$400.00; Worcester Agricultural Society, \$1,200.00; Worcester N. W. Agricultural & Mechanics Society \$800.00; Worcester South Agricultural Society, \$700.00; Worcester County West Agricultural Society, \$800.00.

The Department offered prize money through fourteen Poultry, Pigeon

and Pet Stock Associations during the year 1925. Each show was inspected by a representative of the Department and a record kept of the number and character of exhibits.

The prize money was awarded as follows:

Amherst Poultry Association, \$149.00; Athol Poultry Association, \$73.00; Boston Poultry Association, \$495.00; Dressed Poultry & Egg Exhibit at M. A. C. \$12.00; Fitchburg Poultry Association, \$75.00; Lenox Poultry Association, \$114.00; Needham Poultry Association, \$151.00; Northampton Poultry Association, \$150.50; Paper City Poultry, Pigeon & Pet Stock Association, \$100.50; Springfield Poultry Club, \$182.50; Templeton Poultry Association, \$50.00; United Rabbit & Cavy Club, \$50.00.

SUMMARY.

Appropriation		\$30,000.00	
Balance, 1924		3,288.58	
			<hr/>
TOTAL		\$33,228.58	
Poultry Associations	\$1,900.00		
Agricultural & Hort. Soc.	18,328.25		
Community Fairs	498.00		
Granges	1,323.50		
Special Exhibits	5,995.26		
Boys' & Girls' Club Work	1,949.79		
Badges, Medals & Cups	933.05		
Lantern Slides	28.00		
Equipment	199.75		
Photography	127.50		
Mileage	90.00		
Fuel Exhibit	205.37		
TOTAL		\$31,578.47	
BALANCE			\$1,650.11

CONTROL WORK.

During December, material was prepared for the incoming session of the General Court. The Department made only two recommendations; one, to amend the law on plant pest control in order to clarify requirements about the white pine blister rust, and the other on the reclamation law, to improve that law in certain matters of detail. The first bill was enacted without substantial change but objections to the second bill led to its defeat in the House. According to regular practise, a record was kept of agricultural bills and the action of the Legislature upon them.

Cases prosecuted during the year numbered fifty-five, of which fifty-two resulted in convictions, one in an acquittal and two did not come to trial because summonses could not be served upon the defendants. The tabulation of these cases is given below. Oleomargarine and milk cases originate with the Division of Dairying and Animal Husbandry, apple grading and packing cases with the Division of Markets, and corn stubble cases with the Division of Plant Pest Control.

<i>Subject</i>	<i>Total Cases</i>	<i>Convictions</i>	<i>Acquittals</i>	<i>Fines</i>
Oleomargarine	5	5	None	\$200.00
Milk	2	2	None	75.00
Apple Grading	14	14	None	82.00
Corn Borer	34	31	1	22.00
TOTAL	55	52	1	\$379.00

NOTE: Two corn stubble cases did not come to trial because defendants could not be found.

In addition to these cases, one oleomargarine case tried during the previous year and appealed to the Superior Court was tried before a jury at Cambridge

in April, the prosecution being successful. A fine of \$100 was imposed and paid in the case.

The usual work of advising and assisting on legal questions arising in connection with the Department's work has been continued. Assistance has been given to almost all the divisions in various ways. Particular attention has been required by some of the problems of the State Reclamation Board and further information has been obtained about the laws relating to drainage in other states and the bearings of common law principles on drainage problems.

Recommendations for legislation to be presented to the 1926 session of the Legislature were in preparation as the year ended.

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The Commonwealth of Massachusetts

ANNUAL REPORT

OF THE

Commissioner of Agriculture

FOR THE

Year Ending November 30, 1926



DEPARTMENT OF AGRICULTURE

Commissioner of Agriculture

DR. ARTHUR W. GILBERT OF BELMONT

HYLDA M. DEEGAN, BOSTON, *Secretary*

Advisory Board Appointed by the Governor and Council

EVAN F. RICHARDSON OF MILLIS, Term expires November 30, 1927.

LESLIE R. SMITH OF HADLEY, Term expires November 30, 1927.

PETER I. ADAMS OF STOCKBRIDGE (HOUSATONIC), Term expires November 30, 1928.

HERBERT N. SHEPARD OF WARREN, Term expires November 30, 1928.

JOHN BURSLEY OF BARNSTABLE (WEST), Term expires November 30, 1929.

STUART L. LITTLE OF NEWBURY, Term expires November 30, 1929.

Organization of the Department

DIVISION OF DAIRYING AND ANIMAL HUSBANDRY—JOSEPH C. CORT OF READING, *Director*

DIVISION OF MARKETS—FREDERICK V. WAUGH OF WATERTOWN, *Director*

DIVISION OF ORNITHOLOGY—EDWARD HOWE FORBUSH OF WESTBOROUGH, *Director*

DIVISION OF PLANT PEST CONTROL—R. HAROLD ALLEN OF TAUNTON, *Director*

DIVISION OF RECLAMATION, SOIL SURVEY AND FAIRS—LESLIE R. SMITH OF HADLEY, *Director*

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The Commonwealth of Massachusetts

REPORT OF THE COMMISSIONER

PRESENT STATUS OF MASSACHUSETTS AGRICULTURE

The business of farming in Massachusetts is progressing satisfactorily. After many years of depression, it takes time to fully recover. The local demand for high-grade products has stimulated their production. A gradual change from general farming to the production of high quality specialties is taking place. Our best apples, eggs and poultry, truck crops and milk find a ready market.

The change from a long depressed industry needs capital and trained men and women. The Massachusetts Agricultural College and agricultural schools, as well as the members of boys' and girls' clubs, are supplying the latter and the banks should be aroused to more readily supply the former. The great outstanding educational achievement of the time is the enthusiastic work of the graduates of our county agricultural schools and members of the 4H Boys' and Girls' Clubs. There seems to be more young people going on the farms from the city than in the other direction at the present time.

NEW ENGLAND COUNCIL AND NEW ENGLAND MARKETING CONFERENCE

The New England Council initiated by the Governors of the six New England States is doing a very noteworthy work for Massachusetts, especially in agriculture. It recently arranged for and organized a New England-wide marketing conference. This conference has accomplished immediate results. All of the New England States are co-ordinating their marketing activities. Each of them has introduced into their respective legislatures a bill which, if enacted into law, will give uniform grades, standards and packages of farm products. A bill recommended by the Commissioners of Agriculture was introduced into the Massachusetts legislature and several slight modifications were made by the Committee on Agriculture. The bill passed in the following form. (A similar bill was introduced in the other five legislatures.)

AN ACT TO PROVIDE FOR ESTABLISHING GRADES AND STANDARDS FOR FARM PRODUCTS.

Be it enacted, etc., as follows:

Chapter ninety-four of the General Laws is hereby amended by striking out sections one hundred and seventeen A to one hundred and seventeen F, inclusive, and the heading "Onions", inserted by section one of chapter four hundred and thirty-eight of the acts of nineteen hundred and twenty-two, and inserting in place thereof under the heading "Farm Products", the six following sections:—*Section 117A.* The commissioner of agriculture, in this and the five following sections called the commissioner, may establish and promulgate official grades and standards for farm products, except apples and milk, produced within the commonwealth for the purposes of sale, and may from time to time amend or modify such grades and standards. Before establishing, amending or modifying any such grades or standards the commissioner shall hold public hearings in such places within the commonwealth as he shall deem proper. Notice of such hearings shall be advertised in a newspaper or newspapers of general circulation within the county where the hearing is to be held for three successive weeks prior thereto, and shall specify the date and place of each hearing and that it is to be held for the purpose of obtaining information with a view to establishing grades or stand-

ards for such farm products, if deemed advisable. The commissioner may determine or design brands or labels for identifying such farm products packed in accordance with official grades and standards established as aforesaid, and may cause to be printed said brands or labels and may dispose of the same at reasonable prices. A written application to the commissioner requesting permission to use said brands or labels and a written authorization thereof by the commissioner or a duly authorized assistant shall be a condition precedent to the use of such brands or labels. The commissioner may revoke or suspend the right to use such brands or labels determined as aforesaid whenever it appears on investigation and after a subsequent hearing before said commissioner or authorized assistant that such brands or labels have been used to identify such farm products not in fact conforming to the grade or standard indicated. *Section 117B.* Upon the establishment of such grades or standards and upon the proper determination of brands or labels, all in accordance with the provisions of section one hundred and seventeen A, notice thereof shall be published for three successive weeks in three newspapers stating the grades and standards so established and the brands or labels so determined, and the date on which such establishment or determination is to take effect. The commissioner shall distribute information relative to the grades and standards so established and the brands or labels so determined. *Section 117C.* After notice of the establishment of grades or standards and the determination of brands or labels as provided in section one hundred and seventeen B, it shall be unlawful to use a brand or label determined as aforesaid to identify such farm products as being of a grade or standard established as aforesaid unless such products are in fact of the grade or standard so established or before the authorization of the use of, or after the revocation or during suspension of the right to use, such brand or label, by the commissioner. Any violation of this section shall be punished for a first offence by a fine of not more than fifty dollars and for a subsequent offence by a fine of not more than two hundred dollars. Whoever obstructs or hinders the commissioner or any of his assistants in the performance of his duties under sections one hundred and seventeen A to one hundred and seventeen F, inclusive, shall be punished by a fine of not less than ten nor more than one hundred dollars. *Section 117D.* The commissioner may employ inspectors to inspect such farm products marked, branded or labelled in accordance with official grades or standards established and promulgated by the commissioner, for the purpose of determining and certifying the quality and condition thereof and other material facts relative thereto. Certificates issued in pursuance of such inspection and executed by the inspector shall state the date and place of inspection, the grade, standard, condition, and approximate quality of the farm products inspected and any other pertinent facts that the commissioner may require. Such a certificate and all federal certificates relative to the condition or quality of said farm products shall be prima facie evidence in all courts of the commonwealth of the facts required as aforesaid to be stated therein. *Section 117E.* The commissioner may prescribe rules and regulations for carrying out the purposes of sections one hundred and seventeen A to one hundred and seventeen F, inclusive, including the fixing of fees for inspections. *Section 117F.* The commissioner, in person or by deputy, shall have free access at all reasonable hours to any building or other place wherein it is reasonably believed that farm products marked, branded or labelled in accordance with official grades or standards established and promulgated by the commissioner are being marketed or held for commercial purposes. He shall also have power in person or by deputy to open any bags, crates, or other containers containing said farm products and examine the contents thereof, and may, upon tendering the market price, take samples therefrom.

Approved April 18, 1927.

SALE OF SEEDS—LEGISLATION

Massachusetts has never had a seed law. The result is that poor seed from surrounding states which have a law find their way into Massachusetts markets. My recommendation for seed legislation after a few minor changes, was passed by the legislature in the following form.

AN ACT TO REGULATE THE SALE OF AGRICULTURAL SEEDS.

Be it enacted, etc., as follows:

SECTION 1. Section one of chapter ninety-four of the General Laws, as amended by chapter one hundred and seventeen of the acts of nineteen hundred and twenty-five, is hereby further amended by adding at the end thereof the following:—

“Agricultural seeds” or “agricultural seed”, in sections two hundred and sixty-one A to two hundred and sixty-one L, inclusive, the seeds of Canada Blue grass, Kentucky Blue grass, Brome grass, fescues, millets, tall meadow oat grass, orchard grass, red top, Bent grasses, Italian rye-grass, perennial rye-grass, sorghum, Sudan grass, timothy, alfalfa, alsike clover, red clover, white clover, Canada field peas, cowpeas, soybeans, vetches, and other grasses and forage plants, buckwheat, flax, rape, barley, field corn, oats, rye, wheat, and other cereals, mangels, onions and vegetables which are sold, offered or exposed for sale within this commonwealth for use for seeding purposes therein.

“Noxious weed seeds”, in sections two hundred and sixty-one A to two hundred and sixty-one L, inclusive, the seeds of quack grass (*Agropyron Repens*), Canada thistle (*Cirsium Arvense*), dodder species (*Cuscuta Spp.*) and wild mustard (*Brassica Arvensis*).

“Weed seeds”, in sections two hundred and sixty-one A to two hundred and sixty-one L, inclusive, all seeds other than agricultural seeds as defined in this section.

“Inert matter”, in sections two hundred and sixty-one A to two hundred and sixty-one L, inclusive, all foreign matter other than seeds.

“Lot”, in sections two hundred and sixty-one A to two hundred and sixty-one L, inclusive, contents of any container, open or sealed, from which or in which agricultural seeds are sold, offered or exposed for sale.

SECTION 2. Said chapter ninety-four is hereby further amended by inserting after section two hundred and sixty-one, under the heading “Agricultural Seeds”, the following twelve new sections:—

Section 261A. Every lot of agricultural seeds of ten pounds or more, except as otherwise provided in sections two hundred and sixty-one B to two hundred and sixty-one L, inclusive, shall have affixed thereto, in a conspicuous place, on the exterior of the container of such agricultural seeds, a plainly written or printed tag or label in the English language, stating:

(a) The commonly accepted name of such agricultural seeds.

(b) The approximate percentage, by weight, of purity; meaning, the freedom of such agricultural seeds from inert matter and from other seeds distinguishable by their appearance.

(c) The approximate total percentage, by weight, of weed seeds.

(d) The name and approximate number per ounce of each kind of noxious weed seeds, which are present, singly or collectively, as follows:

(1) in excess of one seed in each five grams of seeds of grasses, alfalfa and clovers; (2) in excess of one seed in each twenty-five grams of millets, rape, Sudan grass and other seeds of similar size not specified in subdivision (1) or (3) of this paragraph; (3) in excess of one seed in each hundred grams of wheat, oats, rye, barley, buckwheat, vetches, soybeans, cowpeas and other seeds as large or larger than wheat.

(e) The approximate percentage of germination of such agricultural seed together with the month and year said seed was tested.

(f) Name and address of the vendor of such agricultural seed.

Section 261B. Mixtures of agricultural seeds of ten pounds or more

which contain not more than two kinds of such seeds which are present in excess of five per cent by weight of each kind, shall have affixed thereto, in a conspicuous place on the exterior of the container of such mixture of seeds, a plainly written or printed tag or label, in the English language, stating:

- (a) That such seed is a mixture.
- (b) The name and approximate percentage by weight of each kind of agricultural seed present in such mixture in excess of five per cent by weight of the total mixture.
- (c) Approximate total percentage by weight of weed seeds.
- (d) The name and approximate number per ounce of noxious weed seeds which are present singly or collectively in excess of one seed in each fifteen grams of such mixture.
- (e) Approximate percentage of germination of each kind of agricultural seed present in such mixture in excess of five per cent by weight, together with the month and year said seed was tested.
- (f) Name and address of the vendor of such mixture.

Section 261C. Mixtures of agricultural seeds, except as specified in section two hundred and sixty-one B, shall have affixed thereto in a conspicuous place on the exterior of the container of such mixture a plainly written or printed tag or label in the English language stating:

- (a) That such seed is a mixture.
- (b) The name of each kind of agricultural seed which is present in excess of five per cent or more by weight of the total mixture.
- (c) The approximate total percentage by weight of weed seeds.
- (d) The approximate percentage by weight of inert matter.
- (e) The name and approximate number per ounce of each kind of noxious weed seeds which are present singly or collectively in excess of one seed in each fifteen grams of such mixture.
- (f) Name and address of the vendor of such mixture.

Section 261D. Every lot of vegetable seeds shall have affixed thereto in a conspicuous place on the exterior of the container a plainly written or printed tag or label in the English language stating:

- (a) The kind of seed and variety.
- (b) Name and address of the vendor of such vegetable seeds.

Section 261E. Agricultural seeds or mixtures thereof may be marked "not tested" and seeds so marked or labelled shall have affixed thereto in a conspicuous place on the exterior of the container of each lot of such "not tested" seeds, a plainly written or printed tag or label in the English language stating:

- (a) That such seed is "not tested".
- (b) The name and address of the vendor of such "not tested" seeds.

Section 261F. Agricultural seeds or mixtures thereof shall be exempt from the provisions of sections two hundred and sixty-one A to two hundred and sixty-one L, inclusive:

- (a) When sold to merchants to be recleaned before being sold or exposed for sale for use for seeding purposes.

- (b) When in storage for the purpose of recleaning or not possessed, sold or offered for sale for use for seeding purposes within the commonwealth.

Section 261G. The commissioner of agriculture and his duly authorized assistants shall have authority to enforce sections two hundred and sixty-one A to two hundred and sixty-one L, inclusive, and to prosecute all violations thereof. Before any prosecution is begun by said commissioner or any of his duly authorized assistants, the parties concerned shall be given an opportunity to be heard before said commissioner or a person designated by him for such purpose. The parties concerned shall be given reasonable notice of the hearing, specifying the day, hour and place thereof, and accompanied by a description of the alleged violation.

Section 261H. The commissioner of agriculture, either in person or

by his assistants, shall have free access at all reasonable hours to each building or other place where agricultural seeds or mixtures thereof are stored, sold or offered or exposed for sale for the purpose of inspection of such seeds and, upon tendering the market price, may take samples of such agricultural seeds or mixtures thereof for tests and analyses. Such samples shall be thoroughly mixed and two official samples taken therefrom; each official sample shall be securely sealed. One of these official samples shall be held by the commissioner or his authorized agent at the disposal of the person named on the label as the vendor of the agricultural seed sampled, for six months after the results of the analysis have been reported as provided in the following section, and the other sample retained by said commissioner or agent for analysis.

Section 261I. The commissioner of agriculture shall cause such tests and analyses as he may specify to be made of samples collected under the preceding section in order to determine the quality of the seeds contained in such samples. To enable said commissioner to determine the trueness to type or variety of vegetable and other seeds he shall provide that field tests be made of such samples of seeds as he may designate and may publish the results of all such tests and analyses as are made in accordance with the provisions of this section.

Section 261J. The word "approximate" as used in sections two hundred and sixty-one A to two hundred and sixty-one L, inclusive, shall be defined in rules and regulations promulgated by the commissioner of agriculture.

Section 261K. Any person residing or doing business in this commonwealth shall have the privilege of submitting to the commissioner of agriculture samples of agricultural seeds for test and analysis, subject to such rules and regulations as may be adopted by said commissioner, including a reasonable charge or fee for such test and analysis. Receipts under this section shall be paid into the treasury of the commonwealth.

Section 261L. Whoever sells, offers or exposes for sale, any lot of agricultural seeds, or mixtures of agricultural seeds, without complying with the requirements of sections two hundred and sixty-one A to two hundred and sixty-one K, inclusive, or falsely marks or labels such agricultural seeds or mixtures thereof or vegetable seeds, or impedes, obstructs or hinders the commissioner of agriculture or any of his duly authorized agents in the discharge of the authority or duties conferred or imposed by any provision of said sections, shall be punished by a fine of not more than five hundred dollars.

SECTION 3. This act shall take effect on November first, nineteen hundred and twenty-seven.

Approved April 18, 1927.

RECREATIONAL FACILITIES IN MASSACHUSETTS

A concerted effort is being made to make Massachusetts a greater summer playground. Farmers are taking advantage of this movement by growing greater quantities of high quality summer vegetables and fruits, milk and poultry products for this itinerant trade. Roadside stands are increasing. Eventually these must have some regulation unless they organize among themselves and raise their standards.

FARM LABOR

The Department of Agriculture is of increasing helpfulness in supplying farm labor especially of the higher grades, farm superintendents, estate managers, etc. We are becoming more and more recognized as the clearing house of such work.

CO-ORDINATION OF AGRICULTURAL ACTIVITIES

The activities of the various agricultural agencies in the State have been notably harmonious. The fact that the Commissioner of Agricul-

ture is ex-officio a member of the Board of Trustees of the Massachusetts Agricultural College is of great assistance in co-ordinating its work with that of the Department of Agriculture. I recommend for the same reason, that the Commissioner of Agriculture be made ex-officio member of the Trustees of the County Schools which teach agriculture.

RECOGNITION OF AGRICULTURAL ACHIEVEMENT

The Department of Agriculture has perfected a plan for giving six gold medals each year to persons in the State who have achieved outstanding leadership. The medals are awarded each year by a board of awards made up as follows:

Commissioner of Agriculture, Dr. Arthur W. Gilbert; *Members of Advisory Board*, Peter I. Adams, John Bursley, Stuart L. Little, Evan F. Richardson, Herbert N. Shepard, Leslie R. Smith; *Director, Division of Markets*, Frederick V. Waugh; *Director, Division of Animal Husbandry*, J. C. Cort; *Representing the Massachusetts Agricultural College*, Prof. George L. Farley; *Representing New England Homestead*, Glenn C. Sevey.

The persons who received these medals for 1926 and a brief record of their work follows:

HORACE A. MOSES, MITTINEAGUE, MASS.

Mr. Horace A. Moses was born on a farm near Ticonderoga, New York. His early life was spent on the farm and his education was acquired in the district school at South Ticonderoga. He later attended Troy Conference Academy at Poultney, Vermont.

At the age of thirty, Mr. Moses organized the Mittineague Paper Company and in 1910 purchased interest in the Woronoco Paper Company. A consolidation of these two companies resulted in the formation of the Strathmore Paper Company of which Mr. Moses is President and Treasurer.

Mr. Moses has always been interested in farm life. He practically formed the Hampden County Improvement League in 1912 and has served continuously as its President. He was active in the creation of the Eastern States Exposition and served as Chairman of the Executive Committee for a number of years.

He served as an active member of the Executive Committee of the Eastern States Farmers' Exchange and a Trustee of the Eastern States Agricultural Trust and is now an officer in the Eastern States Agricultural Credit Corporation.

The Junior Achievement Hall, located on the grounds of the Eastern States Exposition, is a gift from Mr. Moses. He also gave the new Hampden County Improvement League Building situated on the Eastern States Exposition grounds.

Mr. Moses does not consider the making of money the only objective in life. His deeds express a resistless energy and passion to use his resources to the best advantage in the interest of his fellowmen.

WYMAN BROTHERS, ARLINGTON, MASS.

For over half a century the name of Wyman Brothers has stood for quality vegetables. The farm now occupied by the Wymans has been in the Wyman family for generations.

The brothers, Daniel and Franklin, have made the farm what it is today, almost a nationally known institution among market gardeners. Two sons, Arthur P. and Charles F., and a son-in-law Stephen M. Richardson now assist in the active management of the farm operations.

Standard high quality vegetables have always been produced. Their goods sell at top prices at the market. Their high quality is recognized and sought after.

The Wyman strains of most of the important vegetables are recognized as being among the very best. They grow fourteen different kinds of vegetable seed, principally for their own use. The surplus seed is made available to others in the vegetable industry.

The Wyman Brothers have always been eager to adopt improved methods and to co-operate with the Massachusetts Agricultural College in making extensive tests. They were among the very first to spray celery for the control of killing blight. They are now wrapping their celery in parchment paper.

Both brothers have served their town as members of the Town Council on numerous occasions.

WALTER HURLBURT, ASHLEY FALLS, MASS.

Walter Hurlburt is associated with his father, Ralph Hurlburt, in the ownership and management of Hurlwood Farm. He served in the World War as a private and graduated from the four-year course at Massachusetts Agricultural College in 1920. He commenced active work on the home farm in the fall of 1920. At that time the herd consisted of thirty milking cows. No calves were raised, replacements were made by purchase. Walter raised a few grade heifers from the best cows the first year. He bought six heifer calves from James Poor of North Andover, Mass. during the second year and had all of these calves tuberculin tested. The balance of the herd were tuberculin tested in the spring of 1923.

The Hurlburts' original investment in beginning the pure bred business was \$1,800. Today they have a herd of forty-three head entirely clean from tuberculosis that could not be purchased for less than \$7,000. In 1925 the average on twenty milking animals was well over 10,000 pounds each.

BENA G. ERHARD, HYANNIS, MASS.

Miss Erhard was born in East Milton and graduated from the Milton High School in 1915. She graduated from the Massachusetts Agricultural College in 1919.

The same year she was appointed County Club Agent in Hampshire County, serving for four years. She left Hampshire County and took up county club work in Barnstable County, where she completed three years of work.

After going to Barnstable County she organized the 4H Service Club, an organization made up of the young people of the Cape.

Several state championships were won by Barnstable County boys and girls during the time that she was County Club Agent in this county, and two of her girls were awarded gold medals by the Massachusetts Department of Agriculture. Another girl had the honor of representing the county at the National Congress this last year.

MILDRED CAHOON, CENTERVILLE, MASS.

Mildred Cahoon of Centerville, eighteen years of age was awarded a gold medal by the Massachusetts Department of Agriculture in 1926.

She became enrolled in club work in 1920, continuing in 1921, 1922 and 1923.

1924 was her fifth year and she received an exhibit score of 99.5% which gave her second place in the country. In the fall of this year she was sent as one of the five delegates from the Cape to attend Camp Field at Brockton Fair for the week.

In 1925, as a sixth year garment club member she was president of the club in the high school. In addition she also had a club of twelve girls in her own home community. This club finished 100%.

In 1926 she entered in the supper club and won second place in her town. She completed her own project and acted as local leader for a group of

younger girls, bringing them through 100%. She was awarded county championship winning a second trip to Camp Gilbert.

At the time of her graduation from High School she was awarded a \$250 scholarship from the Faunce Farm Trustees at Sandwich. She entered Massachusetts Agricultural College in the fall of 1926. During the summer she was a canning club member, receiving an exhibit score of 95%, winning first place in her town. In October she entered the home economics scholarship exhibition and judging contest at Brockton Fair and won a \$75 scholarship.

In 1927 she again enrolled in the garment club as an eight-year member.

WILLIAM PIPER, HOLDEN, MASS.

This young man enrolled in club work when nine years old and was a member of the Garden Club one year. He was named Champion of the County Pig Club in 1922, and was President of local poultry club for five years.

William won a gold medal for proficiency in the poultry demonstration at Barre Fair and Boston Poultry Show in 1922.

This ambitious club member won sixty-five prizes on birds during the past five years, including twenty-one firsts and one sweepstakes. He exhibited birds at Boston Poultry Show, Eastern States Exposition, New England Fair, Waltham, Gardner and Barre Fairs, Worcester and Springfield Poultry Shows and won three prizes in judging contests at New England Fair and Boston Poultry Show.

The National 4H Club Pin in 1925 was awarded to him for fine club spirit and fine service to club work.

He maintained successful local leadership of the Holden Poultry Club three years and was awarded a certificate for nine years of 4H Club membership in 1926.

He was awarded a silver cup by Worcester County Trustees for most outstanding 4H Club leadership in Worcester County, and more recently a prize in the National 4H Club Leadership Contest sponsored by the Farm Journal Company of Philadelphia.

CHANGES IN STAFF

On August 31, 1926 the Department suffered a loss because of the resignation of Willard A. Munson. Director of the Division of Markets, to accept the position of Director of Extension Service at the Massachusetts Agricultural College. Mr. Munson accomplished some very outstanding pieces of work and made many friends while associated with the Department. He is generally recognized as the outstanding marketing specialist in the East, and we are very gratified to know that he is to remain in Massachusetts and continue his work in a definite field here.

Frederick V. Waugh succeeded Mr. Munson on September 1, 1926. Mr. Waugh is a graduate of the Massachusetts Agricultural College. He was assistant marketing specialist of the State of New Jersey and later joined the experiment staff of the Connecticut Agricultural College in the same capacity. He has pursued graduate work at Harvard and Columbia Universities and is well fitted to carry on the work so well directed by Mr. Munson.

John W. Plaisted resigned on April 10, 1926, to accept a position with a well known law office in Boston. While in the Department, Mr. Plaisted made a good name for himself in straightening out some of the difficulties in the administration of the Massachusetts law, with particular respect to certain amendments which clarify important points in the administration of the statutes.

Daniel J. Curran succeeded Mr. Plaisted on October 1, 1926. Mr. Curran is a graduate of the Massachusetts Agricultural College and of Suffolk Law School. His training and experience are admirably adapted to the position to which he has been appointed.

Francis W. Small resigned on April 15, 1926, to accept a position with a large commercial firm. Russell I. Prentiss already employed in the Department was appointed to fill the position made vacant by Mr. Small's resignation.

Miss Marion L. Speer resigned on August 31, 1926, to be married.

Miss Eleanor W. Bateman succeeded Miss Speer on October 11, 1926. Miss Bateman is a graduate of the Massachusetts Agricultural College, and has had excellent work in marketing at the Massachusetts Agricultural College and as an employee of the Women's Reformatory at Sherborn.

DIVISION OF DAIRYING AND ANIMAL HUSBANDRY

The work of the Division of Dairying and Animal Husbandry is about equally divided between dairy products and livestock. Effective work has been done toward improving the methods used in producing milk and controlling the sale of dairy products. From the standpoint of livestock, an effort has been made to improve the management, care and feeding of all classes of livestock, including dairy cattle, beef cattle, sheep, hogs and poultry.

INSPECTION WORK

The inspection work of the division consists mainly in the enforcement of the oleomargarine laws. The Department of Public Health has equal powers and does most of the work in enforcing the laws covering milk and butter.

The inspections for the year totaled 2,573 with 140 samples taken. A total of 25 cases were tried, resulting in 22 convictions, making 12 more cases than reported for the previous year.

QUALITY OF MILK

The campaign to improve the keeping quality of milk produced on Massachusetts farms was conducted along the same lines as the previous year. Samples were taken of the milk from 1,495 farms and 268 farm inspections were made. A complete survey was made of the milk supply of Springfield originating in Massachusetts. The results of the tests made with the reductase outfit on the samples from this supply showed that a very large percentage of the milk coming into Springfield was of good keeping quality. Partial survey of the city of Lawrence was made.

HOGS

An effort was made to improve the methods of raising hogs in the State by conducting a Ton Litter Contest among the State Institutions farms. This contest had as an object the making of a ton or more of pork with one litter of pigs in 180 days' time. This provided a measure of the productive ability of a sow and aids in the selection of good breeding sows. It also gave valuable information on the care, feed and management of the litter. Twenty-three litters were entered from eleven Institutions. Only three were successful in reaching the desired weight:—

<i>Institution</i>	<i>Number of pigs</i>	<i>Total weight</i>	<i>Average weight per pig.</i>
Northampton State Hospital	11	2,385 lbs.	216.81 lbs.
Grafton State Hospital	9	2,115½ "	235.05 "
Monson State Hospital	11	2,005½ "	182.31 "

The contest will be conducted again in 1927 and enlarged to include farmers.

HORSES

Members of the Division assisted in conducting the first Commercial Horse Show at Eastern States Exposition, Springfield. They also helped with the Dynamometer Contest at the Springfield and Worcester Fairs.

POULTRY

The Division co-operated in the work of the Massachusetts Association of Certified Poultry Breeders by employing Mr. C. E. Brett for a short period to assist in the work of flock inspection. The Association is doing excellent work with the flocks by culling, testing for white diarrhea, and supervising of the trap testing. The result of the work is beneficial to the poultry industry of the entire state. The following brief report was made by Mr. Oliver S. Flint, Manager of the Massachusetts Association of Certified Poultry Breeders:—

“The Association became a live organization in the fall of 1924. Active work began the latter part of November. During that season 26,000 birds in 43 flocks were individually handled and banded with Association bands. Although the Association began in a modest way with no extensive amount of publicity, it enjoys the reputation of being the best Association of its kind in the country today. Approximately 400,000 day-old chicks were sold by members the first year with an average mortality of 5%.

“In September, 1925, certification of birds was begun for the 1925-26 season. Interest had grown to such an extent that 30 new members were admitted and the total number of birds banded increased to 42,000. On January 1, 1926, the Association also started their Record of Performance work which pertains to the records made by birds being trap-nested on the owners' farms. The rules are patterned very largely after the plans of the Canadian Record of Performance which is working out so successfully. Flocks entered are subject to unannounced inspection at any time by some authorized person. Ten members availed themselves of this branch of the Association work and 2,600 birds were entered. The largest flock had 721, the smallest 23 birds. More than 700 birds will have records of 200 eggs or more. The highest record noticed to date was 297 eggs.

“During the past season 27,093 birds have been banded, and it is anticipated that the work planned for the remainder of this season will unquestionably bring the number certified for the year to over 55,000.

“Last season over 500,000 day-old chicks were sold by members. The average mortality was 11.5%.

“The Association was formed to promote the poultry industry of the State by encouraging better poultry practices and developing sources of superior quality chicks, eggs and breeding stock.”

SHEEP AND WOOL

The Division assisted in the organization of the New England Sheep and Wool Growers' Association and the Massachusetts Sheep Breeders' Association. The purpose of both these organizations is to encourage the growing of more Sheep. A number of very successful meetings were held and interest in Sheep raising seems to be increasing.

Mr. C. D. Richardson, Sheep Specialist for the Department, submits the following report:

“Our activities in the interest of sheep husbandry have covered several lines of work during the year.

“In the early spring we were able to assist the farmers in selling several hundred early spring lambs, at an average price of 30 cts. a pound live weight. Quite a few of these lambs weighed from 35 to 50 lbs. There is a growing demand for early native lambs and, although the number in this State has increased, several carloads are shipped in to Massachusetts markets each year from outside the State.

"During the spring and summer months we assisted in the pooling of 22,800 lbs. of wool, 15,600 lbs. of which were made into all virgin wool blankets. There seems to be an increasing demand for these blankets, as orders have been received this year from 13 different States. The farmer received a net return of 61 cts. when he retailed his own blankets and 51 cts. when he sold the same at wholesale under this pooling arrangement, as compared with 32 to 38 cts., which were the prices offered during the summer months.

"I have been called upon to assist in the purchase of 360 sheep during the year, and many times have been asked for advice on the care and management of the flocks by both the beginners and the older breeders. I have addressed 15 meetings on the care and management of the flock, wool and lambs and have looked over several tracts of land at the request of owners to determine their fitness for sheep raising. There seems to be a keener interest in the sheep business throughout the State."

REPORT OF THE DIVISION OF MARKETS

PLANS AND PROCEDURE

The aim of the Division of Markets is to encourage the marketing of farm products in an efficient and orderly manner. As our marketing system becomes more and more complicated, it is impossible for the great majority of the producers to come in direct contact with the consumers. It is to the interest of both producers and consumers that food products are produced, graded, packed and sold in a way which will assure the market of farm products of the type and grade demanded at the time they are wanted.

The Division of Markets is in constant touch with farmers and dealers and is able to give reliable and accurate information concerning market conditions. It can also make suggestions for the improvement of marketing methods. Since its organization in 1920 this Division has, under the able leadership of Mr. W. A. Munson, gained the confidence of the producers and the wholesalers of the state. The market reports of the Division have a reputation for being reliable. Suggestions for improving marketing methods have been carefully considered. The enforcement of grading regulations has given the trade increased confidence in Massachusetts farm products.

The market reports are sent out in three ways: by mail, newspaper and radio. Anyone in the state who is interested in current market conditions and prices can get up-to-date information from trained market reporters. The result is that farmers are able to ship to market at the most favorable time, and consumers are able to adjust their buying to the best advantage. Accurate market reports have been instrumental in lessening the suspicion formerly associated with the commission business. Farmers now are in close touch with market prices.

Massachusetts farmers are producing for one of the best markets in the world. The market wants food of high quality and is willing to pay to get the best. Boston receives hundreds of carloads of fresh fruit and vegetables from the South and West. Much of the shipped-in products comes in during the winter and early spring months before local farm products are on the market. The figures for recent years, however, show that the competition from outside producing regions has been growing more important during the local producing season. This is due largely to the fact that other producing regions have developed certain varieties adapted to market demand, and have graded and packed them in such a way that the market prefers them to the local product. In order to successfully meet this growing competition it will be necessary to establish grades and standards for locally grown farm products and to identify these products in such a way that the dealers and con-

sumers will know the best quality of Massachusetts fruit and vegetables by distinctive marks or brands.

The enforcement of the Apple Grading Law has enabled the Massachusetts farmer to compete successfully with western fruit. The dealer or consumer who buys a box of locally grown apples is assured that they will be of the quality stated and that the apples in the bottom of the box will be as good as those on top. Because of this fact the market is taking larger quantities of Massachusetts apples each year and less of western apples.

There has been considerable interest this fall in the roadside market business. The roadside market offers the farmer an opportunity to sell directly to consumers. Many dealers have taken advantage of this situation and have built stands in the country and are selling farm products in competition with the farmers. The fruits and vegetables sold at these dealers' and peddlers' stands are often old and of poor quality. On Sundays many city dealers sell on the roadside the week's surplus of fruits and vegetables from the city store. Consumers who have bought farm produce of poor quality at these stands and have paid high prices often are discouraged from buying at roadside stands. The Massachusetts Roadside Stand Association is attempting to get members all over the state. Only farmers are eligible for membership in the association, and the association sign, an ear of corn, identifies the market as a genuine farmer's market. The association has adopted certain rules and regulations for the conduct of the roadside business. If the plan works well it will provide a means of identifying to consumers stands which sell their own farm products and which are honest and fair in their dealings with the public.

A number of research studies in marketing are being made. These are centered around the problem of discovering market demands and the factors affecting market prices. The goal is a better adjustment of production to demand both as to quantity and as to type and grade.

Following are brief statements of the projects carried on by the Division of Markets during 1926.

WHOLESALE MARKET NEWS

Farmers' Produce Market Report. Our daily market news service, covering the farmers' produce markets in three of our principal cities,—Boston, Worcester, and Springfield,—has been maintained throughout the year. Regular weekly letters outlining market news of particular interest during the week have also been issued regularly from Springfield and Worcester as heretofore.

The inauguration of a radio broadcast service of the Boston report during the past year has increased the scope of the distribution of our market news. The Boston report is also distributed by mail and through the Associated Press.

A continuance of pleasant co-operative relations with the daily press in Worcester and Springfield has enabled us to maintain the very satisfactory distribution of market news from those cities through the newspapers. The Springfield reports are also distributed by mail. The Worcester office maintains both a mail and radio service.

Apple Market Reports. The Special Apple Market Report has been continued on its regular weekly and semi-weekly schedule during the season from August 1 to April 1. In response to requests as outlined in the Ten Year Program of the Massachusetts Fruit Growers' Association, this Division is attempting, as time and personnel permits, to enlarge the scope of this report. In accordance with this policy a weekly report from Providence, Rhode Island, has been added to our regular service from Boston, Worcester, and Springfield. A considerable quantity of Massachusetts apples is sold on the Providence market.

There is a very apparent need for increased attention to the reporting

of farm prices of apples during the picking and packing season when many of our apple producers are selling their crops to country buyers. It is hoped that facilities may be made available for this purpose.

Plans have been made whereby a regular radio broadcasting service of this report will be carried on. The mail service has been maintained as usual. In the distribution of mail reports of this service, as is the case with all our market reports the subscriber pays the cost of postage.

Supplementary Reports. Our supplementary market news services, covering weekly reports on the Brighton Livestock Market and Hay, Straw, Grain and Feed prices, have been continued throughout the year.

RETAIL MARKET NEWS

Many of our most perishable fruits and vegetables are produced during a short season. They come on the market in large quantities at certain times and often cause gluts and low prices. The well-informed consumer can often save money and also get the best quality of products by buying during these periods. The farmer also gains if consumption can be stimulated to relieve the market situation.

The weekly retail reports are designed to keep consumers informed of market conditions. They call attention to the proper time to buy for canning or storing and also suggest new ways of using certain food products.

Through the co-operation of the Massachusetts Federation of Women's Clubs opportunity has been given to broadcast the retail market information from radio station WNAC on Wednesday mornings. Beside the thirty thousand members of the WNAC Women's Club, there are many non-members, both men and women, who "listen in" on these morning programs. Radio station WTAG broadcasts the Worcester retail market reports. The reports in Worcester and Springfield are published in newspapers of general circulation.

The following organizations are co-operating with the Division of Markets to furnish timely recipes and menus: The Massachusetts Federation of Women's Clubs, Department of the American Home, the Hampden County Improvement League, and the Worcester County Extension Service.

APPLE GRADING LAW

A policy of increasing stringency of enforcement of the Apple Grading Law, outlined a year ago, has been adhered to, particularly in respect to that part of the law which requires that the faced or shown surface shall give a fair representation of the contents of the package.

Slight revisions in the law, made by the 1926 legislature, have also made necessary some educational work for the purpose of explaining these changes.

In addition to the regular administrative work in connection with the enforcement of the Apple Grading Law, an active part has been taken in the conferences held with representatives of the other New England States for the purpose of establishing uniform legislation for New England.

CROP REPORTS

The Division of Markets is continuing its co-operative relations with the New England Crop Reporting Service. This organization makes available to farmers, dealers and to the general public, current information concerning crop acreage, condition, production, and prices, the numbers and value of livestock, and the outlook for the production of farm products. The work is carried on by well trained statisticians who are in close contact with farmers in all parts of New England.

During the past year the reports on livestock have been enlarged and made more accurate. The reports of the Crop Reporting Service have been tested for accuracy by comparison with figures of the various state

departments of animal industry. The Crop Reporting Service has also helped to plan, conduct, and analyze a survey of apple orchards which gives a more accurate basis than has been available for estimating the apple crop.

Plans are now being discussed for enlarging the reports to include poultry and eggs and market garden products. These commodities are among the most important ones in New England, and at present we have no adequate reports with which to analyze market conditions and to estimate probable price changes.

ROADSIDE MARKETS

In response to many requests from the public and from roadside stand owners, the Division of Markets, in co-operation with the Middlesex County Extension Service, made, last fall, a survey of roadside markets along the principal roads of the state. The survey showed that the number of stands was increasing rapidly, but that the farmers were suffering from the unfair competition of dealers and peddlers who handled inferior produce which was bought in the city and sold as fresh farm produce. This unfair competition of unreliable dealers has lost a good deal of trade to the legitimate stand owners.

There are two or three methods which could be used to regulate the roadside stand business. The one which seems to offer the greatest possibility is the one which has been undertaken by the Massachusetts Roadside Stand Association. This association is an organization of farmers who have agreed to carry on their roadside business in a fair and honest way. They have adopted a sign to identify to the public the stands which agree to these rules.

At the request of the association this Division has agreed to inspect the stands of the association members occasionally and to help enforce the rules.

STUDIES IN MARKETING

Receipts and Sources of Boston's Food Supply. A bulletin is now being prepared to show the receipts of vegetables, fruits, butter, cheese, eggs, poultry, livestock, dressed meats, milk, flour, grain, sugar, and tea in Boston during the year 1926. The tables in this bulletin will be comparable with those published in previous years. This material is valuable as a basis for research studies. It is used by agricultural colleges, farmers, teachers in domestic science, and marketing officials in other states.

Quality Factors of Vegetables. A study was begun during 1926 to determine the important quality factors affecting the prices of vegetables in the market. Such a study will give the basis for grades and standards. A trained man was put on the market to make a record of the sale price of various lots of vegetables and to grade out these lots and make a record of the defects, the size, color, pack, and other factors which might be important from the market standpoint. This study is now being analyzed. It should indicate the amount the market will pay for quality. Then considerable research work will be necessary to find out how to grow the best quality and also to discover what quality is likely to give the greatest net return.

Study of Prices. Prices of potatoes, apples, and hay have been tabulated for each week since the year 1889. These prices are being analyzed to find the important factors which have caused high or low prices. Such factors as the general level of wholesale prices, the trend of prices and production, and the supply of the commodity available in various parts of the country have been important in causing price changes. A multiple correlation study will determine what factors are important indicators of price changes and will give a basis for making a forecast of probable market changes.

Massachusetts Farm Census. The 1925 Census figures have been tabulated by towns, and charts have been prepared to show the location and amount of the various agricultural industries in Massachusetts.

Bulletin on Asparagus Marketing Facts. Just before the opening of the asparagus season a 50-page mimeographed bulletin entitled "Asparagus Marketing Facts for Massachusetts Growers" was issued.

The object of this bulletin was to present certain basic facts in connection with the asparagus industry, in order that growers and dealers might be better able to interpret crop and market reports.

This bulletin discussed production trends in Massachusetts and in the other states which ship to the Boston market; marketing practices on the Boston market; characteristics of Boston market demand and other relative facts. Much of the statistical material was supplemented by a graphic presentation in chart form.

CO-OPERATIVE RELATIONS

There are in Massachusetts, as in most states, many agencies interested more or less in the marketing of farm products. This division has been able to co-operate with many such agencies in carrying out marketing projects. It would be impossible in this report to list all the agencies, such as small farmers' associations, which have been in contact with this Division during the year.

New England Council. The New England Council, through its agricultural committee, has been interested in promoting grades and standards for farm products. This committee has co-operated with the Massachusetts Department of Agriculture in calling meetings to discuss the situation. The final meeting, held in Boston, was attended by farmers and farm leaders from all parts of New England. An opportunity was given for the different commodity groups to discuss their problems. The meeting resulted in the adoption of a grading program to be carried out by the New England states. The first step will be to get authority for the Commissioners of Agriculture in the six New England states to establish voluntary grades for farm products. It will then be possible for commodity interests in the six states to get together and decide on uniform rules and regulations for the grading of farm products.

National Apple Week. The Division of Markets co-operated with the Massachusetts Chamber of Commerce in the promotion of Apple Week from November 1 to November 6, 1926. The attempt was made to stimulate the demand for apples by radio talks and newspaper articles. The superior quality and grade of the New England apples was especially stressed. Window displays were put on in many cities and the Department of Agriculture awarded ribbons for the best displays. Silver cups were presented to the cities or towns which put on the best program for advertising apples.

U. S. Department of Agriculture. Through the co-operation of the U. S. Department of Agriculture, the Massachusetts Division of Markets is supplied with current statistics covering prices in central markets, crop acreages, and yields, carlot unloads and receipts, amount in storage, etc. These reports enable the Division to keep in constant touch with supplies, prices, and market outlooks all over the country, and gives an opportunity to give the readers of our market reports prompt and reliable news of market conditions outside Massachusetts.

The U. S. Bureau of Agricultural Economics is in close touch with marketing work in all parts of the country. Our relations with them have been pleasant and their advice has been helpful.

The New England Research Council is proving its value as a co-ordinating agency which is unifying the marketing research work of the New England states.

The New England Crop Reporting Service is doing valuable work in making available reports on acreage, condition, yields, and value of farm

crops. A report of the Crop Reporting Service appears in another column.

Massachusetts Agricultural College. Our relations with the Massachusetts Agricultural College, the Extension Service, and the Experiment Station have been cordial. During the past year we have had numerous opportunities to work with the Department of Agricultural Economics and with many of the County Agents.

REPORT OF THE DIVISION OF ORNITHOLOGY FOR THE FISCAL YEAR ENDING DECEMBER 1, 1926

This division functions under an Act that calls for collection and dissemination of the information regarding birds, their habits, their distribution, their food and their economic value to the people of the Commonwealth. Under the law also the division is authorized to give advice to the people and the legislature regarding the protection of useful birds. A full report of the work of the division for the year would cover all these activities.

INFORMATION

No bulletins such as were issued in former years are being published now. Therefore, information has been disseminated by articles in the newspapers, by radio, by lectures to various organizations, and by the regular mimeographed monthly bulletin entitled "Items of Interest", which is sent to about 600 accredited observers of the division on the first day of each month. This bulletin has been continued throughout the year. As most of the former printed bulletins of the division are out of print, those of the United States Department of Agriculture have been utilized in disseminating information to questioners.

The second volume of the "Birds of Massachusetts and Other New England States" has been written, and the color plates have been made during the year. The half-tone plates and cuts are not yet finished. The final copy of the manuscript of the volume is under way.

CO-OPERATION

The division has co-operated during the year with the Federation of the Bird Clubs of New England, the Massachusetts Audbon Society and the Massachusetts Fish and Game Protective Association and also with the Secretary of Agriculture at Washington in securing measures and reservations for the protection of birds. New reservations for bird protection have been established in Massachusetts, and the Director has served as usual as a member of the Advisory Board which revises the Federal regulations for the protection of migratory birds which are finally approved by the Secretary of Agriculture at Washington and promulgated by the President of the United States. The revision of these regulations in the past few years has resulted in greater protection for migratory birds throughout the United States and Canada, as under the treaty with the Imperial Government of Great Britain, Canada joins the United States in regulations similar to ours.

HEATH HEN

The annual inspection to determine the status of the Heath Hen, now nearly extinct, indicated that there might be nearly fifty birds still alive. An unusual autumnal flight of Goshawks, however, probably has resulted in a considerable decrease in the numbers of these grouse.

REPORT OF THE DIVISION OF PLANT PEST CONTROL

NURSERY INSPECTION

There has been little, if any, change in the policy and method of inspection during the season of 1926.

It is of very great interest to the nurserymen of Massachusetts as well as to the inspection service to have the Eastern Plant Conference Board functioning smoothly at this time. This Board was recently formed to act as a clearing house where problems arising between individual States or between a State and the Federal Government could be ironed out; also to act on State questions, such as quarantines between States. It is recognized that State quarantines are sometimes impracticable and that oftentimes the cause which might seem to necessitate a quarantine can be eliminated in conference. Meetings have been held this year which were well represented by the members—consisting of two from each State. It has been conceded for a long time that one of the greatest hindrances and a great inconvenience to the nurserymen was the filing of bonds and payment of license fees to certain States before nursery business could be transacted therein. At a recent meeting of the Eastern Plant Conference Board it was voted unanimously that these practices should be eliminated, and we look for the various States to make the necessary changes in their laws to bring this about.

The successful culture of trees and shrubs has become a closely contested battle against insects and diseases. Plants are subject to their attacks thru all stages of growth. Very few persons realize the immense loss annually caused by pests. It is because of this loss that the inspection of nurseries is so necessary.

The field inspection started in May with the examination of the pines for white pine blister rust. A small number of pines were found infected, but as the previous reports have indicated, it is to be expected that with the blister rust so prevalent throughout Massachusetts, we must expect to find infection in the nurseries until proper safeguards are established. To this end, we are maintaining around the large pine growing nurseries, a Ribes-free zone. This zone or area eliminates all red currants and gooseberries for a distance of 1500 feet from the nursery, and black currants for a distance of one mile. It is planned to establish similar zones around all nurseries as funds and time permit. The black currant, *Ribes nigrum*, is recognized as a serious menace in that it is very susceptible to the white pine blister rust. Because of its susceptibility, the Department has deemed it wise to declare this plant a public nuisance and recommend its elimination. The program for such elimination has not as yet been outlined, but it is hoped that a great deal will be accomplished through a publicity campaign.

During July and August, the annual summer inspection of the growing stock was made by a force of ten inspectors. Conditions on the whole were very satisfactory, and less scale infested plants were noted. It is apparent that less deciduous stock is being grown than in previous years, and while the acreage is fully as large as formerly, the space is now being used for the growing of evergreen stock. Again this year, the gypsy egg masses were found to be very prevalent on Cape Cod and in parts of Bristol County. However, this pest has apparently been eliminated from Berkshire County, and the Government has seen fit to raise the quarantine there.

A check of the property surrounding the nurseries showed them to be quite free from pests, but where any were noticeable, proper steps were taken to have them eradicated.

The Satin Moth which last year established itself as far west as Worces-

ter, was found in 34 additional towns, extending now as far west as Athol on the northern border, and Brimfield in the southern part of the State. While the Satin Moth has proved itself to be a free flier, thus spreading rapidly, it can easily be controlled by spraying with arsenate of lead during the time the caterpillars are feeding. So far this insect has confined its attacks to willows and poplars, and a quarantine prohibiting the shipment of these trees from the infested area is still in force.

During March and April scouting was carried on to determine the area infested by the Oriental Hag Moth. No increase was found, with the exception of a very small area in Revere and Chelsea. This insect constitutes a minor problem in that it has been established here for more than 20 years and is still confined to a very small area.

The usual number of importations of nursery stock was received from various States, as well as a limited number from Europe. The fact that in years past, shipments not up to Massachusetts standards were destroyed or returned to the consignor at his expense seems to have been well known, with the result that this State is now receiving, in most cases, exceptionally clean stock.

A larger number of agents' licenses were issued this past year than ever before, and the increase has been noticeable in the past few seasons. The licenses are issued to dealers who buy and resell nursery stock, and are distinct from the nurseryman who is a grower of stock. It is necessary for the agent, before being granted a license, to file with the Division a list of the nurserymen from whom his stock is purchased.

EUROPEAN CORN BORER

The control of this insect continues to be a very serious problem in Massachusetts, although it is causing a great deal more concern in the West where it is a menace to the corn belt. While the insect in Massachusetts is two-brooded as compared with the single-brooded Corn Borer of Canada and the West, Massachusetts has been fortunate so far in its control. In a large measure this might be due to the law which requires that all corn stubble be plowed under by December 1st, of the year of its growth and to some extent to weather conditions and parasites.

Last year over 200 violators of this law were summoned into court and found guilty. The penalties varied from the offenders being placed on probation to fines of \$25 for each violation. There seems to be no question but that this law is well known, and in the majority of cases respected. It causes little if any hardship to the farmer in this State, and its enforcement at this time seems wise. A careful check will be made to ascertain any further violations and in all probability the Department will ask that the violators be fined rather than placed on probation for second offenses. The Division has eight inspectors employed for this check-up work. A great deal of publicity was afforded the law this year by disseminating copies of it through the mails. Ninety thousand copies were distributed in this manner, largely through the rural carriers. The late spring and a native parasite were very effective in reducing the infestation this year. Records show that there was a 38% decrease of infestation in 1926 as compared with the year previous. Careful scouting failed to disclose any increase in the infested area. It is quite evident that the plowing has been very instrumental in checking the spread and the Division hopes that the regulations will be carried out by every person who grows corn. One should not lose sight of the fact that while the insect has decreased in Massachusetts, it has at the same time caused a great amount of damage in Canada and in some of the Western States and that a big problem confronts the farmer in these sections.

The Division has, as in years past, co-operated with the United States Department of Agriculture in maintaining an office in the Boston Mar-

ket where an inspection is made of all quarantined products consigned to points outside of the infested area. This quarantine is operative from June 1st to December 31st.

APIARY INSPECTION

The activities of the inspection season commenced in May, as normally. Those employed as Deputy Inspectors were:

Mr. Fred Challet, Northampton (Connecticut Valley).

Mr. Charles N. Ellis, Westwood (South of Boston).

Mr. Benjamin A. Hildreth, Sherborn (Worcester County and north of Boston).

Mr. Ivan Rawson, Pittsfield (Berkshire County).

Mr. H. L. Walton, Worcester (Worcester and Middlesex Counties).

Mr. Edwards Thorne, Worcester (Worcester County, occasional service).

(Localities covered by the inspectors have been indicated in parenthesis).

Mr. Walton was appointed for the first time this year. Burton N. Gates, Worcester, was Inspector of Apiaries, devoting part time. The Deputies likewise were on temporary appointment and served part time.

In Berkshire County a noticeable freedom from disease was found by Mr. Rawson, who visited all sections where infection might be expected to be found. It is reported too, that along the New York State border in that State, brood diseases have also largely disappeared. It is possible that they still persist at the junction of the Massachusetts-Vermont-New York lines. It is in this northwestern corner of Massachusetts, that the noticeable infection of Berkshire county was found in 1926. Even here the deputy inspector, Mr. Rawson, does not consider it serious. However, an attempt to eradicate in this district is proposed for 1927.

Deputy Inspector, Mr. Challet, found unusually little infection in the Connecticut Valley. These three counties were thoroughly examined and only scattering, isolated cases were discovered. The freedom from disease is quite as significant as in Berkshire County and will be followed up closely in 1927. The cases in these counties may be considered sporadic; hence, there appears to remain no persistent foci of infection in this region.

In Worcester County, the general condition appeared good and probably improved, although there was still considerable scattered infection. Relatively fewer diseased colonies were found in a given apiary or town, than heretofore. This suggests that the improvement, while slower than in the region west of the county, is nevertheless quite evident. It is hoped that still further improvement will be recorded in 1927. The diseases found were both American foulbrood and European foulbrood, the latter predominating. A few cases of sacbrood were found.

East of Worcester County, the situation remained largely unaltered, although the foci of 1925, in Essex and Middlesex Counties, showed marked improvement in 1926. Some of the foci south of Boston showed improvement also, although American foulbrood in this region seems to have a firm grip. Vigorous steps are planned for 1927.

Late in the season an isolated apiary in Barnstable County was discovered to have American foulbrood. It may be that the disease came from without the State with the colonies when purchased. The apiary concerned is isolated and there is only one other within miles. Both of these are held under strict observation until spring will permit examinations. It is possible that Barnstable County, which heretofore has had very few colonies, may have developed a focus of infection.

A movement on the part of the State of Rhode Island for increased apiary inspection is being fostered. It is proposed to co-operate with that State, if funds for inspection are successfully procured and an inspector is appointed in Rhode Island. It is proposed to have a Massachu-

sets deputy work along the State lines jointly with the Rhode Island inspector. If this plan can be matured, a marked improvement in the condition along that portion of the State border should result. It should eliminate what has been charged; namely, that there is a certain amount of undetectable interchange of bees between the States; some of this interchange being reported as diseased bees.

The box-hive situation is improving. Practically all beekeepers who had been instructed to transfer, completed their task within the agreed time, or made other arrangements with the office. A noticeable feature which the inspectors encounter in the box-hive situation, is that a large percentage of those who fail to follow the Department regulations are foreigners. These apparently try to keep bees on fast combs, as has been the custom in their native countries. Similarly, some of the aged beekeepers native to the State, hang to the traditional manner of beekeeping of their fathers, only relinquishing the method after persistent reasoning by the deputies. There appears to be little willful violation of the box-hive regulation.

Particular attention to the sanitation of apiaries has been given during the past year. It has been necessary to have some extensive clean-ups resulting in the disposal of possibly infectious materials discovered to have been stored for years. More and more attention will be given to searching out these obscure, latent, but potent sources of reinfection. On the whole, however, there are, year by year, fewer careless beekeepers who habitually leave exposed combs and other bee material contrary to the Department regulation.

WHITE PINE BLISTER RUST

This Division is conducting, in co-operation with the United States Department of Agriculture, an intensive state-wide campaign to prevent the further spread of the white pine blister rust, a fungous disease which causes serious damage to white pine trees and which is transmitted through the agency of currant and gooseberry bushes.

The blister rust was first found in Massachusetts in the early summer of 1917 and has already become generally distributed throughout the Commonwealth. To date, November 30, 1926, the disease is known to be present in at least 210 townships. In 23 of these townships, the disease was located this year for the first time. The degree of infection naturally varies in different parts of the State, but areas of general infection prevail especially in Essex County, both northern and southern Worcester County, northern Plymouth County, western Hampden County, western Franklin County, and in southern Berkshire County. Local spot infections, that is, one or more diseased trees, exist in all sections, and it is fair to say, that upon diligent search, the disease can now be found in any town in Massachusetts where white pine trees grow in any abundance.

The Federal Department, as its part in the program of control, has assigned seven men to districts in Massachusetts. These men have been appointed to conduct an educational and service campaign throughout the pine growing sections of the State. The purpose of this campaign is to disseminate information regarding the disease and then to secure the concerted action of all concerned to eradicate wild and cultivated currant and gooseberry bushes, in order that the continued production of white pine as the most important timber crop in the Commonwealth, may be maintained.

The function of the Division of Plant Pest Control in the general program, is to render a reasonable amount of assistance to property owners. The rendering of this service involves the employment of a limited number of men—33 in 1926, during the period from the middle of April to the last of September. These men are trained to locate the habitate where wild currant and gooseberry bushes grow, and to make thorough examinations of such areas. In conducting the work, these men accompany the owners

over their individual holdings and instruct them in the simple method of eradicating currant and gooseberry bushes most efficiently and most effectively. In doing this, the Department is endeavoring to prevent serious losses not only to such owners, but indirectly to the Commonwealth as well.

In all this work, the department seeks the active co-operation of everyone in a particular community and has received general support. The only difficulty encountered, relates to the removal of the cultivated varieties of currant and gooseberry bushes. A few individuals refuse to destroy these bushes when urged or requested to do so. In such cases, it becomes necessary to exercise the legal authority of the Department and remove them forcibly. The objecting owner then has the statutory right to present a claim for damages. Each season, a few claims of this nature are submitted to the Department and during 1926 the right was exercised by 23 persons. These claims represent requests for reimbursement for the loss of 3,824 bushes valued by the regulations of the Department at \$1,644.75. Although these claims involve a larger sum than in previous years, it is gratifying to record the fact that since cultivated bushes were removed from the properties of 827 individual owners, these claims actually represent less than 3% of all the cases involved. This record in itself, attests to the effectiveness of the campaign of education and to the wisdom of the policy of the Department, to conduct the work on the basis of persuasion rather than compulsion.

During the season of 1926, the Division rendered assistance to 1,845 property owners and made examinations on 189,080 acres of land. From this area of land, 1,083,039 wild and 25,596 cultivated currant and gooseberry bushes were uprooted at an average total cost of 14c per acre. The co-operating land owners expended the equivalent of \$9,617.16 in protecting their white pine trees.

The blister rust control work in Massachusetts has again been conducted under the direction of Mr. C. C. Perry who represents both this division and the Federal Department. He has been assisted in the field work by the following named men, who are designated as Blister Rust Control Agents:

Earle M. Brockway	District III-IV	Southeastern Massachusetts
William Clave	District VI	Worcester (North) County
G. Stanley Doore	District VII	Franklin-Hampshire (North) County
William J. Endersbee	District IX	Berkshire County
Edward J. Mc Nerney	District V	Worcester (South) County
William T. Roop	District I-II	Essex County-Middlesex County
Ralph E. Wheeler	District VIII	Hampden-Hampshire (South) County

The Director wishes to express his appreciation of Mr. C. C. Perry's splendid co-operation. His work in the control of the white pine blister rust has been most efficient and satisfactory.

REPORT OF THE DIVISION OF RECLAMATION, SOIL SURVEY AND FAIRS

RECLAMATION

The reclamation work of this Division has been conducted as in previous years through the State Reclamation Board, of which the director of the Division is secretary. The report of the Board follows:

REPORT OF THE STATE RECLAMATION BOARD

Owing to the death of Mr. Warren C. Jewett, former chairman of the Reclamation Board, and the serious illness of the secretary, Mr. Leslie R. Smith, the Commissioners of Health and Agriculture acted as members of the Board from their respective departments during the early part of the year. Later Mr. Leslie R. Smith of Hadley was reappointed to represent the Department of Agriculture and Mr. Gordon Hutchins of Concord to represent the Department of Public Health. The Governor and Council voted to approve the designation of Mr. Richard K. Hale, Department of Public Works, as the third member of the State Reclamation Board. Mr. Smith has acted as secretary and executive officer of the Board since his reappointment.

RECOMMENDATIONS FOR LEGISLATION

The legislature of 1926 gave the Reclamation Law very careful study and corrected most of its defects. No legislation is recommended for the coming session.

GENERAL WORK OF THE BOARD

As in previous years, the Board has continued the supervision and direction of existing reclamation projects in their formation, construction and maintenance, and has acted as a bureau of information on various drainage matters for State and town officials, and for those individuals who presented to it their problems. It wishes to point out that the Reclamation Law was drawn to provide the owners of wet lands with the necessary legal machinery for accomplishing their purposes; that under this law the entire cost is assessed upon the land benefitted; that the State pays only the cost of supervision; that the law is available for all wishing to use it; that it can be used to solve many of the sanitary problems of cities and towns. The Board has continued its policy of encouraging district organizations to work with and assist town authorities in solving their mutual drainage problems. It desires to again emphasize the fact that the cost of projects developed under the Reclamation Law is assessed upon the land owners benefitted; the only portion of these expenses borne by the State being that of assistance in organizing and of supervision. One additional project has started construction this year.

DRAINAGE DISTRICTS

There are only three districts organized under the original Drainage Law; namely, Cherry Run Brook District, Greenfield; the Salisbury District at Salisbury and the Weweantic River District in Carver and Wareham. Construction work on the first has been finished for some time, and practically all the assessments for this work have been met by the land owners. Only a small amount of maintenance work has been done this year. The Salisbury District has been inactive except for making another attempt to obtain the consent of the county commissioners to finance the project. This district should be reorganized as a Reclamation District, in order to avail itself of the methods provided for financing. The Weweantic River District has been inactive this year, although the

project is not yet completed. The district should be reorganized as a Reclamation District and its plans revised.

RECLAMATION DISTRICTS

1. *Assabet River, Westborough and Northborough.* Active construction was undertaken this year of what is known as the first preliminary part of the project. This consists of rebuilding the highway bridge at School Street, Northborough (known as Kimball's Bridge), and in clearing from the channel between this bridge and the marsh above, the controlling obstructions. During the year, the district borrowed \$5,000 for this improvement and for paying its organization expenses, of which \$3,000 was devoted to construction purposes. The bridge has been completed, the town of Northborough paying two-thirds of its cost. The channel was opened by hand methods. Antone and Ransom of Greenfield contracted for all this work. The purpose of this work is to drain the land sufficiently to harvest a hay crop. Profits from the hay are to pay for this work before more complete drainage is undertaken.

2. *Bear Meadow, Whitman.* Activity in this project has been confined to assisting the town authorities. The taking made last year at Franklin Street enabled the towns of Whitman and Hanson to build a new bridge and to straighten the river at that point. At the upper end of the project the district has co-operated with the town of Whitman in its plans for draining Hobart's Pond. In this connection the town has cleared much of the obstructed portion of the river, which is also a direct benefit to the district. The objects of the district are slowly being worked out in co-operation with the town of Whitman.

3. *Cutter Swamp, Arlington.* The district engaged an engineer who has prepared maps and the necessary plan of operations. Under his direction the drainage channels have been partly cleared of their rubbish and bushes which has greatly improved conditions in the district. It is expected to further develop this project next spring.

4. *Green Harbor, Marshfield.* Construction on this project was finished in 1925. Only a small amount of maintenance work has been required since. The results are very satisfactory.

5. *Milford, Milford.* This district was formed in 1925 for the purpose of preventing further damage to factories and dwellings, caused by the overflow of the Charles River. The town of Milford voted \$10,000 to be spent by the town Board of Health in carrying out the plans of the district. A new and enlarged channel was dredged for about one-half mile through the swamp below the town and the balance of the channel was cleaned of its accumulated rubbish by hard work. The project was completed in July of this year and the results have been extremely satisfactory. The new channel will carry all but the very extreme floods, and factories and dwelling places have been relieved of water. The land in the swamps was so dried out that it could readily have been cultivated. The discharge pipes from the town sewer beds have been relieved from the back water of the river. The district plans to maintain the work and to further assist the town in keeping the river clear of rubbish through the control of the dumps along the river bank. The total cost has been considerably below the amount of money available for the work. Antone and Ransom of Greenfield were the contractors.

6. *Wapping, Deerfield.* There has been no construction on this project during the year. Negotiations were under way to complete a second portion of the project by combining with a revised State highway location at the upper end of the project. The work is expected to be put through next year.

INACTIVE PROJECTS

There are several inactive projects listed with the Board. Some of these have presented petitions, have been examined and the district commissioners appointed. Some have started petitions and others have only

sought preliminary information. The new provision to the Reclamation Law allowing the Board to assist projects without formation of a district will make the completion of some of these projects practical.

NEW PROJECTS

No petitions for new projects have been presented to the Board during the year but many inquiries have been received, and several petitions are now pending.

CONCLUSION

The Board believes that the results obtained so far have demonstrated the practicability of reclaiming large areas of wet lands through simple and inexpensive means. It is estimated that there are nearly 500,000 acres of wet lands in the Commonwealth. Most of this land is now worthless, much of it constitutes a danger to the health of the community. The Reclamation Law enables the owners of this land to finance jointly and convert it into sanitary wealth-producing territory. While the Board may initiate such projects, yet in general the matter is in the hands of the land owners.

Respectfully submitted,

STATE RECLAMATION BOARD,

BY LESLIE R. SMITH, *Secretary*.

SOIL SURVEY.

The project of making a soil survey of the Commonwealth is progressing. This year, 1926, the county of Hampden has been nearly finished, leaving Hampshire and Franklin the only counties not surveyed. It is estimated that two or three years more will see this work finished (depending on weather conditions).

This work is done in co-operation with the Bureau of Soils of the United States Department of Agriculture; the Federal Department furnishing the soil specialist and the Massachusetts Department of Agriculture furnishing an assistant and Ford car. The cost of the work in 1926 was \$596.57.

FAIRS.

Agricultural prize money was allotted through ninety-three agricultural and horticultural societies, grange and community fairs, boys' and girls' exhibits and poultry shows.

The Department co-operated with the Union Agricultural Meeting held in the Armory, Worcester, January 5, 6 and 7, 1926, the Brockton Fair, Brockton, October 4, 5, 6, 7, 8 and 9, 1926, and with a special dynamometer contest held at the Agricultural College on October 30th.

A special exhibit was held at the Massachusetts Building, Eastern States Exposition, Springfield, September 19, 20, 21, 22, 23, 24 and 25, 1926.

A State stock judging team was sent to the National Dairy Show, Detroit, Michigan, on October 9, 1926 and a special prize was awarded.

The large fairs were inspected by a representative of the Department and detailed reports were prepared and are on file. The community and grange fairs are required to make a report and details of such are on record in the Department files.

In order to carry the successes of one fair to another, moving pictures and colored slides are used at meetings of different agricultural societies and other groups throughout the commonwealth.

Department ribbons are offered to the smaller fairs and are more and more in demand by the larger fairs.

MEDALS

Gold medals for outstanding agricultural achievement or encouragement are awarded each year. Silver and bronze medals are awarded for

other outstanding agricultural work according to the judgment of the Department.

CAMP GILBERT

Again as in past years, the Department financed Camp Gilbert at the Massachusetts Agricultural College as a special endeavor prize for boys' and girls' excellence in club work.

FINANCIAL STATEMENT OF SPECIAL EXHIBITS

Union Agricultural Meeting	\$605.39	
Eastern States Exposition	2,779.25	
Total		\$3,384.64

AGRICULTURAL PRIZE MONEY AWARDED TO SOCIETIES, GRANGES AND FAIRS

Abington Grange, \$15.00; Acton Agricultural Association, Inc., \$600.00; Ashburnham Grange, \$22.00; Barnstable Co. Agricultural Society, \$600.00; Bedford Grange, \$40.00; Blackstone Valley Agricultural Society, \$551.00; Bourne Agricultural Society, \$50.00; Boylston Grange, \$20.00; Braintree Grange, \$30.00; Brimfield Grange, \$21.00; Bristol County Farmers' Fair, \$250.00; Burlington Grange, \$45.00; Dedham Grange, \$35.00; Deerfield Valley Agricultural Society, \$698.00; Essex Agricultural Society, \$1,000.00; Flintstone Grange, \$17.00; Franklin Co. Agricultural Society, \$1,200.00; Gardner Agricultural Association, \$600.00; Granby Grange, \$20.00; Groton Farmers' and Mechanics' Club, \$550.00; Halifax Grange, \$20.00; Hampden County Improvement League, \$100.00; Hampshire, Franklin and Hampden Agricultural Society, \$1,200.00; Hancock Community Fair, \$85.00; Heath Agricultural Society, \$150.00; Highland Agricultural Society, \$715.00; Hillside Agricultural Society, \$714.75; Hilltop Grange, \$20.00; Hingham Agricultural & Horticultural Society, \$75.00; Holliston Grange, \$25.00; Hoosac Valley Agricultural Society, \$499.50; Hopkinton Grange, \$18.00; Housatonic Agricultural Society, \$1200.00; Lee Grange, \$30.00; Lexington Grange, \$20.00; Littleville Community Fair, \$100.00; Lunenburg Community Fair, \$149.00; Mansfield Grange, \$21.00; Marshfield Agricultural and Horticultural Society, \$650.00; Martha's Vineyard Agricultural Society, \$399.50; Merrimac Grange, \$30.00; Monomoy Grange, \$15.00; Nantucket Agricultural Society, \$297.00; Natick Grange, \$15.00; Needham Grange, \$24.00; New Salem Grange, \$20.00; Norton Grange, \$34.00; Orange Boys' and Girls' Club, \$50.00; Otis Grange, \$20.50; Oxford Agricultural Society, \$500.00; Palmer Grange, \$16.00; Plainville Grange, \$25.00; Plymouth County Agricultural Society, \$550.00; Princeton Grange, \$19.00; Randolph Grange, \$30.00; Reading Grange, \$25.00; Rockland Grange, \$20.00; Sandwich Agricultural Society, \$45.00; Southboro Cattle Show & Fair, \$248.00; Stockbridge Grange, \$35.00; Sterling Farmers' Club, \$75.00; Swansea Grange, \$18.00; Templeton Grange, \$45.00; Thrifty Grange, \$25.00; Tyngsboro Grange, \$12.00; Union Agricultural & Horticultural Society, \$713.50; United Shoe Machinery Athletic Association, \$40.00; Warren Grange, \$39.50; Wendell Grange, \$30.00; Westford Grange, \$15.00; West Newbury Grange, \$29.00; West Stockbridge Grange, \$32.00; Westminster Farmers' and Mechanics' Club, \$25.50; Westport Agricultural Society, \$600.00; Weymouth Agricultural Society (Norfolk County Fair), \$260.25; Williamsburg Grange, \$34.00; Worcester Agricultural Society, \$1500.00; Worcester N. W. Agricultural & Mech. Society, \$850.00; Worcester South Agricultural Society, \$750.00; Worcester County West Agricultural Society, \$799.50.

The Department offered prize money through twelve Poultry, Pigeon and Pet Stock Associations during the year 1926. Each show was inspected by a representative of the Department and a record kept of the number and character of exhibits.

The prize money was awarded as follows:

Amherst Poultry Association, \$144.00; Athol Poultry Association, \$75.00; Boston Poultry Association, \$492.50; Dressed Poultry & Egg Show at M. A. C., \$18.00; Eastern Mass. Poultry & Pigeon Association, \$165.00; Fitchburg Poultry Association, \$75.00; Northampton Poultry Association, \$150.00; Plymouth County Extension Service, \$8.00; Springfield Poultry Club, Inc., \$248.50; United Rabbit & Cavy Club, \$50.00; Worcester Poultry Association, \$166.00; New England Poultry Association, \$175.00.

SUMMARY

Appropriation		\$30,000.00	
Balance, 1925		2,118.11	
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Total		\$32,118.11	
1925 fairs paid in 1926	\$522.51		
Agr. & Hort. Societies	19,034.00		
Poultry Societies	1,767.00		
Community Fairs	709.50		
Granges	1,049.00		
Boys' & Girls' Club Work	1,920.02		
Judging Live Stock Contest	441.52		
Badges, Medals, Cups, etc.	1,561.90		
Photography	220.05		
Postage	159.22		
Mileage Purchased	180.00		
Express	3.57		
Expenses of Assistants	316.00		
Other Supplies	37.78		
Dynamometer Contest	100.00		
Printing	1.25		
Special Exhibits	3,384.64		
	<hr/>		
Total		\$31,407.96	
Balance			\$710.15

CONTROL WORK.

A detailed record was kept of agricultural bills presented to the legislature and the action taken upon them.

Several laws bearing upon special phases of the Department's work were modified to show more clearly the intent, or to provide for certain additional features that would permit a more satisfactory enforcement. The Inspection Law of Apiaries, the Apple Grading Law, Plant Pest Control Regulations and the Reclamation Law were among the agricultural laws modified by the 1926 legislature to more effectively meet the requirements of modern agriculture.

An important change in the Massachusetts Apple Grading Law is the following additional portion of section 111, Chapter 94, Massachusetts General Laws:—

“Before any prosecution is begun by the Commissioner of Agriculture or any of his duly authorized assistants, the parties concerned shall be given an opportunity to be heard before the said Commissioner or a person designated by him for such purpose. The parties concerned shall be given reasonable notice of the hearing, specifying the day, hour and place thereof and accompanied by a description of the alleged violation. Such hearings shall be governed by rules and regulations prescribed by said Commissioner.”

In pursuance to this change in the law, thirty persons appeared at hearings conducted by the Department to answer for reported violations of the Apple Grading Law.

An effort was made at these hearings to give remedial assistance wherever possible. The circumstances surrounding the alleged violations in many cases indicated that prosecution was not justified and only seven cases were entered in court.

The Department inspectors supervising corn borer activities reported over two hundred violations of the Corn Borer Law and approximately two hundred complaints were entered in the different courts.

Most of the cases were continued for a sufficient period to allow for a report to the court of the means employed by the violators to control the corn borer after the 1926 crop. A few fines were imposed by the court in cases of flagrant disregard for the law and questionable attitude of future co-operation.

Twenty-five cases of violations of the Oleomargarine Laws were prosecuted by the Department and twenty-two convictions were obtained. Fines aggregating an amount of \$955.00 were imposed by the courts for oleomargarine violations.

Assistance has been given to different divisions in legal questions arising in connection with the Department's work. Other Departments of the State have been contacted, especially the offices of the Attorney-General, Secretary of State, and Department of Corporations and Taxation relative to special problems arising in the supervision of reclamation projects.

Assistance of a very necessary character has been given in organizing Reclamation Districts and drafting by-laws for the districts.

All letters requesting information relative to agricultural laws were given prompt and careful attention.

Hearings were conducted during the last few months of the fiscal year, at which time committees from various agricultural organizations met and discussed legislation to be presented to the 1927 session of the legislature. The Department assisted in drafting bills supported by the agricultural interests of the Commonwealth for legislative action during 1927.



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The Commonwealth of Massachusetts

ANNUAL REPORT

OF THE

Commissioner of Agriculture

FOR THE

Year Ending November 30, 1927 .



DEPARTMENT OF AGRICULTURE

Commissioner of Agriculture

DR. ARTHUR W. GILBERT OF BELMONT
HYLDA M. DEEGAN, BOSTON, *Secretary*

Advisory Board Appointed by the Governor and Council

EVAN F. RICHARDSON OF MILLIS, Term expires November 30, 1930.
LESLIE R. SMITH OF HADLEY, Term expires November 30, 1930.
PETER I. ADAMS OF STOCKBRIDGE (HOUSATONIC), Term expires November 30, 1928.
HERBERT N. SHEPARD OF WARREN, Term expires November 30, 1928.
JOHN BURSLEY OF BARNSTABLE (WEST), Term expires November 30, 1929.
STUART L. LITTLE OF NEWBURY, Term expires November 30, 1929.

Organization of the Department

DIVISION OF DAIRYING AND ANIMAL HUSBANDRY—JOSEPH C. CORT OF READING, *Director*
DIVISION OF MARKETS—FREDERICK V. WAUGH OF WATERTOWN, *Director*
DIVISION OF ORNITHOLOGY—EDWARD HOWE FORBUSH OF WESTBOROUGH, *Director*
DIVISION OF PLANT PEST CONTROL—R. HAROLD ALLEN OF TAUNTON, *Director*
DIVISION OF RECLAMATION, SOIL SURVEY AND FAIRS—LESLIE R. SMITH OF HADLEY, *Director*

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The Commonwealth of Massachusetts

REPORT OF THE COMMISSIONER

RECOMMENDATIONS FOR LEGISLATION

AMENDMENT TO THE LAW RELATIVE TO OLEOMARGARINE

The General Laws relative to butter, cheese and their imitations, including oleomargarine, as found in chapter 94, sections 49-63, inclusive, have retained in most respects their original form for a period approximating fifty years, and several important changes have taken place in the manufacture and distribution of these food products during this time which would appear to necessitate some slight change in the law. The common use among the manufacturers of oleomargarine, of cartons or wrappers for incasing prints, bricks or rolls of oleomargarine in convenient sizes for sale purposes, would necessitate a slight change in the size of letters contained in the brand or marks on the carton or wrapper. Section 49, chapter 94 of the General Laws, provides that each stamp, label or mark shall be in printed letters in a straight line of plain, uncondensed gothic type, not less than one-half inch in length. The Federal law provides that "cartons shall be branded on the two principal panels with the word oleomargarine in plain gothic letters of not less than twenty point type." "Twenty point type" measures slightly over one-quarter inch in length. It would be impossible, with the average size carton, which is convenient for sales purposes, to comply strictly with the Massachusetts law and print upon the carton the word oleomargarine, in printed letters of uncondensed gothic type, not less than one-half inch in length.

It would seem desirable at this time to change section 49, chapter 94 of the General Laws, to conform with the Federal law, in order that a specially branded or marked carton will not be required of the manufacturer for sale and distribution in Massachusetts. The carton containing the word oleomargarine in plain, gothic letters of not less than twenty point type will emphasize sufficiently the fact that the product is not butter and will satisfy the intent of the law in so far as the requirement of "special notice to the buyer" is concerned. It would also seem desirable to amend section 55 for the purpose of clarifying the law.

It is, therefore, recommended that sections 49 and 55 of chapter 94 of the General Laws be amended so as to make our law more uniform with respect to the Federal oleomargarine laws.

OTHER AGRICULTURAL LEGISLATION

This Department in cooperation with other farm agencies gives consideration to all legislation of interest to farmers of Massachusetts presented to the Legislature. Hearings are frequently arranged and representatives of the Department of Agriculture sit in with the farmers and discuss their various problems, the solution of which requires some legislative action. The department approves and encourages only legislation that is designed to better the farming conditions in the State and it is often important and necessary that present laws relating to agriculture be amended or revised in order to clarify the law and enable the Department of Agriculture to enforce the law with greater efficiency and effectiveness.

Laws enacted during the recent session of the Legislature of direct interest to agriculture include the following: revision of the apple grading law—the word "standard" has been eliminated from the designation of Massachusetts grades and instead of Massachusetts Standard A, the apple packer will now be permitted to mark this grade of apple "Massa-

chusetts A" and the same provisions apply to "Massachusetts Fancy" and "Massachusetts B."

The Massachusetts apple grading law was further revised, in that the minimum size of all apples packed in boxes or cartons need not be marked on the box or carton, if the box or carton is marked with a statement of the number of apples contained in the box.

"An act to increase the compensation paid by the Commonwealth for tubercular cattle slaughtered" has now become a law. This law provides that the Commonwealth shall pay to the owner of any animal slaughtered under authority of any rules and regulations promulgated by the Division of Animal Industry, one-half of the difference between the amount received by the owner for the carcass of the animal and the value of the animal as determined by appraisal; provided, that payment by the Commonwealth shall not exceed \$50.00 for any grade animal or \$75.00 for any pure-bred animal; and provided further, that the owner or his representative has not, in the opinion of the director, by wilful act or neglect, contributed to the spread of bovine tuberculosis.

The petitions of the Massachusetts Fruit Growers' Association, relative to the payment of the Commonwealth for damages caused by wild deer and moose, has received favorable action by the legislation, and the fruit growers claim of damages on account of deer, will more nearly approximate the actual damage to his orchard, and the payment of his claim will receive more prompt attention.

Resolves have been passed by the Legislature, authorizing the printing, illustrating and publishing of the third volume of "Birds of Massachusetts" by Edward Howe Forbush, the State Ornithologist, and providing further for printing additional copies of the first volume of the report on "Birds of the Commonwealth," by the same author.

AGRICULTURAL OUTLOOK FOR 1928

Our records on farm labor supply indicate that farm labor will probably be available to a greater extent in 1928 than at any time during the past ten to fifteen years. A general depression in certain industrial centres has caused many men to seek work on farms. This supply is not experienced but will in a measure meet the requirements of general farm labor.

DAIRY PRODUCTS

The dairy industry in Massachusetts appears to be in a little less favorable position than a year ago. Prices for grain are on the increase, thereby increasing the cost of milk production. Additional sections are making preparations to produce Grade A milk for Boston consumers. Prices for dairy cows remain exceptionally high and a tendency to save the better dairy calves and cull the herds closely during the present high slaughter value of old cows has been noticed.

HOGS

Hog prices should show some strengthening during the last six months of 1928. Curtailment of production resulting from the present unsatisfactory price situation will probably cause an upward adjustment of prices.

SHEEP AND WOOL

The outlook for wool growers continues to appear favorable. A farmers' pooling association organized for the purpose of making virgin wool blankets for retail sale has stimulated interest in wool production because of greater financial returns. Demand for native lamb continues to remain good and Massachusetts markets can absorb well-grown lambs at prices showing a good profit to the farmer.

APPLES

Apple production by commercial orchards in Massachusetts will con-

tinue to increase for the next ten to fifteen years. Fruit growers producing a high quality of fruit will continue to find a satisfactory market. Further development of cooperative effort along lines of grading, packing, and marketing lines will assist materially in the better disposal of Massachusetts fruit.

STRAWBERRIES

The competition of the early strawberry from the more southern states with its consequent low price for this fruit just prior to the entrance of the native strawberry upon the market is causing a serious situation to the local farmers. The solution of this problem will involve more intensive methods of production and the formation of packing, grading and marketing associations with the eventual placing of Massachusetts A grade strawberries upon the all big city markets.

POULTRY AND EGGS

Massachusetts poultry producers will continue to enjoy a favorable local market for fresh eggs and dressed poultry. The use of the "Massachusetts Special," a New England label upon eggs graded in accordance with the requirements promulgated by the Commissioner of Agriculture will greatly assist in advertising our quality eggs.

CRANBERRIES

Massachusetts cranberry producers had a very prosperous year in 1927 and the outlook for 1928 is favorable. Continuing efforts are being made to perfect new methods of using surplus cranberries in by-products thus giving to the growers additional income and greater profits.

RECOGNITION OF AGRICULTURAL ACHIEVEMENT

The Department of Agriculture has perfected a plan for giving six gold medals each year to persons in the State who have achieved outstanding leadership. The medals are awarded each year by a board of awards made up as follows:

Commissioner of Agriculture, Dr. Arthur W. Gilbert; *Members of Advisory Board*, Peter I. Adams, John Bursley, Stuart L. Little, Evan F. Richardson, Herbert N. Shepard, Leslie R. Smith; *Director, Division of Markets*, Frederick V. Waugh; *Director, Division of Animal Husbandry*, J. C. Cort; *Representing the Massachusetts Agricultural College*, Prof. George L. Farley; *Representing New England Homestead*, Glenn C. Sevey.

A brief record follows of the achievements of the persons who received these medals for 1927:

EDWARD HOWE FORBUSH, WESTBOROUGH, MASS.

For Outstanding Achievement in Economic Ornithology and Protection of Wild Life

Edward Howe Forbush was born in Quincy, Massachusetts, on April 24, 1858, the son of Leander Pomeroy Forbush and Ruth Hudson (Carr) Forbush. He was seven years old when his family removed to West Roxbury.

In 1865 West Roxbury was still a farming region, with considerable areas of woodlands, and here the boy's outdoor tastes and his love for wild life developed apace. He became an interested reader of outdoor literature and began to shape his life work at that time. He studied drawing and modeling, and at the age of fourteen learned taxidermy, all as aids in his bird study. About this time his family moved to Worcester, where he became a member of the Worcester Natural History Society, and his studies soon began to show results in the form of printed articles on birds.

When he was nineteen years old he spent several months with a friend exploring and collecting in Florida, and this was the first of many scientific journeys to be undertaken. His thirtieth year found him on the Pa-

cific coast, living a very adventurous life with Indians, trappers and fishermen, while he travelled the wild shores of British Columbia and Washington State. It was during this trip that he obtained the first specimens of a new bird, which was later named in his honor, the Forbush Sparrow.

A few years later, in 1893, his work received recognition by the Commonwealth of Massachusetts and he was appointed Ornithologist to the Massachusetts State Board of Agriculture. His early reports on the value of birds to agriculture and forestry led to increased appreciation, and in 1908 he was appointed to the newly created position of State Ornithologist. With the reorganization of the State Departments in 1921, he became the first Director of the Division of Ornithology of the Massachusetts Department of Agriculture.

A great deal of Mr. Forbush's time has been given to field work and to research in the realm of economic ornithology, and he has delivered many lectures and written many papers on this subject, as well as on bird protection. In addition to being a Fellow of the American Ornithologists' Union, he is a life member of the Worcester Natural History Society, a founder and for many years president of the Massachusetts Audubon Society, Field Agent of the National Association of Audubon Societies, and a Member of the Advisory Board on the Migratory Bird Treaty between the United States and Canada, as well as holding office in other societies for wild life protection.

His first important publication was a monograph on the Gypsy Moth, in collaboration with Prof. Charles H. Fernald, published in 1896, when he was Field Director of Moth Suppression work under the Board of Agriculture. In 1905 the Board was authorized to publish a report on the birds of the State "economically considered," and Mr. Forbush's resultant book,—*"Useful Birds and Their Protection,"* has become a classic in its field, and is still in demand twenty years later. In 1912 another state publication *"Game Birds, Wild-Fowl and Shore Birds,"* appeared and was equally successful. And in 1925 the first volume of Mr. Forbush's masterpiece, the culmination of many years of study, *"The Birds of Massachusetts and other New England States,"* made its appearance before an appreciative public. The entire edition was exhausted a few months after publication, and there is a constant and very urgent demand for another edition, especially since the appearance of the second volume of the work. The third and final volume is now well under way and its publication is eagerly awaited.

In addition to these books, Mr. Forbush has written smaller volumes on *"The Utility of Birds,"* *"The Domestic Cat,"* *"The Natural Enemies of Birds,"* and also a host of papers on various phases of bird study and protection. His essays on economic ornithology are recognized as authoritative, and are in constant consultation both in this country and abroad, as shown by the frequency with which his work is quoted.

Although Mr. Forbush is already widely known through his writings and lectures, it is as a scientific worker along original lines of investigation in economic ornithology that his right to fame, in the last analysis, will rest. It is for his achievements in this line that the Commissioner and the Advisory Board of the Massachusetts Department of Agriculture have awarded him a Gold Medal.

PAULINE JEFFERIES, ORANGE, MASS.

Success in Girls' Club Work

Miss Pauline Jefferies started club work in 1920 at the age of ten years. Her first year's work was good, but gave no indication of her subsequent success. She had, however, the proper qualifications: a love for canning, enthusiasm, and a determination to work. During her second year she was given honorable mention in the county. She always took advantage of every opportunity to learn, attending demonstrations

given by the college specialists, reading and observing, and was awarded in 1922 a blue rosette by the Massachusetts Department of Agriculture for the best collection of canned goods at the Orange Grange Fair. She began to sell canned goods that summer, principally through the Farm and Garden Association. Her work as club leader was of such excellence that she was awarded the County Championship in 1922. In 1923, her fourth year of work, Miss Jefferies put up 629 jars of fruits and vegetables and 210 jars of jams and jellies, and 11 jars of pickled products. In addition to accomplishing this feat, she led, unassisted, a club of younger girls. In addition to selling a great deal of her products through the Farm and Garden Association, she made arrangements together with two other girl friend members, to sell products at a Tea Room at Shelburne Falls. Her sales amounted to \$70.00. She attended a 3-day Canning School at Massachusetts Agriculture College during the summer. Miss Jefferies exhibited and won prizes at many fairs and the Club which she led was also successful at the fairs.

This last year, 1927, she was supervisor of canning and garden club work in Greenfield and Turners Falls with 134 canning club members and 125 garden club members to supervise and her work was a complete success in every way.

Since her start in club work in 1910, Miss Jefferies earned and saved in her canning operations, over \$1,000 which she intends to use toward her expenses at Simmons College.

JOHN H. STORER, JR., GROTON, MASS.

Outstanding Contribution to the Poultry Industry

"Pinecrest Strain of Reds" suggests at once to the mind of every New England poultry breeder two dominant thoughts,—Outstanding Production Quality Rhode Island Reds and, the name, John H. Storer, Jr., Groton.

Starting in 1913 with a pen of twenty breeders, Mr. Storer set out with the very definite object of breeding a strain of S. C. Rhode Island Reds that would prove the most useful strain for poultrymen. Pinecrest Strain has been consistently bred, pedigreed and managed during thirteen years under environments of quarantine and health factors—that, in themselves, stand out as a model in poultry management. Developed along the definite lines of health, vigor and productivity, 2,000 breeders were housed this year, selected from only the choicest pullets raised from 300 special breeders, each with pedigree and trapnest records of over 250 eggs. So every year, the flock is built around a few of the best of the outstanding individuals and each new generation of chicks is backed by a stronger inheritance for vigor and productivity.

Day-old chicks to the number of 31,000 were hatched and 8,000 hatching eggs were sold last year to other poultrymen seeking a source of superior stock. Guaranteed absolutely free from Bacillary White Diarrhoea by the Massachusetts Agricultural College, by whom close supervision of the flock is maintained, their records show that from the total of all day-old chicks sold, there was a mortality of only 39%—a remarkable testimony to the vigor of the stock.

An individual hen has just completed the phenomenal feat of laying 123 eggs in 123 consecutive days, which establishes a new record.

As an experimenter, Mr. Storer has been foremost in developing and trying out new ideas in their application under commercial conditions, then generously passing along his results to fellow poultrymen. He has tested out ultra violet-ray treatment on a portion of his flock, and finding it impractical, resorted to trials with Cod Liver Oil, of which he has been a consistent feeder. He was the first to originate the practice of hopper feeding of all feed, a method that two years subsequently was adopted and recommended by the State College.

His personality, combining keen intelligence, strictest integrity, and a

willingness to assist and advance poultry husbandry among his fellow poultrymen stamp him as a leader of wide influence.

As President of the Middlesex County Poultry Association, recognition of his local leadership is thus acknowledged. He willingly lends of his time and assistance to all worth-while activities. He is also a member of the Rhode Island Red Association of America and a strong Eastern representative.

Being President, also, of the Massachusetts Certified Poultry Breeders' Association from the date of its inception, Mr. Storer is at once identified with a new movement of nation-wide significance in the poultry industry. As a diligent apostle working for the greater health and productivity in the flocks of this State, he thus heads up a growing organization which already has accomplished significant results.

Massachusetts certification guarantees inspection, supervision and laboratory test by the Massachusetts Agricultural College of—

1. Constitutional vigor, standard breeding and production capacity.
2. Management and sanitation conducive to health.
3. Absolute freedom from Bacillary White Diarrhoea as ascertained by consecutive non-reacting official tests by the Massachusetts Agricultural Experiment Station.

Eighty commercial flocks holding credentials under this organization provide a supply and distribution of this superior source of day-old chicks in the state. Appreciation of this high standard set is shown in the increased demand from new applicants for membership in the Massachusetts Certified Poultry Breeders' Association, and in the fact that orders for "Certified Stock" are so great that it is impossible to fill them.

Again in 1927, as in 1926, he had the winning pen of Rhode Island Reds at the New York State Egg Laying Contest, Farmingdale, L. I. This pen laid 2142 eggs against his nearest competitor laying 2077 eggs.

The second laurel is the fact that Mr. Storer's flock was chosen, among three in the state, for a shipment of Rhode Island Red breeding stock to the Santiago Experiment Station, Chile. His farm was selected after considerable study on the part of the government authorities.

MELVILLE G. GREY, WENHAM, MASS.

A County Agricultural School Graduate

Melville G. Grey entered Essex County Agricultural School in 1914 with the second entering class and graduated in 1917. He had previously had a partial course in the Beverly High School. His interest in gardening in the home city, Beverly, known locally as the Garden City, soon gave him an opportunity to carry as a summer project several small, private places which he did by employing ordinary laborers to do much of the work. Upon graduation he was employed first by Hitchens and Co., greenhouse contractors and builders, as draftsman and salesman. When war was declared Grey immediately enlisted and continued in service until the Armistice. When peace was declared he at once became an agricultural instructor in the Army of Occupation serving under the direction of President Butterfield of the Massachusetts Agricultural College.

Upon his return to America Mr. Grey purchased the present farm in Wenham. This is a small diversified farm of 16 acres, with highly suitable buildings. He farms very intensively, producing vegetables, specializing in asparagus, small fruits; and he has now planted fruit trees in practically the entire area, except the large asparagus fields. The entire property is intensively farmed. He has added a high grade herd of dairy cattle and carries a large flock of poultry. His income is derived from the following sources of agricultural products: Fruit, dairy products, asparagus, poultry products, small fruits and vegetables.

Mr. Grey's method of marketing is unique. Besides supplying an exclusive boarding house with nearly all the farm products they use he

maintains a milk route over which he sells milk, cream, eggs, fruit and vegetables. He also maintains a splendid roadside stand. Mr. Grey has recently purchased an additional 16 acres, now giving him 32 acres in the midst of neighbors who maintain private estates, beautiful country homes and suburban residences. Adjacent to his land is a country club. This makes his farm seem like an oasis in the production of commercial agricultural crops.

Mr. Grey finds time to be an all round citizen. He is President of the Essex County Branch of the Roadside Stand Association, he is a member of the Advisory Board of the Essex County Agricultural School, a trustee of the Essex Agricultural Society and an active worker with the Extension Service of the School. He has been President of the Alumni Association of the School and carried it through one of the most trying times of its existence. He has served repeatedly on judging committees both connected with the School and with outside organizations. His farm met with much favorable praise when visited by the Agricultural Vocational Teachers. His farm has become a demonstration place in many ways. Authorities at the school have visited him when Extension tours in the county were made. His enterprise was reviewed by the Board of Agriculture when examining it in 1926. Mr. Grey has been very cooperative in taking undergraduate students for summer project training.

HOWARD WATERMAN, HALIFAX, MASS.

Success in Boys' Club Work

In the three years that Howard Waterman of Halifax, Mass., now 19 years old, has been a 4-H poultry club member, he has made a profit of \$4363.24. But, in addition to becoming successful financially himself he has been a factor in the development of a community spirit in the town, has been a leader among the boys of Halifax and also among all the 4-H club members of Plymouth County, and was one of four Massachusetts representatives at the first national 4-H club camp at Washington.

His first experience in an agricultural club was raising a pure-bred Duroc Jersey hog. For six years he bred Duroc Jerseys and twice exhibited in the open classes at Brockton Fair, defeating the men in competition for first prize.

Mr. Waterman was selected from a great number of eligible boys to attend the National camp at Washington, D. C. during the summer of 1927. He took an active part in the proceedings of the conference.

Since his return from the Washington camp, he has been of very great assistance to the county leader. He was always ready to work hard. He was always available to lead group meetings and assisted in keeping the spirit of the meetings of a high pitch.

The other boys and girls of the county and district have been stimulated to greater effort and success by the splendid example of Howard Waterman.

JOHN BURSLEY, WEST BARNSTABLE, MASS.

A Representative Farmer and Citizen

To those who have been close to the agricultural life of Massachusetts a familiar figure has been constantly with us; on the farm; in the Grange; in the Agricultural College and in the Department of Agriculture, he has seen men come and pass along; he has been and still is a great inspiration to those of us who have been favored by this contact.

The figure is that of our friend John Bursley appointed to the Board of Agriculture in September, 1891, as a delegate from the Barnstable County Agricultural Society. He served on the Board by successive re-appointments from his home society until the reorganization of the old Board in 1918. He was appointed as county delegate to the Board and upon the final reorganization in 1919 he was appointed on the Advisory

Council; so he stands today as one who has seen the longest term of service in the Department of Agriculture.

During the period of his terms on the Board Mr. Bursley has served with the following secretaries: Messrs. Russell, Sessions, Stockwell, Ellsworth, Wheeler and now with the Commissioner Gilbert. He has held all of the elective positions on the Board and served as president for many years and as a member of most of the important committees. Needless to say he was most highly respected by his fellow members and his advice sought by all. As presiding officer of the Board he had tact and grace so that all felt the charm of his presence. The greatest harmony prevailed at all the meetings of the Board and those who were fortunate enough to be associated with him will long recall these meetings with pleasant recollections.

On Cape Cod where Mr. Bursley lives he is best known as a very successful farmer, a kindly neighbor and a man of the strictest integrity. His services are sought as administrator of estates in all parts of the county. He is connected with all of the agricultural activities of the county, has served the Barnstable County Agricultural Society in all its important affairs and is keenly interested in the Farm Bureau.

His farm, which is the old family homestead, is beautifully located on the edge of the Barnstable marshes and from the charming old house may be seen the sand dunes of Sandy Neck and across the broad meadow the beautiful water of Massachusetts Bay, the same sight that greeted the Pilgrims in the early days of the country. Mr. Bursley has practiced the best methods of dairy farming and stands well in the lead on the Cape in clean milk production, and the summer visitor counts himself fortunate if he can secure milk from his farm where extreme cleanliness and prompt service are rigidly practiced.

Rarely do we have such a combination as in our friend—the successful farmer, the kindly neighbor, the faithful advisor, “without fear and without reproach”—surely we cannot do better than honor him as one of the foremost loyal agricultural workers of Massachusetts.

REPORT OF THE DIVISION OF DAIRYING AND ANIMAL HUSBANDRY

INSPECTION WORK

Inspectors of the division have been very active in checking up on violations of the oleomargarine laws. A larger number of inspections were made but fewer cases were prosecuted,—17 as against 25 in 1926. A total of 5,628 inspections were made compared to 2,573 for the previous year.

Summary of Oleomargarine Inspection

	<i>Stores</i>	<i>Restaurants</i>	<i>Boarding Houses</i>	<i>Peddlers</i>	<i>Samples</i>
December	591	35	15	2	10
January	560	90	9	3	4
February	456	91	8	4	7
March	500	60	6	2	4
April	258	30		3	6
May	289	32		4	
June	151	16		2	5
July	157	12			
August	1,154	96			3
September	732	77			
October	91	14		2	
November	65	9		2	
Totals	5,004	562	38	24	39

QUALITY MILK WORK

The campaign to improve the quality of the milk produced within the Commonwealth has been extended to new sections and developed along new lines. The object being to awaken the farmers to the necessity of producing a better product so that they can more successfully compete with the milk from neighboring states. Two tests were used in this work, the reductase test to determine the keeping quality of the milk, and the sediment test to show the cleanliness. Temperatures of each sample of milk were also taken to find out how effective the cooling had been.

Reductase tests were made of samples of milk from 1,574 farms as compared with 1,495 in 1926, while 1,332 sediment tests were made. This has been carried on in cooperation with milk dealers, milk inspectors and county agricultural agents. The value of the work is evidenced by the statement of a dealer for whom a series of tests were made and farms visited. A complete survey of his entire supply was made, and recommendations for improvement were made to the producers who made the poorest milk. He said the bacteria count dropped from 100,000 per cubic centimeter down to 10,000, and that he believed that this drop was due to the quality milk work of the division.

SUMMARY OF QUALITY MILK WORK

	<i>Reductase</i>	<i>Sediment</i>	<i>Farms Visited</i>	<i>Dealers</i>
April	200	70	19	9
May	385	221	37	47
June	321	245	68	41
July	89	80	20	20
August	262	262	82	10
September	46	46		
October	133	133	45	33
November	138	275	27	9
	<hr/> 1574	<hr/> 1332	<hr/> 298	<hr/> 169

Tests were made for dealers in the following cities and towns: Southborough, Marlborough, Fall River, Swansea, Somerset, Westport, Dartmouth, Fitchburg, Westminister, Ashby, North Leominster, Lunenburg, Leominster, North Westport, Norwood, Walpole, Worcester, Sutton, Millbury, Auburn, Arlington Heights, Bedford and Athol.

The following statement is taken from the annual report of the Worcester County Extension Service.

"Cooperating with State Department of Agriculture, tests were made of milk from 583 farms in the county to determine quality. This promises to be one of the best pieces of work this year."

HOGS

Following the plan started in 1926, another Ton Litter Contest was arranged, including both farmers and public institutions. Five litters were successful in reaching the goal, namely, raising one litter of pigs to a weight of one ton or better in six months from birth. All five litters attained a greater weight than the best one the year before, showing the improvement in methods of care, feed and management.

SUMMARY OF 1927 TON LITTER CONTEST

	<i>Institutions</i>		<i>Average</i>
	<i>No.</i>	<i>Weight</i>	<i>per pig</i>
	<i>of pigs</i>		
1. Grafton State Hospital	11	2939 lbs.	257.18 lbs.
2. Worcester State Hospital	11	2635 lbs.	239.72 lbs.
3. Northampton State Hospital	11	2630 lbs.	239.09 lbs.
4. Foxborough State Hospital	10	2560 lbs.	256.00 lbs.

Farmers Class

Joseph DeVries, No. Uxbridge	15	2395 lbs.	159.66 lbs.
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HORSES

Members of the division assisted in conducting the Commercial Horse Show at the Eastern States Exposition at Springfield. They also helped with the Dynamometer Contest at Springfield, Worcester, Uxbridge and Barre Fairs.

SHEEP

Interest in sheep has been increasing. New flocks are being started and the demand for sheep information is strong. Eleven sheep meetings were held in cooperation with the Massachusetts Sheep Breeders' Association and the New England Sheep and Wool Growers' Association.

Mr. C. D. Richardson, our sheep specialist, submits the following report:

"I have addressed 22 meetings on some phase of the sheep business.

Have assisted in the sale or purchase of 320 sheep during the year.

On numerous occasions (probably 100 or more) I have been in consultation with men in nearly every section of the State on the advisability of starting in the sheep business, or on the drawbacks in connection with the business which had already been established.

Have assisted in the pooling of nearly 20,000 lbs. of wool, about 16,000 of which was disposed of in the blanket proposition. The balance was sold direct.

Many of the sheep men in Massachusetts and adjoining States have accepted our plan of disposing of their early lambs. About 1,800 lambs were sold through channels suggested by the Division."

DAIRY CATTLE

The most important problem confronting the Massachusetts dairymen is that of replacements. With the increase in the number of herds being tested for tuberculosis, and the large number reacting, the demand for clean cattle exceeds the supply, at least as far as New England is concerned.

The difficulty of securing satisfactory replacements is well illustrated by the experience of one dairyman who submitted his herd to the tuberculin test and lost 94 animals in a three year period while trying to maintain a herd of 38 to 40 milking cows. He tried various New England sources of supply with disastrous results each time.

A number of farmers have tried buying dairy cows directly from the west. This plan seems to offer good possibilities, especially as the amount of tuberculosis infection in certain sections of the middle west is relatively low. Prices for good dairy cattle have steadily gone up until they have reached the peak of war time prices.

FAIR INSPECTIONS AND MEETINGS

Fifteen fairs and three poultry shows were inspected by the division. Members of the division attended 99 meetings, speaking at 64 of them.

REPORT OF THE DIVISION OF MARKETS

The past year has been marked by increased interest in marketing on the part of Massachusetts farmers and consumers. This increased interest is probably due largely to the New England Farm Marketing Conferences which have been held during the last two years, and to the grading program for farm products which is under way. These conferences and the discussion of grades and standards for local farm products by producers, dealers, and consumers have brought the subject of marketing to the attention of the Massachusetts public probably more clearly than ever before. It is now generally realized that a better, more efficient system of marketing locally grown farm products is necessary, first, as

a protection to consumers by assuring them of a continuous supply of fresh, locally grown, graded farm products; second, as a protection to the dealers by guaranteeing a standardized product; and, third, as a protection to the Massachusetts farmer by providing for the identification of his superior quality farm products and thereby helping him to successfully compete with products shipped in from distant producing sections.

GRADING PROGRAM

A program of uniform standard grades for New England farm products was undertaken about a year ago. It was realized that New England farmers were meeting increased competition from distant producing sections which were able in many cases, because of their superior grading and packing, to displace a considerable portion of the locally grown products in New England markets. Figures for carlot unloads in Boston, Worcester, Springfield, and other wholesale markets in Massachusetts show that during the last five years the receipts of farm products from these distant sections has increased tremendously, while the local production has been barely able to hold its own. It is generally agreed that the inability of local growers to meet the western and southern competition has been due to the fact that the locally grown products, in most cases, have not been packed and marketed under standard grades. The dealers and consumers in our eastern markets prefer to buy the better graded products of the West and the South.

In order to meet this situation, a grading program was outlined at the First Annual Farm Marketing Conference in December, 1926, and steps were immediately taken to carry the program into effect. A law was passed and approved April 18, 1927, granting the Commissioner of Agriculture the authority to establish voluntary grades and standards for farm products, and providing for an identification sign or label to be used by those producers who wished to pack their products according to the grade requirements.

A label has been designed and will be sold at reasonable prices to Massachusetts producers. The products sold under the label will be subject to the supervision of the Massachusetts Department of Agriculture and failure to meet the grade requirements will forfeit the privilege of further use of the label. The Division has already received many requests for the label and a large number of producers will probably use it in selling their 1928 crops.

Groups of poultry producers and market gardeners have met a number of times in the state and have tentatively outlined the grade requirements for eggs, bunched beets, carrots, radishes, turnips, asparagus, celery, and strawberries. Other groups of producers are interested and the end of another year should see the official adoption of grade requirements for other commodities. The grades are based on careful studies of market requirements.

ENFORCEMENT OF THE APPLE GRADING LAW

The Apple Grading Law requires that all apples grown in Massachusetts and sold in closed packages be marked according to grade. The enforcement of this law during the past few years has demonstrated its worth to Massachusetts growers and consumers. The quality of local fruit in our markets has improved and locally grown apples are successfully competing with western fruit for the fancy trade.

A considerable amount of educational work is necessary each year in order to inform growers as to the requirements of the Apple Grading Law. During the fall of 1927 an apple grading and packing school was conducted in Franklin County in cooperation with the Massachusetts Agricultural College and the Franklin County Extension Service. The school was attended by a large number of apple producers. These men competed with one another for a prize which was given to the man who

packed the best barrel, basket, and box of apples. The school was gratifyingly successful and similar schools have been suggested for the coming year. It is believed that the practical demonstration of grading methods and the interpretations of the law have led to a better understanding than ever before of the proper method of packing and grading and will lead to improved quality of fruit.

The inspectors of the Division have made inspections of apples in the markets and at country points, and have reported all cases of violation of the law. There have been fewer cases of misbranding than usual this year, but the large amount of insect injury this year has led to a number of cases of overfacing. All such cases have been reported and hearings have been held in order to acquaint growers with the meaning of the law and to make certain that future shipments would be packed according to requirements.

A few minor changes in regulations were made this year to provide for allowing light colored Gravensteins in A grade and to bring the regulations into closer conformity with the Federal regulations and the various state regulations in New England. The increased use of the Western Apple Box may require additional changes during the coming year.

WHOLESALE MARKET NEWS

Farmers' Produce Market Report: The farmers' produce market report is issued daily at Boston, Worcester, and Springfield. Representatives of the Division of Markets visit these markets every morning during the early trading hours and interview wholesalers, commission men, jobbers, and buyers. In this way they obtain the facts concerning the prices of farm products offered for sale and also the volume of these products on the market.

The investigator then makes a report for the day. This report is disseminated by mail, newspapers, and radio. These reports are followed carefully by a large and increasing number of farmers and dealers in the state. They provide an unbiased and reliable picture of market conditions, and afford the producer a good basis for judgment as to the time to market his products, and the type of products to sell.

The increasing use of the radio and the newspapers as means of disseminating market reports has decreased the importance of the mailed reports to some extent. The mailed reports in Springfield have been discontinued because it has been possible to supply the needs of the local producers by other means.

Special Reports: The Special Apple Market Report has been continued and is filling a real need of the Massachusetts fruit growers for detailed information concerning supply, demand, and prices of varieties and grades of apples. The report summarizes market conditions in Boston, Worcester, Springfield, and Providence, and also in country points.

Two special asparagus reports were issued during the 1927 season. These reports have been valuable to asparagus growers and similar reports for other commodities have been suggested from time to time.

Supplementary Reports: The supplementary market news service, including weekly reports on the Brighton Livestock Market and the hay, grain, straw, and feed prices, has been continued throughout the year.

RETAIL MARKET NEWS

Retail market reports for consumers are published in Boston, Worcester, and Springfield. These reports indicate the prices of food products in the city stores and suggest the best time to buy certain products. The consumer is kept informed of the market conditions and is able to benefit from periods of low prices. This also helps to relieve glutted conditions and therefore is of value to producers. The reports contain useful information as to the proper time to buy for canning and storage and also suggest new recipes and menus.

The retail reports are disseminated by mail, newspaper, and radio.

The following organizations are cooperating with the Division of Markets in furnishing timely recipes and menus: The Massachusetts Federation of Women's Clubs, the Hampden County Improvement League, and the Worcester County Extension Service.

COOPERATIVE MARKETING

Many farmers' cooperative marketing associations have asked for assistance from the Division of Markets in making market contacts, in supplying them with market information, and in the inspection of their products. Such services have been gladly performed and have been of considerable value.

The past year has seen the formation of two new cooperative marketing associations: the Middlesex County Asparagus Growers' Association and the Westford Apple Growers' Association. The Middlesex County Asparagus Growers' Association was organized early in the year in order to standardize the quality of asparagus shipped from the Concord section. About twenty of the leading asparagus growers joined the association, adopted uniform grades and a uniform box, and sold their product in Boston. The Division of Markets cooperated in the organization of the association and supervised the inspection of the asparagus on the market. The association was able to build up a good demand for their product and were able to get prices considerably higher than those obtained for the ungraded product.

The Westford Apple Growers' Association was organized during the summer and a group of about twenty apple growers are now selling their products in the Boston market. Their fruit is graded and packed uniformly and they are succeeding in building up a trade for a quality product.

ROADSIDE MARKETING

The Division of Markets has made a number of studies of the roadside market situation in order to provide some method of reasonable control. The public and the farmer are both suffering from unfair competition on the part of dealers or hucksters who sell at roadside stands inferior produce trucked out from city markets. Some steps are necessary in order to identify the real farmer stands which sell local produce.

The Massachusetts Farmers' Roadside Stand Association is attempting to meet the situation and has cooperated with the Massachusetts Division of Markets in setting up and enforcing rules and regulations for the conduct of farmers' roadside stands. During the last year this association requested the Division of Markets to inspect the stands of its members. An inspection was made and recommendations for the improvements of the situation were given.

NATIONAL APPLE WEEK AND NATIONAL EGG WEEK

In order to stimulate consumption of local farm products, the Massachusetts Division of Markets has cooperated with other public agencies during the past year in promoting National Apple Week and National Egg Week. The cooperation of chambers of commerce, storekeepers, growers, hotels, railroads, and other interested parties was secured. Thirty-five hundred posters were sold for Egg Week and were shown in connection with window displays in the stores. Eggs were featured on the menus of hotels, restaurants, and dining cars during the week. The Department of Agriculture awarded ribbons for the best window displays during National Apple Week and silver cups were awarded to the cities and towns which made the best showing.

CROP REPORTS

In cooperation with the New England Crop Reporting Service, reports are being published periodically of the acreage, condition, yield per acre, and production of the principal crops of the state. These reports furnish the farmers with the only available information of an unprejudiced na-

ture of the probable supply of farm products and the outlook for market conditions.

The Crop Reporting Service has cooperated during the past year in a comprehensive study of the milk situation. A special report of farm conditions in the state has been made each month and furnished to newspapers and to farm publications.

RESEARCH

Market Statistics: Statistics of market receipts, prices, shipments, etc. have been compiled and used from time to time. A bulletin was prepared and published showing the Receipts and Sources of Boston's Food Supply for 1926. A similar report for 1927 is now being compiled.

Study of Quality Factors in Vegetables: Inspection records of quality and prices of vegetables in Boston have been analyzed in order to discover the physical quality characteristics which influence market demand. The study has pointed out many valuable facts which can be used by Massachusetts market gardeners. It indicates the varieties, types, sizes, etc. which sell most readily in the market and has an important bearing on the production and marketing policies of Massachusetts growers. No report of this study has been published, but the material has been used in meetings of growers and production specialists and has attracted a great deal of interest. On the basis of this study many asparagus growers in the Concord section and on Cape Cod are investigating the possibility of growing a longer green stalk and cucumber growers in Dighton are planning on growing the Belleville variety of hot house cucumber in place of the Granite State variety which has been grown there extensively.

COOPERATIVE RELATIONS

New England Council: The Massachusetts Division of Markets has cooperated with the New England Council in the development of a New England grading program. The Second Annual Farm Marketing Conference was held in Boston on December 9 and 10, at which time groups of producers outlined their plans for a marketing program.

New England Association of Marketing Officials: In outlining grade requirements for farm products the Massachusetts Division of Markets has cooperated with the New England Association of Marketing Officials in order to develop uniform grades for New England.

United States Department of Agriculture: Through the United States Bureau of Agricultural Economics the Massachusetts Division of Markets is able to keep in constant touch with developments in all parts of the country. Data are supplied on prices, receipts, unloads, shipments, storage, etc. in all parts of the country.

New England Research Council: The Massachusetts Division of Markets has cooperated with the New England Research Council during the past year in making several studies, the most notable of which was the study of milk marketing in New England.

New England Crop Reporting Service: In cooperation with the New England Crop Reporting Service the Massachusetts producer has been supplied with current information concerning acreage, condition, yield, and probable production of the most important crops of the state.

Massachusetts Agricultural College: The Massachusetts Division of Markets has received hearty support and cooperation during the past year from the Massachusetts Agricultural College, the Extension Service, and the Experiment Station.

REPORT OF THE DIRECTOR OF THE DIVISION OF ORNITHOLOGY FOR 1927

BIRDS OF MASSACHUSETTS

During the past year the second volume of the work on The Birds of Massachusetts and Other New England States was finished, published and delivered at the office of the Secretary of State on December 12. The edition was 7,500, and over 4,000 copies were sold within the first month. Work on the third volume also went on during the latter part of the year.

DISSEMINATION OF INFORMATION

Besides this major work the issuance of the monthly bulletin on birds, entitled, "Items of Interest," continued through the year. This bulletin contains information regarding the distribution of birds in the State, as well as their economic status. Advice and information on all phases of bird life, its economic value, identification of specimens, etc. have been given by correspondence, telephone and personal interview. Much free bird literature has been distributed, and many illustrated lectures given by Dr. John B. May and Mrs. Alice B. Harrington.

PUBLICATIONS

Two of the bulletins of the Division have been revised and reprinted: No. 112, Bird Houses and Nesting Boxes, and No. 116, Food, Feeding and Drinking Appliances and Nesting Material to Attract Birds.

CORRELATED ACTIVITIES

The Director has attended ornithological conferences, has been consulted by various organizations, such as the Massachusetts Fish and Game Association, the Federation of Bird Clubs of New England, the State Grange, Audubon Societies and many other societies interested in the conservation of wild life, has acted as New England Agent of the National Association of Audubon Societies, and, under appointment by the Secretary of Agriculture at Washington, served as a member of the Federal Advisory Board on the Migratory Bird Treaty Act, which revises the regulations under which migratory birds receive Federal protection throughout the United States.

HEATH HEN

The numbers of the Heath Hen at last reports were very low, only a few birds having been seen recently. Goshawks have come down again from the North this fall and a number have been seen and some shot on Marthas Vineyard. They probably have reduced the numbers of the Heath Hen considerably. This species again appears to be on the verge of extinction.

SANCTUARIES AND RESERVATIONS

The Director has served as Vice President of the Federation of Bird Clubs, Inc., which last year acquired property in Sandwich, Ashby (a second lot on Mount Watatic) and Boxford. These properties have been made over to the State to be held as perpetual bird sanctuaries and reservations. The Federation now is planning to purchase a large parcel of land in Berkshire County for another reservation.

E. H. FORBUSH,
Director.

REPORT OF THE DIVISION OF PLANT PEST CONTROL

NURSERY INSPECTION

Nursery inspection, a public service which benefits all citizens of the State, is required not so much for the good of the nurseryman as for the protection of the individual who buys the stock. It is to the interest of the nurseryman to maintain his plants in as high a state of health as possible, and for this reason a general adoption of regular control measures is urged, to bring about a clean condition of nursery plants. It is the duty of the inspector to detect the presence of pests and to notify the nurseryman who can take the necessary steps to eliminate the trouble or establish reasonable control. The accomplishment of pest control in the nursery is largely the concern of the nurseryman, assisted by instruction and cooperation from the inspector.

This past year, the Division of Plant Pest Control inspected 248 nurseries and issued certificates covering these. It was necessary to inspect a reasonable distance around each nursery, thereby establishing an immune belt. It is absolutely essential to have such a clean area around the nurseries. Whenever pests are found in this belt, notice is served on the property owner, giving a specified time for said owner to abate whatever nuisance is present. In 1927, most of the owners complied with requests to clean up. It was, however, necessary in a few instances for the Division to enter and perform the work. In general, the condition of the nurseries was exceptionally good. Very little scale infested stock was found. It was also noticeable that the stock entering Massachusetts from other States was especially free from scale.

Infection of white pine blister rust was found in two nurseries. In order that the larger nurseries of the State might be better protected against this disease, the Division is endeavoring to maintain a Ribes free zone for 1500 feet around nurseries growing any considerable amount of white pine. As an additional precaution, all black currants are removed for a distance of one mile from the nursery. On April 1 the black currant was declared a nuisance in Massachusetts. In order to aid the eradication of this plant and to better acquaint the public with it, a circular was prepared and issued, and several thousand copies were distributed through the Massachusetts Forestry Association and the County Extension Services. It will probably be at least two more years before this work is completed.

The menace to the white pine forests of this country by blister rust, needs little comment to anyone who has had an opportunity to see this disease in operation. The greatest care should be exercised to check the spread of blister rust.

While the gypsy moths were much more prevalent this year than last, the immune belt prevented any serious infestation in the nurseries.

The Satin Moth which was first noticed in this country a few years ago and which attacks only willows and poplars, is very seldom found in the nurseries. This insect is considered a free flier, and has spread rapidly within the last three years, the scouting this past summer showing it to be as far West as Holyoke. It was noticeable in several cases that the degree of infestation had increased. This pest, however, is easily controlled by spraying with arsenate of lead in June.

A disease, new to this country was brought to the attention of the Division early this summer. It is commonly called *Larch canker* and was found to be quite prevalent on larches on the estate of Nathan Mathews, at Hamilton. Very little is known about the disease, but in all probability it was imported from Scotland. A careful study is being made of the

Larch Canker at the present time, and precautionary measures will be taken.

As has been the policy for the last few years, scouting for the Oriental Hag Moth has been carried on and no increase in spread has been reported.

The Eastern Plant Conference Board which was organized in 1926 and is composed of representatives of the Eastern States, is proving very helpful. The meetings have been well attended and matters of much importance to all have been discussed and solved.

EUROPEAN CORN BORER

The European corn borer is now considered one of the major insects of the country. As in past years, the Division has been cooperating with the United States Government from June 1 to January 1 in enforcing the quarantine which prohibits the shipment of certain flowers and vegetables without inspection. This requires a corps of men in both the Boston flower and vegetable markets, as well as a crew in the field. The field crew inspect produce shipped direct from the farms to points outside the quarantined area. The Massachusetts law which was passed in 1923, and requires that all corn stubble be plowed under or buried or burned by December 1, has been enforced vigorously. Until this year it has been the policy to bring offenders into court. This measure, however, seemed rather drastic for a first offence, and a change was brought about whereby the offenders were summonsed into the office of the Division, about 300 in number, and given an educational lecture. The results have been most encouraging. Over 100,000 copies of the corn borer law were distributed throughout the infested area with the aid of the post office department, and in this manner it was given wide publicity. During December the Division inspectors made a careful check up of all violators. It is very gratifying to record that since this law went into effect, the area of infestation has not increased in Massachusetts. It is interesting to note that a native egg parasite, *Trichogramma*, killed slightly over 25% of the second generation corn borer eggs, and that six imported species have been firmly established near Boston. While these imported parasites are as yet accomplishing very little in the way of control, the outlook is hopeful.

Representatives of the New England States were called to a meeting for the purpose of discussing what action should be taken in dealing with the European corn borer in New England. Maine and Massachusetts have specific corn borer laws, while the other States do not seem to have sufficient legislation to cope with the situation. As the insect has spread rapidly in Rhode Island during the past year and as a considerable part of that State borders Massachusetts, it is decidedly to the advantage of this State to have some action taken in Rhode Island. A committee of this Conference, of which the Director of the Division of Plant Pest Control was Chairman, reported that "where the European corn borer is prevalent or on the increase, specific legislation is advisable." In view of this, it appears that Rhode Island should pass legislation similar to that in effect in Massachusetts.

Division inspectors were stationed on the New York line this summer to prohibit the importation of corn from New York State where the European corn borer is established. During this period it was discovered that the towns next to and immediately adjoining the New York line were infested with the borer. Unquestionably, this infestation, which affected 15 towns, is a spread from New York. There were three additional inspectors assigned to this district, and a thorough educational campaign was carried out. Even though the law was not effective in these towns, a very fine spirit of cooperation was shown, and without doubt 90% of the area planted to corn was plowed.

APIARY INSPECTION

The freedom from diseases of the bees in Berkshire County and in the Connecticut Valley, as detailed in the Annual Report for 1926, persisted during 1927. This is most gratifying and encouraging. Thus it appears that bee diseases west of Worcester County in Massachusetts have been largely suppressed, and subjected to control at a negligible percentage for a period of at least two years. The few cases found in 1927 in this territory are entirely sporadic. There has been no further introduction of disease in this territory, from sources without the State. This continued improvement in western Massachusetts, suggests that gradually in eastern Massachusetts similar conditions will prevail.

Conditions in Worcester County are somewhat improved, altho there is no general freedom from disease. This suggests the advisability of a concerted effort to crowd out disease, by beginning at the western line of Worcester County and working eastward and south to the sea, an intensive drive in purpose. This, however, would call for more radical measures, and possibly the destruction of a greater number of diseased colonies than it is now desirable to order destroyed.

The legislation proposed and outlined in Rhode Island in 1926 was not enacted, so that the cooperation between Massachusetts and Rhode Island as outlined, has not yet become possible. Rhode Island still hopes for legislation which will make this effective. The inspector has twice visited Rhode Island, for the purpose of furthering this project.

The box hive situation in Massachusetts continues to improve. As heretofore stated, those who still maintain bees in box hives are largely foreigners or persons quite unfamiliar with beekeeping. The percentage is diminishing. The inspectors gradually convince these beekeepers, that to maintain their bees in hives with removable frames, is to their advantage. Consequently, today there are even fewer box hives than heretofore, in most localities.

During the past year, there have been no serious outbreaks of disease in any part of the State. The sporadic outbreak at Provincetown has been entirely suppressed. The persistence of American foulbrood is noticeable, as it has been for some years past, especially in southeastern Massachusetts. Particular attention, in all cases of old apiaries where American foulbrood is found, is being given to the general sanitary conditions of such apiaries. Searches are made for stored combs. In this way, old combs, which may have been diseased in years past, are gradually being destroyed or disinfected. Hence, the possibilities of a re-infection by the use of these old combs, and the perpetuation of disease from cases which occurred years ago, is constantly less.

The personnel of the inspection force for 1927 was as follows:

DEPUTY APIARY INSPECTORS

- Mr. Fred Challet, Northampton (Connecticut Valley)
 - Mr. F. S. Devereux, Green Harbor (Plymouth County and vicinity)
 - Mr. Charles N. Ellis, Westwood (South of Boston)
 - Mr. Benjamin A. Hildreth, Sherborn (Worcester County and north of Boston)
 - Mr. Ivan Rawson, Pittsfield (Berkshire County)
 - Mr. H. L. Walton, Worcester (Worcester and Middlesex Counties)
- (Localities covered by the inspectors have been indicated in parenthesis).

Mr. Charles N. Ellis has signified his inability to serve in the coming year. Mr. Devereux was first employed this season. Burton N. Gates of Worcester was Inspector of Apiaries, devoting part time. The Deputies were appointed temporarily and worked part time during the season.

WHITE PINE BLISTER RUST

Through error, it was stated in the 1926 report of this Division, that the white pine blister rust was first found in Massachusetts in the year 1917. As a matter of record, the disease was found in the State in the

spring of 1909 in the town of Andover. By the end of the year 1917, the rust had been located on white pines in 72 townships and to date, November 30, 1927, the disease is known to have been present in 236 townships.

The division, in cooperation with the United States Department of Agriculture and the State Extension Service, has continued the campaign to prevent the further spread of the rust, by enlisting the cooperation of property owners in the work of removing all currant and gooseberry bushes that may be endangering white pines. Currants and gooseberries being susceptible to the rust, act as agents in the spread of the disease to white pines.

The fundamental principle under which this control work is being prosecuted is to the effect that, while the responsibility for the protection of white pine in private ownership rests with the owner, it is a function of the Federal and State authorities to assist owners to some extent. This assistance is rendered in the form of inspection and supervision in locating and eradicating the offending currant and gooseberry bushes. During the year, the Division, through its assistants, and in the manner as described in previous reports, has cooperated with 1,973 property owners. This work has involved the examination of 293,369 acres of land in the important pine growing sections of the State. On the area examined, 683,156 wild and 31,753 cultivated currant and gooseberry bushes were found and uprooted. The property owners cooperating in the work expended the equivalent of \$9,029.36 in time or hire of laborers to perform the necessary work. Although every effort has been made to secure the voluntary removal of all cultivated currant and gooseberry bushes in the local control areas, it has been necessary to use the authority of the law in a few instances. This action has resulted in the filing of 37 claims for compensation. These claims involve requests for reimbursement for 2,296 bushes, valued according to the schedule of replacement values as established by the department, at \$933.25. It should be noted that 1,649 owners or 98% have made no claim for reimbursement.

In order to increase the effectiveness of the control work, the Division restricts the further planting of currant and gooseberry bushes in all the towns where intensive control work is performed. By official order, dated January 3, 1928, this restriction was placed on 150 townships in the State. These towns are designated as blister rust control areas and under the provisions of the Federal quarantine No. 63, no currant or gooseberry plants can be shipped into these towns from other States. Under a special permit, however, such plants can be shipped to other towns and cities in the Commonwealth. During the fiscal year, 248 such permits were granted. These permits authorized the entry of 3,479 currant and gooseberry plants.

The following personnel has administered the blister rust control policy of the Division during the fiscal year 1927:

Agent in Charge State Leader	C. C. Perry
District I-II Essex and Middlesex Counties	W. T. Roop
District III-IV Plymouth, Norfolk, and Bristol Counties	E. M. Brockway
District V Worcester (South) County	E. J. McNerney
District VI Worcester (North) County	William Clave
District VII Franklin-Hampshire (North) Counties	G. S. Doore
District VIII Hampden-Hampshire (South) Counties	R. E. Wheeler
District IX Berkshire County	W. J. Endersbee

The Director takes great pleasure in commending the work of Mr. Carl C. Perry, for without his faithfulness and interest, it would be difficult to accomplish the results that have been obtained in the white pine blister rust work.

DIVISION OF RECLAMATION, SOIL SURVEY AND FAIRS

RECLAMATION

The reclamation work of this division has been conducted as in previous years through the State Reclamation Board of which the director of the division is secretary. The report of the Board follows:

REPORT OF STATE RECLAMATION BOARD

The Reclamation Board for 1927 was composed of Mr. Gordon Hutchins of Concord, chairman, representing the Department of Health; Mr. Leslie R. Smith of Hadley, executive officer and secretary, representing the Department of Agriculture; and Mr. Richard K. Hale of Brookline from the Department of Public Works. For administrative purposes the Board functions under the Department of Agriculture.

RECOMMENDATIONS FOR LEGISLATION

No legislature is recommended for the coming session. Should flood protection projects develop under this law it will be advisable to make some minor adjustments in the following session.

GENERAL WORK OF THE BOARD

The statements of the 1926 report so clearly outline the functions of the Board that they are here repeated: "As in previous years the Board has continued the supervision and direction of existing reclamation projects in their formation, construction and maintenance, has acted as a bureau of information on various drainage matters for State and town officials, and for such individuals as presented to it their problems. It wishes to point out that the Reclamation Law was drawn to provide the owners of wet lands with the necessary legal machinery for accomplishing their purposes; that under this law the entire cost is assessed upon the land benefitted; that the State pays only the cost of supervision; that the law is available for all wishing to use it; that it can be used to solve many of the sanitary problems of cities and towns. The Board has continued its policy of encouraging district organization to work with and assist town authorities in solving their mutual drainage problems. It desires to again emphasize the fact that the cost of projects developed under the Reclamation Law is assessed upon the land owners benefitted; the only portion of these expenses borne by the State being that of assistance in organizing and of supervision." There has been no new construction started this year.

DRAINAGE DISTRICTS

Only three districts remain of those organized under the original Drainage Laws; namely, the Cherry Rum Brook District, Greenfield; the Weweantic River District in Carver and Wareham; and the Salisbury District at Salisbury.

The first was finished and the assessments made in 1925. The project has been paid for and some additional maintenance carried on.

The Weweantic District has been completed, the cost repaid to the County by the town of Carver and by it assessed on the individuals benefitted. It is planned to dissolve this district and later organize one or more reclamation districts to provide storage reservoirs for the cranberry bogs, and to adjust flooding and discharge from these bogs to prevent unnecessary damage to any bog. The total cost of draining these cranberry bogs was \$3,177.86.

The Salisbury District became active this year. This is the first project examined by the original Drainage Board. Under the drainage law these districts can only be financed through the use of the county credit

and this credit had been refused up to this year. Changed conditions now make the financing of this project possible. The construction problems involved are simple. However, to avoid a long and expensive dike just inside the state line, the plan contemplated using the highway embankment just over the line in New Hampshire. This has greatly complicated the legal status of the structure. The War Department, several departments in both States and the County of Essex have to be brought into agreement. It is expected that these agreements will be completed in time to allow construction to start in the spring of 1928.

RECLAMATION DISTRICTS

1. *Assabet River, Westboro and Northboro.* The first preliminary part of this project was finished in 1926. Owners who had their land prepared obtained very fine crops during 1927. Plans for extending the work were considered but have not yet been put into execution.

2. *Bear Meadow, Whitman.* Work on this project has been extended through cooperation with the town authorities. The town purchased and drained Hobart's Pond at the upper end of the project and did considerable work on clearing the channel of the river through the district. The most important matter remaining to be worked out is the care of crude sewage which is delivered through a town ditch in the west side of the project.

3. *Cutter Swamp, Arlington.* This project came to a standstill during the spring over the proposed assessment roll. Suggestions for changes and extensions to cover the construction of a highway to reach the buildings on the edges of the district were made by the Board, but so far no action has been taken by the District.

4. *Green Harbor, Marshfield.* Construction on this project was finished in 1925. A small amount of maintenance is carried on each year. Matters related to the financing were handled by the Board during the year and arrangements made for paying to the county the district's portion of the construction expense.

5. *Milford, Milford.* This project was finished in 1926 to the extent of the original plans. These called for clearing the channel of the Charles River to carry ordinary high water but not floods. The flood of November 1927 only just topped the banks and little damage would have resulted if the rubbish in the dumps along Center Street had been confined. Extending this work is under contemplation.

6. *Wapping, Deerfield.* There has been no construction here this year although plans for extension are being considered.

INACTIVE PROJECTS

None of the inactive projects have developed during the year.

NEW PROJECTS

One new petition has been received by the Board from Tewksbury. Several other inquiries were received. Assistance was given on drainage matters in Lexington, Hubbardston and Scituate.

FLOODS

Floods have been given considerable attention this year. The Reclamation Law provides the necessary legal machinery, both for the proper study of floods in the State and for planning, organizing, and construction of works for flood prevention. Lack of funds has so far prevented all but the most casual study of different localities for this purpose; but, given the necessary appropriation, no other legal machinery need be created for handling such protection. Some details of the law could be changed to advantage, but without change, a very great deal may be accomplished. In August the attention of the Mayor and Chamber of Commerce of Northampton was directed to the flood danger there and the availability of the Reclamation Law for protection was explained. In

September a small flood occurred in Plymouth County which damaged summer resorts, cranberry bogs and highway construction. Assistance was given in bringing together the necessary agencies for clearing the channels and adjusting the flow through dams, which lessened the damage. With greater facilities and a little more authority over streams the Board could often prevent a large portion of the damage caused by these small floods. Authority is needed to regulate storage reserves and to have obstructions in river channels removed in such emergencies.

During the great flood of November the Board's consulting engineer examined the Blackstone River, the Charles River at Medford, the damage between Milford and Springfield, the Connecticut River between Springfield and Northampton, the Westfield River and the site of the Becket dam. A special report was prepared covering these observations with a view to determining principally the damage to agriculture and methods of preventing of the damage both to agriculture and communities. The recommendations outlined are briefly:

1. Have the State join with the United States Weather Bureau in establishing a system of flood warning, especially for the Connecticut River Valley.

2. Ask the Legislature to remove the care of dams from the counties and establish a State agency with power to inspect all dams and regulate the use of the water in there stored.

3. Have the State indicate to local communities the possibilities of flood protection, and aid in carrying out such plans. Existing legislation to be simplified for that purpose.

4. Endeavor to obtain joint action between Massachusetts, Vermont and New Hampshire for flood protection.

5. State to co-operate with the United States Geological Survey in gaging the streams of the State.

6. Have a board of expert engineers and lawyers study and make recommendations for revising the water laws.

Respectfully submitted,

STATE RECLAMATION BOARD

By Leslie R. Smith, Secretary.

SOIL SURVEY

The soil survey of Massachusetts is steadily going forward. Hampden county was finished during the season of 1927 and a little over 100 square miles of Hampshire county was surveyed. Reports of the survey are now available at this office of Norfolk, Bristol, Barnstable, and Worcester counties. Reports of Middlesex, Essex, Berkshire, Hampden, Dukes and Nantucket counties are in process of printing. There still remains the balance of Hampshire and all of Franklin counties to be surveyed. This will complete the entire state and this will be accomplished without doubt during the season of 1929.

FAIRS

The first agricultural fair to be held in the United States was in 1810 at Pittsfield, Massachusetts. Since then the fair has spread into every state in the Union and to all parts of Canada. The extent to which this sort of outdoor exhibit has grown and the importance to which it has attained may be seen by the following figures given in the annual report of President E. L. Richardson of the International Association of Fairs and Expositions for 1927.

There were held in Canada and the United States during 1927, 2,368 State, District and County Agricultural Fairs, which were attended by 39,468,550 people and at which there were paid in premiums the sum of \$8,400,714.00.

In Massachusetts during the season of 1927, there were held 110 agri-

cultural fairs at which State prizes were offered in varying amounts. These exhibits included county, community and grange fairs, poultry and rabbit shows, boys' and girls' exhibits. At these exhibits there were paid for agricultural exhibits the sum of \$64,000.00 of which the state prizes amounted to one-third or approximately, \$21,000.00. These figures do not include the Eastern States Exposition or the Brockton Fair.

The attendance at thirty major fairs in Massachusetts together with the Eastern States Exposition and Brockton Fair approximated one million people. This large attendance is accounted for partly by the weather which was very favorable after September first and partly because the fairs were well worth going to see. A marked improvement was noticed in nearly all fairs, large and small.

CAMP GILBERT

The Department bore the expense of Camp Gilbert held in Amherst on the campus at the Massachusetts Agricultural College as a special reward for excellence in club work by boys and girls of Massachusetts.

MEDALS

Gold medals for outstanding agricultural achievement have been awarded as in the past. In addition silver and bronze medals and special ribbons have been awarded by the Department through agricultural societies, grange and community fairs and at special agricultural exhibits.

FINANCIAL STATEMENT OF SPECIAL EXHIBITS

Union Agricultural Meeting	\$650.22	
Eastern States Exposition	3,495.88	
Total		\$4,146.10

AGRICULTURAL PRIZE MONEY AWARDED TO SOCIETIES, GRANGES AND FAIRS

Abington Grange, \$15; Acton Agricultural Association, Inc., \$600; Acushnet Grange, \$40; Anawan Grange, \$15; Ashburnham Grange, \$25; Assonet Grange, \$11; Barnstable County Agricultural Society, \$600; Bedford Grange, \$40; Blackstone Valley Agricultural Society, \$600; Billerica Grange, \$15; Bolton Farmers' and Mech. Club, \$11; Bourne Agricultural Society, \$50; Boylston Grange, \$20; Braintree Grange, \$30; Brimfield Grange, \$30; Bristol County Young Farmers' Fair, \$250; Chester Junior Fair, \$50; Chesterfield Grange, \$12.50; Dedham Grange, \$32; Deerfield Valley Agricultural Society, \$715.50; Dunstable Grange, \$15; Essex Agricultural Society, \$1,000; Eastham Grange, \$6; East Bridge-water Grange, \$15; East Freetown Grange, \$12; Flintstone Grange, \$22; Franklin County Agricultural Society, \$1200; Gardner Agricultural Ass'n. Inc., \$599; Grafton Grange, \$15; Granby Grange, \$20; Groton Farmers' and Mech. Club, \$550; Hampden County Improvement League, \$96; Hampshire, Franklin & Hampden Agricultural Society, \$1200; Hancock Community Fair, \$119; Heath Agricultural Society, \$150; Highland Agricultural Society, \$704.50; Hillside Agricultural Society, \$715; Hilltop Grange, \$20; Hingham Agricultural & Horticultural Society, \$75; Holliston Grange, \$25; Hinsdale Grange, \$15; Hopkinton Grange, \$250; Housatonic Agricultural Society, \$1200; Lee Grange, \$30; Lexington Grange, \$15; Lincoln Grange, \$15; Littleville Community Fair, \$100; Lunenburg Community Fair, \$150; Mansfield Grange, \$35; Marshfield Agricultural & Horticultural Society, \$650; Martha's Vineyard Agricultural Society, \$400; Merrimac Grange, \$19; Nantucket Agricultural Society, \$283.25; Natick Grange, \$10; Needham Grange, \$25; New Salem Grange, \$20; Norton Grange, \$28.50; Northfield Grange, \$15; Norwood Grange, \$11; Oak Hill Grange, \$10; Otis Grange, \$21; Orange Boys' & Girls' Club, \$50; Oxford Agricultural Society, \$500; Palmer Grange, \$14; Plymouth County Agricultural Society, \$550; Princeton Grange, \$18;

Ponkapoag Grange, \$15; Reading Grange, \$25; Rochester Grange, \$10; Rockland Grange, \$20; Sandwich Agricultural Society, \$50; Southboro Farmers' Club, \$226; Southboro Grange, \$25; Stockbridge Grange, \$35; Stoughton Grange, \$15; Sterling Farmers' Club, \$75; Templeton Grange, \$38.50; Thrifty Grange, \$24; Tyngsboro Grange, \$18.50; Union Agricultural & Horticultural Society, \$715; United Shoe Machinery Athletic Association, \$48; Warren Grange, \$36.50; Waltham Grange, \$15; Wendell Grange, \$30; Westford Grange, \$15; West Newbury Grange, \$10.50; Westboro Grange, \$15; Whitman Grange, \$14; West Stockbridge Grange, \$29; Westminster Farmers' and Mech. Club, \$26; Westport Agricultural Society, \$672.50; West Granville Community Fair, \$40; Weymouth Agricultural Society, \$400; Worthington Grange, \$15; Worcester Agricultural Society, \$1499.25; Worcester County West Agricultural Society, \$800; Worcester Northwest Agricultural Society, \$847; Worcester South Agricultural Society, \$403.

The Department offered prize money through twelve Poultry, Pigeon and Pet Stock Associations during the year 1927. Each show was inspected by a representative of the Department and a record kept of the number and character of exhibits.

The prize money was awarded as follows:

Amherst Poultry Association, \$126; Athol Poultry & Pet Stock Association, \$72; Boston Poultry Association, \$489; Dressed Poultry and Egg Show, M. A. C., \$14; Fitchburg Poultry Association, \$150; Harvard Poultry Association, \$44.75; Hub Poultry Association, Inc., \$145; Norfolk County Poultry Association, \$150; Northampton Poultry Association, \$148.50; Plymouth County Extension Service, \$10; New England Poultry Association, \$175; United Rabbit & Cavy Club, \$50.

SUMMARY

Appropriation		\$30,000.00	
Balance, 1926		712.83	
			<hr/>
Total		\$30,712.83	
Agr. & Hort. Societies		\$18,255.00	
Poultry Associations		1,524.25	
Expenses of Fair Assistants		84.81	
Community Fairs		765.00	
Granges		1,163.00	
Boys' & Girls' Club Work		2,388.98	
Badges, Medals, Cups		669.03	
Stock Judging Team expenses		605.62	
Lectures		25.00	
Bee exhibits		269.33	
Equipment			
Used DeVry Projector & accessories	\$233.24		
Kodascope Model B, etc.	155.00		
Plate Glass Box	18.08		
		<hr/>	
		\$406.32	
Photography		164.34	
Special Exhibitions		4,146.10	
Trucking		25.00	
		<hr/>	
Total		\$30,491.78	
Balance			\$221.05

REGULATORY WORK

Assistance was given to the agricultural interests of the Commonwealth in preparing for the legislature the "Seed Law" and the "Farm Products

Grading Law." The enactment of these two laws by the General Court of 1927 unquestionably will be of great assistance to the farmers.

The Massachusetts seed law requires that on and after November 1, 1927 every "lot" of agricultural or vegetable seed sold, offered or exposed for sale in the Commonwealth must be labeled. The Massachusetts seed law is based upon the proposed Uniform State Seed Law as accepted by the Association of Official Seed Analysts and is designed to afford protection both to the buyer who intends to sow the seed and the seed dealer himself.

The required label on agricultural seeds must give the purity, germination, amount of weed seed present and must show definitely the quantity of noxious weed seed in the mixture.

With regard to vegetable seeds the law requires that every lot of vegetable seed whether in packet or open container must bear a tag or label showing: (1) the kind of seed and variety, (2) the name and address of the person or firm who is selling such vegetable seed.

Another important feature of the law is the label requirement of untested seeds. Seeds in this class must bear a label stating: (1) that such seed is "not tested" and, (2) the name and address of the party offering such seed for sale.

The Seed Law provides for the right of the Commissioner of Agriculture or his assistant to have access to any premises at all reasonable hours for the purpose of inspection of any lot of seed. The Commissioner and his representatives have also authority to enforce the law and prosecute all violations.

The Farm Products Grading Law provides for the establishment of grades and standards of farm products and the designing or determination of brands or labels for the purpose of identifying such farm products. This is an optional law and applies only to those persons who have made written requests to the Commissioner of Agriculture for permission to use brands or labels and the acceptance of these requests.

The law provides for penalties in case the provisions of the law have been violated.

A detailed record was kept on all agricultural bills presented to the legislature and the action taken upon them.

A policy of prevention rather than prosecution in dealing with the law enforcement program of the Department has been in effect during the past year and the results have been encouraging.

Forty cases of violations of the Corn Borer Law were tried in the District Courts of Brockton, Framingham and Harwich. Approximately 200 cases of reported violations of the Corn Borer Law were heard in the State House by a board consisting of the Agriculturist and the Director of the Division of Plant Pest Control. Several visits were made to different towns in the Commonwealth where the parties concerned were sick or for other suitable reasons were unable to report to the State House for a hearing and these cases were taken care of in the field.

The corn borer hearings have been very effective in bringing to the attention of the corn grower's the necessity of compliance with the Corn Borer Law as the best means of checking this dangerous pest.

Seventeen cases of oleomargarine violations were tried in the several District Courts and approximately 70 cases of reported violations summoned to hearings in the State House before a board composed of the Agriculturist and the inspector reporting the violations.

Four violations of the Apple Grading Law were tried before the District Courts and 130 reported violations were heard at the State House by a committee composed of the Agriculturist and the inspector reporting said violations.

Visits were made to reclamation projects in the process of development and advice was given relative to legal procedure in connection with reclamation activities. Two visits made to contemplated reclamation

projects. Advice was also given to prospective petitioners relative to the formation of a reclamation district.

Assistance has been given to different divisions in legal questions arising in connection with the Department's work. Other Departments of the State have been contacted, especially the offices of the Attorney-General, Secretary of State, and Department of Corporations and Taxation relative to special problems arising in the supervision of Reclamation projects.

Letters from farmers requesting information relative to agricultural laws were given prompt and careful attention.

Hearings were conducted during the last few months of the fiscal year, at which time committees from various agricultural organizations met and discussed legislation relative to changes in the Apple Grading and Farm Products Grading Law.

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The Commonwealth of Massachusetts

ANNUAL REPORT

OF THE

Commissioner of Agriculture

FOR THE

Year Ending November 30, 1928



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The Commonwealth of Massachusetts

DEPARTMENT OF AGRICULTURE REPORT OF THE COMMISSIONER

To the Honorable Senate and House of Representatives:—

In compliance with the provisions of Chapter 128 of the General Laws, I am herewith making my annual report for the year ending November 30, 1928 for the Department of Agriculture.

The personnel of the Department is as follows:

ADVISORY BOARD APPOINTED BY THE GOVERNOR AND COUNCIL

JOHN BURSLEY OF BARNSTABLE (WEST), Term expires November 30, 1929.

STUART L. LITTLE OF NEWBURY, Term expires November 30, 1929.

LESLIE R. SMITH OF HADLEY, Term expires November 30, 1930.

GEORGE E. TAYLOR OF SHELBURNE, Term expires November 30, 1930.

PETER I. ADAMS OF STOCKBRIDGE (HOUSATONIC), Term expires November 30, 1931.

HERBERT N. SHEPARD OF WARREN, Term expires November 30, 1931.

ORGANIZATION OF THE DEPARTMENT

COMMISSIONER OF AGRICULTURE—DR. ARTHUR W. GILBERT OF BELMONT

DIVISION OF DAIRYING AND ANIMAL HUSBANDRY—JOSEPH C. CORT OF
READING, *Director*

DIVISION OF MARKETS—LAURENCE A. BEVAN OF WALTHAM, *Director*

DIVISION OF ORNITHOLOGY—DR. JOHN B. MAY OF COHASSET, *Director*

DIVISION OF PLANT PEST CONTROL—R. HAROLD ALLEN OF TAUNTON,
Director

DIVISION OF RECLAMATION, SOIL SURVEY AND FAIRS—LAURENCE B. BOSTON
OF HYANNIS, *Director*

AGRICULTURIST—DANIEL J. CURRAN OF MARLBOROUGH

SECRETARY TO THE COMMISSIONER—MISS HYLDA M. DEEGAN OF BOSTON

STATE RECLAMATION BOARD

GORDON HUTCHINS OF CONCORD, *Chairman*

GEN. RICHARD K. HALE OF BROOKLINE

L. B. BOSTON OF HYANNIS, *Secretary*

CHANGES IN STAFF

Work of the Department has not been interrupted although three new Directors of Divisions have been appointed during the year. Projects under way at the beginning of the year were successfully completed or continued under the direction of able assistants.

Mr. Edward Howe Forbush, the veteran in point of service in the Department resigned as Director of Ornithology in April. Mr. Forbush had served in the Department since 1893. He is widely known through his writings and lectures, and acquired fame as an investigator in economic ornithology. Dr. John B. May of Cohasset was appointed on May 15th to succeed Mr. Forbush.

Mr. Leslie R. Smith who had served in the Department for ten years,

the last nine as Director of the Division of Reclamation, Soil Survey and Fairs, resigned in October and was succeeded by Mr. L. B. Boston, of Hyannis in December.

Mr. Laurence A. Bevan of Waltham, formerly with the Boston Chamber of Commerce was appointed Director of the Division of Markets in March, succeeding Mr. Frederic V. Waugh.

RECOGNITION OF AGRICULTURAL ACHIEVEMENT

Five years ago the Department of Agriculture devised a plan for giving gold medals each year to persons in the State who have achieved outstanding leadership. Medals were awarded this year by a board of awards composed of members of the Advisory Board, the Commissioner of Agriculture and the Editor of the New England Homestead who invited Dr. Rufus W. Stimson of the Department of Education and Professor George L. Farley of the State Extension Service to advise with them.

The Board of Awards decided to honor Junior Achievement by a silver medal this year, realizing that oftentimes the recipient of such, in years to come, may be eligible for a higher award. The following awards were made at the Union Agricultural Meeting held in Worcester, January 10, 1929:

Mrs. Anna M. Johnson	Community Service	Hadley
Nathaniel I. Bowditch	Public Service	Framingham
Albert M. Chapin	Dairying	Sheffield
Roy T. Argood	Poultry	Walpole
Sally Bradley	Club Work	Lee
Lawrence Bigelow	Club Work	Harvard

A brief descriptive review of accomplishments achieved by each recipient is printed and distributed at the Union Agricultural Banquet. During the past five years the following persons, in addition to those previously mentioned, have been awarded gold medals:

John T. Carpenter	Farm Practice	Shelburne
Mrs. Edith M. Hawley	Canning	Agawam
Prof. J. K. Shaw	Research	Amherst
Miss Annie L. Burk	Club Leadership	Brockton
Osborne West	Club Work	Hadley
Rachel Knight	Club Work	Littleton
Dr. Joseph B. Lindsey	Agricultural Chemist	Amherst
Oscar Belden & Sons	Farm Practice	Northfield
Herbert A. Cook	Market Gardener	Shrewsbury
Agnes H. Kendrick	Club Work	Chatham
Costas Caragianis	Club Work	Dracut
Walter Hurlburt	Cattle Breeder	Ashley Falls
Mildred Cahoon	Club Work	Centerville
William Piper, Jr.	Club Work	Holden
Horace A. Moses	Agricultural Achievement	Mittineague
Wyman Bros.	Market Gardeners	Arlington
Bena G. Erhard	Club Agent	Hyannis
Edward Howe Forbush	Economic Ornithology	Westboro
Pauline Jefferies	Club Work	Orange
John H. Storer, Jr.	Poultry	Groton
Melville G. Grey	Farm Practice	Wenham
Howard Waterman	Club Work	Halifax
John Bursley	Agricultural Worker	W. Barnstable

Silver and bronze medals and special ribbons have been awarded by the Department directly or through Agricultural Societies, Grange and Com-

munity Fairs as follows: Ton Litter Contest, Student Judging Contest, fruit, vegetable, flowers and canned goods at Grange and Community Fairs, special apple displays and exhibits and in addition medals have been awarded for State Championship cow in the five leading dairy breeds at the Eastern States Exposition, Springfield, the New England Fair at Worcester, the Brockton Fair at Brockton. Silver and bronze medals have also been awarded for horticultural and floricultural exhibits at the following fairs: Acton, Brockton, Hillside, Middlefield, Blandford, Charlemont and Topsfield and in addition brass bangles were awarded at all fairs using the dynamometer for the best draft team exhibited.

DIVISION OF DAIRYING AND ANIMAL HUSBANDRY

OLEOMARGARINE INSPECTION WORK

The illegal sale of oleomargarine has been checked to such an extent by the inspection service of this division that violations of the oleomargarine laws have been reported from only a few of the large mill cities in the southeastern part of the State. Peddlers attempt to make fraudulent sales to a large foreign population to whom their appeal is made on the basis of price. The law endeavors to safeguard the public by prohibiting the sale of oleomargarine in imitation of butter. The following points are covered in the oleomargarine section of the statutes:

1. The sale of colored oleomargarine is not lawful.
2. Retail sellers must be registered.
3. Peddlers must be licensed.
4. Placards are required on peddlers' vehicles.
5. Placards must be posted in stores and restaurants.

Inspections were made of 2,029 stores, 231 restaurants, 31 boarding houses and 28 peddlers. Only three cases for violations of the law were prosecuted.

QUALITY MILK WORK INCREASINGLY EFFECTIVE

The demand of consumers for a better quality milk has resulted in greater efforts to persuade the farmers to improve production conditions. The work has been carried on with the coöperation of the local Milk Inspectors, Boards of Health and County Agricultural Agents. As nearly as possible, a survey of all the milk coming into the city or town was made to determine its cleanliness, temperature and keeping quality. The samples were taken from the milk of each producer as it was brought into the dealers' plant. The sediment test was used to determine the amount of visible sediment present in one pint of milk, and the reductase test to check the keeping quality. The producers showed a willingness to do their part in improving the conditions on their farms that influence the quality of milk. In one instance the number of samples of clean milk produced increased one hundred per cent as shown by a second survey compared with the first made six weeks earlier.

Summary of Quality Milk Work

<i>City or Town</i>	<i>Dealers</i>	<i>Producers</i>	<i>Temp.</i>	<i>Reductase Test</i>	<i>Sediment Test</i>	<i>Farms Visited</i>
Bedford	1	308			308	
Chicopee	9	66		66	66	
Gloucester	23	38		41	43	17
Greenfield	21	160	129	153	160	
Holyoke	7	175	134	174	161	
Lowell	46	620	87	615	584	
Marlborough	5	55	46	55	55	
Newburyport	57	153	22	181	182	41
Pittsfield	8	101	96	101	102	8
Rockport	25	27		29	27	14

Summary of Quality Milk Work—Continued

<i>City or Town</i>	<i>Dealers</i>	<i>Producers</i>	<i>Temp.</i>	<i>Reductase Test</i>	<i>Sediment Test</i>	<i>Farms Visited</i>
Springfield	30	1,375	915	1,373	1,337	
Walpole	4	86		86	86	
Westfield	10	99	89	99	99	
Worcester	19	475	443	480	473	8
Total	265	3,738	1,961	3,453	3,683	88

RESULTS OF TON LITTER CONTEST

The result of the third annual Ton Litter Contest for swine for state and local institutions was more satisfactory than in previous years. Higher total weights and higher average weights were made. The object of the contest is to raise the pigs of one litter so that they will weigh one ton or more at the age of six months. The effort necessary to reach this goal means that special feeding and care are given which result in valuable lessons in swine husbandry. The contest provides a measure of productive ability of the sow and aids in the selection of good brood sows.

The Superintendent of one institution says:

"The Ton Litter Contest was justified because it created interest among the men in charge of swine. It brought about improved sanitary conditions, lessened mortality among small pigs, and promoted faster growth. The entire herd was benefited by the improved methods, and we were able to start killing from the 1927 fall litters at six months of age. The first two killed dressed out 193 and 195 pounds respectively. This is a very material increase over the weights obtained at six months of age a number of years ago."

Many institutions have made marked improvement in the types of hogs being raised. The rapid growing, early maturing type is far more profitable than the old fashioned, slow growing, short bodied hog that took from ten to twelve months to reach the proper weight.

SUMMARY OF 1928 TON LITTER CONTEST

Winners of Highest Total Weight per Litter

<i>Institution</i>	<i>No. of Pigs</i>	<i>Weight</i>
1. Northampton State Hospital	11	3176.5
2. Grafton State Hospital	12	2753
3. Grafton State Hospital	12	2528.5
4. Medfield State Hospital	11	2105

Winners of Highest Average Weight per Pig

<i>Institution</i>	<i>No. of Pigs</i>	<i>Average Weight</i>
1. Northampton State Hospital	11	288.7
2. Worcester State Hospital	6	231.3
3. Grafton State Hospital	12	229.4
4. Grafton State Hospital	12	210.7
5. Worcester State Hospital	8	202.6

ASSISTANCE RENDERED TO SHEEP BREEDERS

During the spring of 1928 considerable time was spent in an educational campaign in trying to interest the farmers to sell their lambs direct to retailers or consumers, and as a result help was given in marketing slightly over two thousand lambs at prices which were quite satisfactory to the farmer. In many instances he realized from eight to twelve cents a pound liveweight more than in former years.

Twenty-five meetings were addressed on various phases of the sheep business. Assistance in the sale or purchase of five hundred sheep has been given during the year.

The wool growers have pooled nearly 17,000 pounds this year. The high price of wool during the spring months induced some to sell their wool direct. The sale of blankets has been active, showing a growing demand for Massachusetts Virgin Wool Blankets.

DIVISION OF MARKETS

GRADES ADOPTED FOR FARM PRODUCTS

To meet the increasing competition of shipped in products and to facilitate the movement of local farm produce, the Department of Agriculture has established grades and standards. This includes grades on eggs, asparagus and on bunched vegetables such as beets, carrots, turnips, celery and radishes. United States grades were used as a basis and additional information secured regarding local market demands to be sure that the State grades would be applicable.

Meetings were held with local farmers and dealers and tentative grades discussed with them. Later there were public hearings in Boston, Worcester and Springfield, where minor suggestions were made for the improvement of the grades.

What the market demands as to quality, size of package, color or product and actual grading practice was one of the fundamental considerations involved in making up the grades. To answer some of these questions the demands for asparagus were analyzed on the Boston, Worcester and Springfield markets. It was found that the Boston buyers paid the most for a long green stalk and they preferred large even-packed tight bunches. The Worcester and Springfield buyers varied somewhat in demands, but the grades were based definitely on a certain minimum number of stalks to the bunch, with a certain length of green color. This definite information on asparagus was sent to farmers all over the State and had a marked effect on the adoption of the grades on this crop. Two associations of asparagus growers, one on Cape Cod and the other in Middlesex County, used this grade in 1928. Inspection by this Department kept the pack up to rigid standards. \$50,000 worth of asparagus was graded and labeled under these new regulations.

Many times the question is asked whether grading pays, and at the request of the above associations, the Department assembled figures on returns from the asparagus sections of the State. These prices included men who graded to three grades—to two grades, and men who packed field run. Results showed that the men packing to three grades averaged \$5.71 per three dozen bunches, to two grades, \$5.07, and Field Run \$3.98. The latter figure is the average quotation taken from the Farmers' Produce Market Report, whereas the others are prices taken from return slips of producers. Since only three returns were made by men who packed Field Run, and that the average for three could not be considered representative, the market report was used. The merits of grading are evident in these results.

The increase in popularity of McIntosh apples led the Department to see if they could find out the value of color, size, kind of package and influence of disease and insect injury on the prices received by growers. The results of this project have been printed in bulletin form and distributed to fruit growers within the State. A similar study has been made on easy blanching celery and another is now being analyzed on Pascal or late celery.

Promotion work to promote further use of the grades has been carried on by means of newspapers, marketing agencies, extension services, exhibits at fairs, and market reports, both in the printed and radio broadcast report.

Up to date very little interest has been shown in grades for straw-

berries, bunched beets, carrots, turnips, radishes and celery, in spite of the fact that needs for grades are evidenced in the increased arrivals of out of State produce. On the other hand, asparagus growers, as well as egg producers, have been actively interested.

EGG GRADING BECOMING A COMMON PRACTICE

The use of the grades is spreading slowly, but recent increased comments by producers indicate more rapid progress in the use of the labels from now on. Approximately two hundred and fifteen thousand labels have been sold to poultrymen and forty-two thousand to asparagus growers.

During the past year efforts have been made to acquaint the producer and consumer with the New England label. Exhibits and grading demonstrations were held in various parts of the State. Approximately two hundred and fifty to three hundred thousand persons attended the Eastern States Exposition where grades for vegetables and eggs were demonstrated. Other displays were shown at Middlefield Fair, Brockton and Worcester Fairs, the Reading Poultry Show and Faneuil Hall Market. Approximately twenty talks on grading and standardization were given at meetings of farmers associations. Articles were written for magazines and newspapers, and men sending requests to county agents stating that they are interested are being visited.

About seventy-five inspections have been made. With one exception and a few minor infringements where educational assistance was required, the grade requirements have been rigidly upheld. Producers in some instances state that they have seen no benefit derived after using the label for several months, but they do feel that they are working for a future market and that it will take considerable time before the consumer is thoroughly acquainted with the label and the high quality it represents. They also feel that "bootlegging" of eggs will be somewhat offset, since recourse can be obtained should labeled products be inferior to grade requirements. Most "bootlegged" eggs are inferior to the Massachusetts Special egg standard.

Another effort toward establishing regular market price quotations for Massachusetts Special eggs, and Massachusetts Fancy and A grade asparagus is being made. During the asparagus season these Fancy and A grades have been quoted. Poultry men are very much interested in reliable quotations, such as Massachusetts Special eggs. These prices are being included on the Boston Retail Market Report, the contents of which are being broadcast.

Consumer advertising will be continued but this part of the program cannot go faster than the rate at which producers use the label.

DISSEMINATING MARKET INFORMATION

Reports on the wholesale produce market have been issued daily except Saturday on our three large markets, Boston, Worcester and Springfield as in former years.

The special apple report is comprehensive and accurate and increases in its usefulness and scope.

For several years the Department has collected retail prices on food in the vicinity of Boston and although they are valuable to consumers as a buying guide, they also serve as a fundamental source of retail price data. More and more as attention is being paid to analyzing the causes of price changes the data collected by the Massachusetts Department of Agriculture has been found invaluable. Many times during the past year the Agricultural College, the Experiment Station and many individuals have used this information.

An important step in disseminating information about prices and supplies was taken in the fall when the United States Department of Agriculture and several of the New England States joined to form a Market

News Service by radio. This radio broadcast goes out on Station WBZ and WBZA three times during the day. The first program starts at 10:30 with news flashes on the livestock market; the second report is heard at 12:30 giving the Boston Produce Market, the egg and butter prices and receipts and any special items. The evening broadcast at 6:15 gives special information on certain nights and also combines speakers on agricultural subjects rather than giving price reports alone. The Maine Potato market and the Boston Hay and Grain market are regular features. Special talks have already been given that acquaint the consumer as well as the farmer with conditions affecting the food supply and prices.

THE PLACE OF ROADSIDE STANDS IN MARKETING

The Division of Markets carried on a survey of conditions related to roadside marketing of fruit and vegetables in the fall of 1928. Nearly two hundred stands were visited by a representative of the department who gained specific information at each stand. A summary of the results of the survey shows that the business is increasing and satisfactory to a large proportion of stand owners. Competition from individuals who buy produce in city markets and truck it to the country roadside representing it as fresh was reported as a problem mainly in Middlesex County. A majority of the stands sold their own produce or at least seventy-five per cent of what they sold was grown on their own places.

In addition to obtaining information from stands the Department sent out a questionnaire to consumers. Twenty-seven hundred were returned and their summary gives a clear picture of just what the consumer thinks about farmers' roadside stands.

Massachusetts consumers report that they want nearby products, want them fresh and are willing to pay a premium for produce under those conditions. Just how roadside stand operators can make improvements to satisfy customers is brought out in the details of this report and many individuals have asked for the information. Also the Massachusetts Roadside Stand Association is using this report as a basis for considering a reorganization plan.

DIVISION OF ORNITHOLOGY

INFORMATION REGARDING THE BIRDS OF MASSACHUSETTS

On April 24, 1928, Mr. Edward Howe Forbush, the first Director of the Division of Ornithology, reached the compulsory retirement age of seventy years, after having served the Commonwealth approximately thirty-five years. On May 15 Dr. John B. May of Cohasset was appointed as his successor.

Until his retirement, Mr. Forbush continued the valuable work in economic and popular ornithology which he had begun so many years before, but with increasing concentration upon the preparation of the three-volume work on "The Birds of Massachusetts and other New England States", two volumes of which have already been published by the Commonwealth. The work on this book, and the correspondence and routine matters incident to the office, had of late taken up the entire time of Mr. Forbush and three assistants.

The first volume of "The Birds of Massachusetts" was published in 1925, in an edition of 5,000 copies, which was completely sold in a very few months. During 1928 a second printing of 1,000 copies was prepared under the direction of the Division of Ornithology, and this issue was exhausted in exactly four weeks. A bill will be introduced in the coming Legislature asking for still another printing of this volume.

The second volume appeared in December, 1927, and the edition of 7,500 copies is already nearly out of print. The third volume, which will complete the set, will be published during 1929. The manuscript was very largely prepared during 1928, the paintings for the color plates were completed, and the color plates themselves are nearly ready for printing.

The work of completing the manuscript, correcting proof, etc., will take the full time of three persons throughout much of 1929.

The principal activities of the Division of Ornithology can be briefly summarized as "the collection and dissemination of information regarding the birds of Massachusetts." In the beginning this work was very largely concerned with the relations of birds to the farmer, gardener and forester, but as time has passed the scope of the work has broadened and the value of the Division to the people of Massachusetts and in fact to all of New England, has been greatly increased.

Much of the information which the Division has collected is the result of personal investigations of members of the staff of the Division. Of especial importance are the studies of the food habits and the economic status of the birds. Many field trips have been made by the Director or his assistants, often in direct response to requests for help in solving problems which arise in connection with birds. Another valuable source of information is found in our large group of correspondents who send to us the results of their observations on birds and their habits. A large part of the time of the Director is now occupied in carrying on this correspondence and in answering questions.

THE DISSEMINATION OF BIRD INFORMATION

As one means of disseminating the information gathered from the above sources, the Director prepares each month a circular letter, called "Items of Interest", the issue of November, 1928, being Number Ninety in the series. This mimeographed letter, of from four to eight pages in length, contains a summary of our reports on bird movements during the preceding month, a section devoted to "Notes from Observers", brief "Bird Banding Notes", (the Division serves as headquarters for the Northeastern Bird Banding Association), "Conservation Notes", etc., and is sent to all our regular correspondents, nearly seven hundred in all, and to a number of newspapers and periodicals. It serves largely as a "clearing house" for bird news throughout New England and even beyond our borders. The Director recently received a clipping from Queensland, Australia, which quoted an article in our "Items of Interest."

The new Director, Dr. May, is taking up again some of the departments of the work of the Division which of necessity had been somewhat curtailed of late by Mr. Forbush, under the pressure of preparing "The Birds of Massachusetts." Many lectures are planned by Dr. May and his assistant, Mrs. Harrington, before members of the Grange, Four-H Garden Clubs, agricultural and horticultural societies, fruit-growers associations, fish and game clubs, conservation organizations, scout groups, schools, and others. Several radio talks have been given, as well as lectures under various auspices, on the work of the Division and on the important relations between Birds and Man.

In past years the Division has prepared and printed several pamphlets dealing with the activities of birds, or with their conservation. These have proved very popular and in some cases have been repeatedly re-printed. The Director believes that the purposes for which the Division of Ornithology was founded, would be better carried on if certain of these pamphlets, now out of print, were re-printed, and if other pamphlets, relating to phases of economic and popular ornithology, were prepared.

DIVISION OF PLANT PEST CONTROL

NURSERY INSPECTION

It seems as if Massachusetts has in the past twenty-five years, had more than her share of insect pests and plant diseases. In view of this fact our nurserymen should be congratulated on their spirit and determination in carrying on their business with such odds facing them. On the

other hand, just as the Codling Moth and San José scale compelled the orchardist to spray, resulting in the production of clean and better fruit, perhaps these pests have been the instigation for our nurserymen to be more thorough and observing, and thus produce stock which is known throughout the United States as "best by test." Our inspection of the nurseries this past year found them, considered as a unit, to be in excellent condition. Certificates were issued to 241 permitting sales. Very little scale was found, certainly a negligible amount compared with that of fifteen years ago. Spraying, parasites, together with careful and intelligent supervision has practically eliminated San José scale and Oyster-shell scale is seldom found except in small amounts in our nurseries.

CONTROLLING THE WHITE PINE BLISTER RUST

The White Pine Blister Rust has been located in nearly 300 cities and towns in this State, but fortunately this disease can be controlled. The Division of Plant Pest Control is endeavoring to maintain Ribes-free zones around each nursery growing any considerable number of five-leafed pines. In establishing a Ribes-free zone, it is the practice to remove all Ribes (currants and gooseberries) both cultivated and wild, for a distance of 1500 feet from the nursery, and all black currants for a distance of one mile. This work is quite costly and sometimes very difficult, especially when swamps are encountered. This year 4,338 Ribes were removed on property surrounding the nurseries, and while it is hoped that this work will be completed in 1929, it quite likely will be necessary to check the areas from time to time. Since 1917 all New England nurseries have been restricted in their shipments to five-leafed pines, but in 1928 the Federal Government made provision whereby five-leafed pines grown from seed in nurseries properly protected by a Ribes-free zone, can be shipped to points outside of New England.

GYPSY MOTH INFESTATIONS REDUCED

The Gypsy Moth condition in the nurseries differs very little from those found in 1927. While some of the infestations throughout the State are serious, they caused with one exception very little concern in our nurseries. It has been our practice to carefully inspect all property surrounding the nurseries and to compel property owners to keep such properties clean and free from injurious pests. By this method we have greatly reduced the danger of infestations from outside the nursery.

MISCELLANEOUS PLANT PESTS

The Satin Moth Spreading Rapidly

The Satin Moth, which was brought into the country from Europe, has spread rapidly during the last five years. Fortunately, it has confined its feeding, so far as known, to willows and poplars. It is easily controlled by spraying with arsenate of lead, and where this practice is followed, very little damage has been noticed, but where it is allowed to feed, unchecked, stripping is often detected. The infested area now includes all of eastern Massachusetts and extends west as far as Northampton.

The Oriental Hag Moth of Minor Importance

Intensive scouting was carried on, especially north of Boston to determine the exact area infested by the Oriental Hag Moth. While some increase was noted, the fact that this insect was established here over twenty years ago and to date has caused little or no damage leads to the belief that it is of minor importance.

The Larch Canker Disease

A disease new to this country was found in Hamilton, Massachusetts during the summer of 1927. This disease, commonly called "Larch Can-

ker" is of European origin, and according to scientific reports has in some instances caused considerable damage. Comparatively little is known about the disease, either in this country or in Europe. It appears that it might have been in the country for several years and attacks not only European and American Larch, but Douglas Fir. The Douglas Fir is of great economic importance in this country, especially throughout the west, and for that reason the infection in Massachusetts is looked upon with considerable concern.

Since the original infection was discovered five additional infections have been located in Massachusetts and one in Rhode Island. So far as is known these are the only infections in this country, although it is felt that more thorough scouting should be carried on in some of the eastern states where importations from Europe have been quite extensive. The infections in Massachusetts were all on private estates and in coöperation with the owners the Division has been able to entirely eradicate three of these while the actual work on the remaining three is now in progress.

The Japanese Beetle Menace

The Japanese Beetle has been present in the United States for several years, but was first discovered in Massachusetts this past summer. It was found in Springfield at Stearns and Court Squares; two municipal areas less than one-fourth of a mile apart and both located near the center of the city. These two squares comprise only about 5 acres and are surrounded by buildings with very little chance for feeding or breeding of the beetles nearby. Because of these apparently isolated infestations it is hoped that effective control measures may be practiced.

The total life cycle of the Japanese Beetle is one year, five-sixths of this time being spent in the soil as an egg, larva, or pupa. The winter is passed as a larva in the soil at a depth of two to four inches. They become active in late March and early April, and feed until sometime in May or June. The larva at this time does considerable damage to the roots of living plants. About two weeks is spent in the pupa, after which the adult appears. The average date of emergence is about June 20. The beetles are present through a period of four months, but are most abundant during July and August. This long period of occurrence is due to the fact that the beetles appear over a considerable period, rather than that each one lives that length of time. The beetles feed on the leaves and fruit of orchard trees as well as on ornamental trees, shrubs and plants; also on corn, cereal, forage and vegetable crops. The insect in other states where it is established, often completely defoliates the trees in addition to causing severe damage by feeding on the early ripening varieties of fruit. In addition to the destruction by the adult beetles, the larvae have damaged lawns, pasture and golf courses through the feeding which they do on the roots of various grasses.

The adult Japanese Beetle is a brightly colored insect, varying in length from 5.16 to 7.16 of an inch. The color is bright, metallic green, except for the greater part of the wing covers, which are coppery brown. They are active on clear, warm days. More than 5,000 of these beetles were collected in Springfield this past summer, and it seems fair to presume that they must have been present at least two or three years.

The European Corn Borer

The European Corn Borer is one of the major pests in Massachusetts. The two-brooded corn borer has probably been present in eastern Massachusetts for at least fifteen years. It is believed that the Legislation passed in 1923 which required that all corn stubble in the infested area be plowed by December 1, has been very effective in checking the spread of the insect and in reducing its numbers. It is gratifying to note that only one new town has been added to this infested area in Massachusetts since 1923. It has been the practice during the past two years to sum-

mons into the office, violators of this law. It is very noticeable that few farmers are among the violators and that most of the negligence is with the city dwellers who maintain a backyard garden. Last year more than 200 violators were summonsed into the office, and an informal conference held with each one. This method seems to secure the coöperation and good will of the offenders. The single-brooded corn borer was found in western Massachusetts along the New York State border in 1927. This year has noted a marked increase in this area until now the single-brooded borer is found up to and in a few instances east of the Connecticut River. Considerable publicity and educational work has been done in this area, and it is hoped that the density of the infestation can be kept to a low point.

The Division has coöperated with the Federal Government in maintaining a corps of inspectors in the Boston Produce and Flower Markets where the corn borer quarantine has been operative. This quarantine has without doubt been instrumental in checking the spread of this insect.

APIARY INSPECTION WORK

Excessive rains from early spring until late in the fall materially impeded progress in the inspection season. Weather conditions have also been a hindrance to satisfactory and prompt treatment of diseased colonies by the beekeepers. However, approximately the normal amount of inspection work has been accomplished.

Conditions previously reported in Berkshire County have continued to improve. In the Connecticut Valley, the relative freedom from disease has been maintained. This free area is now gradually extending eastward into Worcester County, so that the western half of Massachusetts is now more free from disease than it has been heretofore. In the eastern part of the State, American foul-brood is persistent. The situation appears to be complicated by density of the population and the shifting of beekeepers from town to town.

There have been no extensive outbreaks of either bee disease in Massachusetts during the past year. More and more emphasis is being placed on the destruction of stored combs, which are known to be a frequent carrier of the disease. This process eliminates reinfection, which may have been latent for some years.

EXTENDING INFORMATION IN BEE CULTURE

The "Worcester County Farmer" is now running monthly beekeeping notes which are prepared by the Inspector of Apiaries. Bee conventions and meetings held in various parts of the State have had reasonably satisfactory attendance. An exhibition of honey in connection with the Union Agricultural Meeting at Worcester, was noteworthy. This and the beekeepers' meeting were promoted by the Inspector of Apiaries.

Bees for the fruit grower is a problem of more importance today than it has been before. More requests were received this spring for sources of bees to be used in fruit orchards than ever before. It appears that orchardists are requiring bees to supplement what few colonies they may possess. There is the growing problem, therefore, as to where sufficient bees will be available for the required two or three weeks.

The personnel of the inspection force of 1928 was as follows:

Mr. Fred Challet, Northampton (Connecticut Valley)

Mr. F. S. Devereaux, Green Harbor (Plymouth County and vicinity)

Mr. Benjamin A. Hildreth, Sherborn (Worcester County and north of Boston)

Mr. Ivan Rawson, Pittsfield (Berkshire County)

Mr. H. L. Walton, Worcester (Worcester and Middlesex Counties)

(The localities covered by the inspectors are in parenthesis.)

The Inspector of Apiaries was Burton N. Gates of Worcester, who devoted part time. The deputies also served part time on temporary appointments.

WHITE PINE BLISTER RUST

During 1928, the White Pine Blister Rust was found on white pine in 42 additional townships in the Commonwealth. This disease has now been located on white pine in a total of 278 of the 355 cities and towns in Massachusetts. Spore development on diseased pines was very pronounced during the spring, and resulting infection on the alternate host plants (currant and gooseberry bushes) was very general throughout the summer. These conditions doubtless resulted from the unusually moist conditions during the entire season.

The coöperative effort to prevent the further spread of the disease was continued during the year with results closely approximating those of the previous year. Under the guidance of inspectors of this Division employed under the direction of representatives of the United States Department of Agriculture, property owners removed 521,360 wild and 31,815 cultivated currant and gooseberry bushes from their lands. This work involved examinations on 239,033 acres of land throughout the State. The 2,036 coöperating owners expended, either in their own time or in the hire of laborers, the equivalent of \$9,888.19.

In connection with the educational campaign to inform owners regarding the seriousness of the disease and the need for control work, a new type of roadside exhibit was employed this year. This exhibit consists of an open frame in which are mounted actual specimens of white pine showing the damaging effects of the disease. These exhibits with appropriate signs were erected at strategic points on the most important highways in the State and were the means of informing a large number of people who might not be reached by the other types of educational work.

THE ELIMINATION OF CURRANT AND GOOSEBERRY BUSHES

The usual effort was made to secure the voluntary removal of cultivated currant and gooseberry bushes wherever they have been considered a menace to nearby white pines. It is evident that this attempt was at least partially successful, for the records indicate that altho cultivated bushes were removed from 2,265 properties in the State, only 103 owners (less than 5%) submitted claims for reimbursement. These claims requested compensation for 2,871 bushes and based upon the scale of values as established by this Department, the plants had a replacement value of \$1,201.30. It should also be noted that approximately one-half of these claims; namely, forty-one, originated as a result of control work performed in areas adjacent to some of the commercial nurseries in the State, rather than in connection with the regular control work performed in the so-called white pine townships.

As a part of the regulatory activities of the Division, an order issued under date of October 23, designated 200 townships as blister rust control areas. Under the provision of the Federal blister rust quarantine (No. 63) no currant or gooseberry bushes can be shipped to the towns on this restricted list. Permission is granted, however, for the shipment of such stock to any other township in the State under a special permit. Under this provision of the quarantine, 220 permits were granted for shipments into Massachusetts. These permits allowed the entry of 2,782 currant bushes and 1,563 gooseberry bushes. Under the same quarantine, permission was also granted for the entry of 17 shipments of white pine, comprising a total of 43,255 seedling or transplant white pine stock.

The same personnel as employed last year; namely, Messrs. E. M. Brockway, William Clave, G. S. Doore, W. J. Endersbee, E. J. McNerney, Wm. T. Roop, and R. E. Wheeler administered the State blister rust control policy, under the direction of C. C. Perry as State Leader.

The Director of the Division of Plant Pest Control wishes to express his appreciation to Mr. C. C. Perry as Federal Agent in Charge of the White Pine Blister Rust Work. His faithful work deserves the highest commendation.

DIVISION OF RECLAMATION, SOIL SURVEY AND FAIRS

AGRICULTURAL PROMOTION THROUGH FAIRS AND EXHIBITS

A Fair, as such, is fundamentally an educational institution and to this end the Commonwealth, through the Department of Agriculture, gives assistance both educationally and financially.

During the past year the Department of Agriculture has coöperated with more than 200 individual Fair Associations, Farmers' Clubs, Granges, Poultry Shows and other organizations. It has met with committees rendering assistance as to premium lists, fair management, arrangement of exhibits and other details. It has held public and group meetings at which talks, lantern slide lectures and demonstrations have been given. It has sent out circular letters, bulletins, suggested premium lists and issued monthly a Fair News Bulletin keeping the various Fair organizations in the Commonwealth informed on timely topics. It has, furthermore, coöperated with local associations and allied organizations in putting on educational exhibits, the distribution of medals, ribbons and in general the encouragement of better exhibits by awards and financial assistance.

TRAINING AGRICULTURAL LEADERS AT CAMP GILBERT

Thirteen counties of Massachusetts were represented at Camp Gilbert the past year by 125 county and state champions and 40 local leaders in the 4-H Club work. This camp is becoming each year more and more educational and inspirational, and the results of its influence are far-reaching. It is really a Leader Training Camp and as such is extending its helpfulness in the broadest possible way throughout the Commonwealth.

AGRICULTURE ORGANIZATIONS UNITE IN ONE MEETING

In coöperation with twenty-eight Agricultural Organizations the Department of Agriculture held the Eleventh Annual Union Meeting in Worcester on January 9, 10 and 11, 1929. This meeting was the largest attended of any previously held. The fruit show and trade exhibits completely filled all available space in the State Armory and sectional group meetings were inspirational and enthusiastic and particularly well planned.

WORK OF THE DEPARTMENT AT THE EASTERN STATES EXPOSITION

The exhibit in the Massachusetts Building on the Eastern States Exposition grounds, West Springfield, exemplified the work of the Department as a service proposition to the residents of the Commonwealth. The idea was carried out by means of a home with roadside stand, dairy barn and milk room as the center piece and exhibits around the building showing the different points of contact between the Department, the producers, the distributors and the consumers. There were special features in regard to the marketing of farm products, the wool pool, pine blister rust control, soil survey, ornithology and fair work with a special exhibit showing Grade A milk production as a practical proposition. The market reporting service and publication distribution was also featured. The whole exhibit covered in a rather comprehensive way the major activities of the Department.

INSPECTION OF FAIRS SUPPLY INFORMATION

In order to determine just what each fair accomplishes in the way of agricultural encouragement, representatives from the Department visit all fairs receiving State Prize Money and secure definite information as to the real activities in addition to the number of cattle, horses, swine, sheep, poultry and miscellaneous farm products on exhibition. In addition to securing a record of all exhibits and notation as to their quality, the Department representative looks over the Midway carefully, investi-

gates the eating places, sanitary conditions, general fair management and other matters pertaining to the welfare of the public. The data secured in this manner is tabulated and records kept on file in the Department. The Department is not alone concerned that Massachusetts Fairs be popular, progressive and prosperous, but that they be energetic and enthusiastic in making their fairs educational in the broadest sense of the word.

QUALITY OF HORSES IMPROVING

Members of the Department superintended the Commercial Horse Show at the Eastern States Exposition at Springfield. During the three years that this Commercial Horse Show has been held there has been a marked improvement in the quality of delivery horses in use in the City of Springfield, and also in the care and appearance of the delivery outfits. Assistance was given in conducting the Dynamometer Contest at the Springfield, Worcester, Barre and Brockton Fairs.

THE SPREAD OF STATE PRIZE MONEY

During the year 1928, 108 fairs and associations received allotments of agricultural prize money to the amount of \$19,910.00. Checks made payable to the individual winning the prize were sent out by the Department of Agriculture. This means that all prize money is paid directly to winners and not through the treasurer of any fair association.

PRIZE MONEY AWARDS— 1928

County Fairs

Acton Agricultural Association, \$600.50; Barnstable County Agricultural Society, \$600; Blackstone Valley Agricultural Society, \$600; Bristol County Young Farmers' Fair, \$200; Deerfield Valley Agricultural Society, \$600; Essex Agricultural Society, \$1,000; Franklin County Agricultural Society, \$1,200; Gardner Agricultural Association, \$230.50; Gorton Farmers' and Mechanics' Club, \$550; Hampshire, Franklin and Hampden Agricultural Society, \$1,200; Heath Agricultural Society, \$150; Highland Agricultural Society, \$700; Hillside Agricultural Society, \$700; Housatonic Agricultural Society, \$1,200; Littleville Community Fair, \$125; Lunenburg Fair, \$150; Marshfield Agricultural and Horticultural Society, \$650; Martha's Vineyard Agricultural Society, \$400; Nantucket Agricultural Society, \$282; Oxford Agricultural Society, \$448; Plymouth County Agricultural Society, \$550; Southboro Farmers' Fair, \$225; Sturbridge Agricultural Association, Inc., \$495; Union Agricultural and Horticultural Society, \$700; Weymouth Agricultural Society, \$400.25; Worcester Agricultural Society, \$1,500; Worcester County West Agricultural Society, \$800; Worcester Northwest Agricultural Society, \$849; total \$17,105.25.

Granges

Abington, \$15; Acushnet, \$35; Anawan, \$15; Ashburnham, \$20; Assonet, \$15; Bedford, \$40; Becket, \$20; Braintree, \$30; Brimfield, \$23.50; Chelmsford, \$15; Dunstable, \$20; Dracut, \$15; Eastham, \$2; East Bridgewater, \$15; Fairhaven, \$12; Grafton, \$15; Granby, \$20; Hilltop, \$15; Holliston, \$20; Hopkinton, \$20; Lexington, \$10; Mansfield, \$35; Merrimac, \$17; Needham, \$16; New Salem, \$15; Norton, \$30; Northboro, \$14; Oak Hill, \$15; Otis, \$18.75; Palmer, \$9; Plainville, \$15; Ponkapoag, \$10; Princeton, \$16.50; Randolph, \$15; Reading, \$20; Rochester, \$15; Southboro, \$20; Stockbridge, \$28; Stoughton, \$15; Swansea, \$15.50; Thrifty, \$20; Tyngsboro, \$6.75; Warren, \$40; Wendell, \$25; Westford, \$15; Westboro, \$12; West Newbury, \$5.50; West Stockbridge, \$30; Williamsburg, \$26; total, \$912.50.

Community Fairs, Clubs, etc.

Ashby Community Fair, \$15; Chester Junior Fair, \$29; East Longmeadow Community Fair Association, \$25; Franklin County Fruit Show,

\$45; Granville Apple Show, \$91; Hampden County Improvement League, \$100; Hancock Community Fair, \$135.25; Hingham Agricultural and Horticultural Society, \$14.50; Orange Boys' and Girls' Club, \$50; Sterling Farmers' Club, \$75; Ton Litter Contest, \$15; Truro Agricultural Society, \$15; Union Meeting Fruit Show, \$271; United Rabbit and Cavy Club, \$49.50; United Shoe Machinery Athletic Association, \$42; West Granville Community Fair, \$36.50; Westfield Young People's Agricultural Society, \$25; total, \$1,033.75.

Poultry Shows

Athol Poultry and Pet Stock Association, \$150; Boston Poultry Show, Inc., \$429; Fitchburg Poultry Fanciers' Association, \$180.50; Harvard Poultry Association, \$44.75; Metropolitan Reading Poultry Association, \$96; Norfolk County Poultry Association, \$185; Northampton Poultry Association, \$150; Hub Poultry Association, \$150; Annual Market and Egg Show, M. A. C., \$14; total \$1,399.25.

Summary State Prize Money

Agricultural and Horticultural Societies	\$17,105.25	
Poultry Associations	1,399.25	
Community Fairs	1,033.75	
Granges	912.50	
Stock Judging Team	468.76	
Badges, medals, cups	1,125.36	
Photography	236.84	
Lantern Slides	45.00	
Equipment		
Kodascope Model B	\$191.25	
Repairs to projector	20.55	
	211.80	
Boys' and Girls' Club Work	2,413.77	
Special Exhibitions	3,887.54	
	6,303.08	
Total		\$28,839.82
Balance		1,381.23
		\$30,221.05
Appropriation	\$30,000.00	
1927 Balance	221.05	
	\$30,221.05	

RECLAMATION WORK

The reclamation work of this division has been conducted as in previous years through the State Reclamation Board of which the director of the division is secretary.

The functions of the Board were concisely stated in the 1926 and 1927 reports and for handy reference are here repeated:

Drainage Districts Under Old Law

Of the drainage districts started under Chapter 257 of the General Laws before the revision in 1923 only two remain and the improvements undertaken are finished and paid for only maintenance work being carried on. These districts are:

Cherry Rum Brook District, Greenfield, finished in 1925.

Weweantic River District, Carver and Wareham, finished in 1926.

The Salisbury District became again active in 1927. By special act in 1927 it was changed to reclamation district and will be reported under that heading.

Reclamation Districts Under New Law

The reclamation districts that have completed organization are:

1. *Assabet River, Westboro and Northboro.* The first preliminary part of this project was finished in 1926 and land that was utilized provided fine crops in 1927. Weather conditions in 1928 prevented the 1928 crops being as good as was expected. Continuation of construction was delayed by legal complications until fall when the channel clearing was extended to the upper portion of the project, other parts of the channel recleaned, and a large obstruction at the lower part of the project was dynamited. The results are very satisfactory. The water level at the outlet of the Westboro sewerage filter beds was lowered and the action of the beds improved. Further work is planned for 1929.

2. *Bear Meadow, Whitman.* Inactive this year. The matter of disposing of crude sewerage on the west side of the project is still in abeyance.

3. *Cutter Swamp, Arlington.* Inactive during this year. The proposal of the Board to include the construction of a border highway around the swamp hasn't yet been acted upon.

4. *Green Harbor, Marshfield.* Construction finished in 1925. Maintenance only since then. The project is paid for.

5. *Milford, Milford.* Completed in 1926. Project is paid for. Some extension is contemplated in the future.

6. *Salisbury, Salisbury.* The legal difficulty confronting this project is being gradually straightened out. Through a special act last spring the Legislature authorized the change from a drainage to a reclamation district and provided authority for constructing a dam across Blackwater River just inside the state line, also authority to construct such works as may be necessary in New Hampshire. A bill has been entered in the New Hampshire Legislature to authorize the district to construct its dam in New Hampshire which is desirable. The district is not, however, in position to construct in Massachusetts if its application is rejected in New Hampshire. It is expected that the project will go to construction next spring.

7. *Wapping, Deerfield.* Inactive except for development of section through which the new state highway passes is under consideration.

There are several projects where petitions have been presented to the Board and district commissioners have been appointed but which never reached the point of forming districts. The provisions of the law and facilities of the Board are available at any time and the interested land owners desire to reopen these matters.

REGULATORY WORK OF AGRICULTURAL INTERESTS

Groups of farmers and farm leaders met with Department representatives in December, 1927, to consider new laws or amendments to existing laws affecting our agricultural interests. Legislation designed to better the farming conditions in the Commonwealth is consistently encouraged and every effort made to obtain favorable action from the General Court on such legislation.

An amendment to the Oleomargarine law was specifically recommended by the Commissioner in order that the provisions of our law relating to the size of letters on Oleomargarine containers might correspond to the provisions of Federal law.

The Massachusetts Growers Association and others interested in the continuing progress of the apple industry, petitioned the Legislature for a change in the Apple Grading Law whereby the word "Standard" is eliminated and providing further that the minimum size of all apples in a container need not be so stated on the package when the numerical count of apples in the container is stated. This amendment was fully endorsed and sponsored by the Department and was carefully watched in its journey through the two branches of the legislature and to the Governor's

desk where it was signed and now constitutes a phase of legal procedure in the packing and marking of packages of apples.

The general policy of the Department has been to vigorously enforce all laws and the inspectors in the field have been particularly attentive to their duties with this goal in mind. This rigid policy of enforcement has not involved the Department in a record number of prosecutions. Hearings before representatives authorized by the Commissioner have been held in many of the principal cities and towns in the Commonwealth. All first violators of the Apple Grading Law or the Corn Borer Law have been called to these hearings. One hundred and forty-five first offenders with respect to packing or marking and branding packages of apples, were called before boards composed of the chief inspector, the inspector reporting the violation, and the Director of the Division charged with the enforcement of the law and in all cases the violation was explained in detail, necessary instruction and advice given as to remedying the error or omission, and the facilities of the Department were freely offered to the offending party to the end that future shipments of apples might be packed and branded in full compliance with the Massachusetts Apple Grading Law.

Two hundred and eighty-nine persons failed to plough under the corn stubble or pull it up and destroy it before December 1, 1927, and an individual hearing was given to each offending party. These hearings were arranged so as to inconvenience as little as possible the persons reported as violating the law, but who had in fact small garden plots.

The provisions of the Corn Borer Law were explained to each person by the Director of the Division of Plant Pest Control, and instruction on the life cycle of the corn borer and its devastating effect on corn plantings was an interesting and important part of the hearings.

APPLE GRADING LAW

The apple grading law has been in force for considerable time and the majority of orchardists are familiar with its requirements, believing in it thoroughly.

As in the past much of the work is educational although this does not mean any let down in the real work of inspecting the apples under the law. There are, however, many new people that yearly come into the apple packing game and these are the ones who need the most attention.

Meetings of our inspectors and apple growers were held in Franklin and Hampden Counties to explain and demonstrate the provisions of the apple grading law.

On account of the unfavorable climatic conditions this year—much of the Baldwin crop that in a normal year could be shipped as "A" grade fruit had to be put in a lower grade, especially on account of lack of color or too much russetting. However, progress is being made as the commission men in our principal markets state that our grading and inspection service has been of real aid in the merchandising of our Massachusetts fruit.

SEED LAW IN OPERATION

Work was started for the first time in collecting seed samples according to the law recently enacted. Inspectors of the Department collected 476 samples from 32 dealers in 15 cities and towns of the Commonwealth. These samples were forwarded to the Seed Laboratory at the Massachusetts Agricultural Experiment Station, Amherst and tested. As the law is a recent one, many dealers naturally were not informed as to the substance of the law and the inspectors in all cases explained its meaning and left copies for the dealers' information. The coming year a re-check will be made on those inspected and new dealers visited.

BROADENING THE ADAPTATION OF THE RECLAMATION LAW

During this year it has been several times proposed that the law be added to provide for the combination of towns and department to utilize the law for drainage purposes and for handling mosquito eradication. No practical legal machinery exists for these purposes and source of improvement of streams and wet lands is already the function of the Reclamation Board, it seems to add the necessary machinery to the reclamation law and avoid the conflict that would otherwise arise if the authority for the drainage and such work was divided. Legislation is, therefore, asked for to provide for these needs. Other minor adjustments in the existing law are also proposed to expedite its operation.

EDUCATIONAL HEARINGS VALUABLE

Pursuant to the provisions of the Farm Products Grading Law, official hearings were held in Boston, Worcester and Springfield during the first part of 1928 in order to obtain information on the grade requirements of certain farm products. These hearings were largely attended and in consequence of the valuable information obtained official grades on eggs, asparagus, beets, carrots and strawberries were promulgated by the Commissioner.

The number of prosecutions during the year was small. It would appear that the policy of educational hearings was taking care of first violations and only those persons unwilling to accept the instruction, advice and suggestion of the Department were second offenders against our agricultural laws. Only three cases of violations of the Apple Grading Law were prosecuted in the Municipal Court of Boston and the case of one second offender of the Corn Borer Law was brought to the attention of the Court.

SOIL SURVEY NEARLY COMPLETED

The soil survey of Massachusetts will be completed by the end of the year. Franklin County is the only area yet to be surveyed and a re-check in parts of Plymouth County. During the past year the County of Hampshire has been surveyed, samples of soil taken and classified and data secured for mapping the same.

The Bureau of Soils of the United States Department of Agriculture has cooperated in making the surveys, preparing the data, maps and descriptive bulletins, and the information contained therein. This information not only classifies the soils of the county, but gives a comprehensive description of the area, its climatic conditions, physiographic features, elevations, drainage, population, transportation facilities, agricultural and manufacturing industries and like matters of information.

Reports on Worcester, Norfolk, Bristol and Barnstable Counties are now available for distribution from the Massachusetts Department of Agriculture, and Middlesex, Essex, Berkshire and Nantucket should be available early in 1929. The report of Plymouth County may be procured from the Division of Publications, Washington, D. C. The soil survey work as conducted in Massachusetts has been a good illustration of the effectiveness of State and Federal cooperation along agricultural lines.

THE AGRICULTURAL OUTLOOK FOR 1929

With improved tendencies toward marketing facilities, standardizing of products, grading, labelling and concerted effort toward quality the agricultural outlook for Massachusetts farms as a whole should be most encouraging for the year 1929. The demand for fresh fruits and vegetables and high grade eggs is increasing rapidly. The per capita consumption of fluid milk continues to increase. The purchasing power of consumers should continue at a high level. The fact that the Massachusetts farmer is near his market and that natural conditions are well suited

to the production of high quality products and the public are more and more appreciating a quality article, would seem to be of increasing importance to Massachusetts producers. The farmer in 1929 who expects to make a satisfactory labor income must pay greater attention to his marketing problems, be alert to the necessity of grading his products, separate as never before the "wheat from the chaff" and meet ever increasing competition on a basis of quality rather than price.

ADVISORY BOARD

The Advisory Board has been of very material assistance to the Commissioner with advice and council on agricultural matters during the past year. They have considered carefully the various plans put forth, particularly in the light of their application to the average farmer and the farming conditions of the State. Representing, as they do all sections of the Commonwealth, they are in a position to render material assistance.

AGENCIES CO-OPERATING WITH THE DEPARTMENT

The Department has enjoyed most cordial relationships with all agricultural organizations in the Commonwealth. Duplication of effort and overlapping of activities have been avoided, and a spirit of whole hearted coöperation between the Department and other organizations has been manifested throughout the year. Special mention throughout this report has been made of Federal, State, County and private coöperation in the work of the various divisions of the Department. Without this splendid spirit of helpfulness work of the Department would be most severely handicapped.

Respectfully submitted,

A. W. GILBERT, *Commissioner.*

ASS.
DCS.
DLL.

The Commonwealth of Massachusetts

ANNUAL REPORT

OF THE

Commissioner of Agriculture

FOR THE

Year Ending November 30, 1929



PUBLICATION OF THIS DOCUMENT APPROVED BY THE COMMISSION ON ADMINISTRATION AND FINANCE

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The Commonwealth of Massachusetts

DEPARTMENT OF AGRICULTURE REPORT OF THE COMMISSIONER

To the Honorable Senate and House of Representatives:—

In compliance with the provisions of Chapter 128 of the General Laws, I am herewith making my annual report for the year ending November 30, 1929, for the Department of Agriculture.

Respectfully submitted,

A. W. GILBERT, *Commissioner*.

PERSONNEL OF THE DEPARTMENT

COMMISSIONER OF AGRICULTURE—DR. ARTHUR W. GILBERT, BELMONT

ADVISORY BOARD APPOINTED BY THE GOVERNOR AND COUNCIL

LESLIE R. SMITH OF HADLEY, Term expires November 30, 1930.

GEORGE E. TAYLOR OF SHELburnE, Term expires November 30, 1930.

PETER I. ADAMS OF GLENDALE, Term expires November 30, 1931.

HERBERT N. SHEPARD OF WARREN, Term expires November 30, 1931.

JOHN BURSLEY OF BARNSTABLE, (WEST) Term expires November 30, 1932.

STUART L. LITTLE OF NEWBURY, Term expires November 30, 1932.

DIVISIONS AND ORGANIZATION

DAIRYING AND ANIMAL HUSBANDRY—*Director*, JOSEPH C. CORT, READING.

MARKETS—*Director*, LAURENCE A. BEVAN, NEWTONVILLE.

ORNITHOLOGY—*Director*, DR. JOHN B. MAY, COHASSET.

PLANT PEST CONTROL—*Director*, R. HAROLD ALLEN, TAUNTON; *Assistant Director*, QUINCY S. LOWRY, CANTON.

RECLAMATION, SOIL SURVEY AND FAIRS—*Director*, L. B. BOSTON, NEWTONVILLE; *Assistant Director*, A. W. LOMBARD, ARLINGTON.

AGRICULTURIST—DANIEL J. CURRAN, MARLBOROUGH.

SECRETARY TO THE COMMISSIONER—MISS HYLDA M. DEEGAN, BOSTON.

STATE RECLAMATION BOARD

Chairman, GORDON HUTCHINS, CONCORD

Secretary, L. B. BOSTON, NEWTONVILLE

GEN. RICHARD K. HALE, BROOKLINE

TEN YEARS OF PROGRESS

Ending as we are, the last year of the present decade and preparing to enter the year 1930, it appears to be an appropriate time to look backward and review the accomplishments in agriculture during the past ten years.

Our agriculture in 1920 was emerging from a period of unnatural activity. The greatest war in the history of nations had but recently ended, leaving many great countries in Europe impoverished agriculturally and industrially. Even at this time, Europe was looking toward the United States for food, money and merchandise. The mills and factories were doing a large volume of business and the manufacturers were making the most of their opportunity. Massachusetts was busy. High wages were paid to factory hands and mechanics.

Farm labor was scarce during the few years immediately following the war. The high wages in the city attracted many of our farm boys and girls. Unsatisfactory and untrained help was available at exorbitant wages,

if at all. High prices prevailed for fertilizers, machinery and feed, and in fact everything used upon the farm. Sometimes crops were left upon the fields because of insufficient help at harvesting time, and in any event the margin of profit was grossly inadequate.

Agriculture was first to feel the harmful after effects of a prosperity era that enriched every part of the great producing United States while the vast consuming populations of Europe were adjusting their industries and agriculture.

And agriculture began—a steady, progressive march toward readjustment and reorganization at this time.

Tractors have replaced many horses on our Massachusetts farms. Improved machinery and implements have come into greater use. The size of the average farm has probably decreased, but more productive crops have been planted. Livestock of greater productive value is found upon our dairy farms, our sheep farms and poultry farms. Farm management has become more efficient; a better balance has been established among agricultural enterprises and worthwhile progress has been made in adjusting production to market requirements.

This greater production has been obtained with relatively fewer farm workers. Our agriculture has shown a high degree of resourcefulness in the lean years following the World War.

Increased Consumption of Quality Milk

Milk is and will continue to be a fundamental food product. The per capita consumption has been steadily increasing in Massachusetts. Schools, stores, factories and homes fully recognize the value and increased efficiency resulting from a greater use of milk and milk products. Production of fluid milk in 1928 was close to \$75,000,000 pounds and the value greater than 25 million dollars. A very noticeable factor in our milk production has been the ever-increasing production per cow during the past ten years. The necessity of getting greater production per animal has been our slogan from the beginning, and in only rare cases in 1930 will a low-producing animal be found in our dairy herds.

At no time during the period from 1920 to 1930 has the co-operation between producer, dealers and consumers been more in evidence than at this time. The farmers have been urged to produce only quality milk and substantial progress has been made. The dealers recognize the additional value and importance of quality milk, and the consumer is willing to pay a higher price for the quality product.

Dairy farmers throughout New England have a strong producers association and the wholesale price of milk has been maintained at an increasingly high level through the efforts of the New England Milk Producers' Association.

There should be no question in the minds of farmers as to the market for quality milk in Massachusetts, and we have many dairy farms where a greater number of efficient milk producing cows would be a source of real profit.

Progress in Marketing Graded Fruit

Our fruit growers have made progress during the past decade. It is true that many of the old and heavy producing apple trees have disappeared, but thousands of young trees are coming into bearing each year.

The McIntosh is an apple that is creating a large demand in distant markets. It is a fruit of special flavor and is probably unsurpassed as a table apple. It has good keeping qualities and is selling at prices that bring good profits to the fruit grower.

The Department of Agriculture has stressed *quality* in the production of apples. Massachusetts fruit growers have forged ahead on the basis of selling high grade fruit.

Ten years of education, admonition and prosecution have very clearly advanced the status of fruit growing in Massachusetts, and yet an entirely satisfactory condition does not exist even at this time.

The Department is prepared to carry on an effective inspection service and eliminate as far as practicable the fraudulent packing and marking of packages of apples. The successful growers have been in full sympathy with our regulatory work in connection with the Apple Packing Law and have given wholehearted support in our policy of enforcing the provisions of the law.

We have dealt rather harshly with violators who have been intentionally fraudulent in packing and selling apples and a decided improvement has been evidenced during the past few years.

Better Cranberry Prices

Cranberry growers are rejoicing at their accomplishments since the war. More than three-fifths of the entire production of the United States is produced in Massachusetts, and approximately one-half of the nation's supply of cranberries is grown in Plymouth County.

Price per barrel has steadily increased and the outlook for continuing prosperity is exceedingly bright. New marketing features give assurance that the cranberry industry will maintain high price levels. An increasingly important part of the cranberry crop is being canned each year. This extends the season over which the crop can be marketed, and facilitates the disposal of large crops without the deterring factor of low prices.

Educational Aspect of the Fair

The agricultural fair has increased its usefulness to all classes of community life during the past ten years. The youth of the State is more in evidence,—4H Club members, Boy Scouts, Girl Scouts and other organized groups of boys and girls find in the fair a splendid opportunity to display those qualities of leadership that are to play an important part in our community problems of tomorrow. The agriculture of Massachusetts is dependent upon the further development of that progressive leadership that these youthful leaders so well exemplify.

1929 found a higher grade of livestock and farm products on display than in 1928, and that same finding has been in evidence for the 10 preceding years. The educational aspect of the agricultural fair has not given way to a more commercialized plan of satisfying the pleasure-seeking craze of a million or more visitors.

There is, in fact, strong evidence to support the contention that the industrial displays, the agricultural displays and exhibits, the judging contests, the horse-pulling contests, the flower shows, all have a distinct educational value, and the resulting effect on Massachusetts agriculture is becoming more pronounced each year. The attendance at thirty major fairs in Massachusetts in 1929 including the Brockton Fair and Eastern States Exposition, was greater than a million people.

Our fairs are attracting more people each year, and it is safe to assume that this fact bespeaks of a growing interest in Massachusetts agriculture.

Summer Tourists on Our Farms

Many of our farmers have been helped financially because of a publication on "Summer Facilities" issued each year by the Department. In practically every community there are several farm homesteads that combine the richest beauties of nature with the more utilitarian purpose of farming for a living. In the cities there are thousands of busy work-a-day people who are longing for an opportunity during the summer months to find a restful place in the midst of nature's quiet charm and fascinating scenery where the strain of long months of arduous city employment could be relieved by the complete relaxation of mind and body in the environment of a quaint New England farm.

The Department of Agriculture tries to assist both of these groups by acquainting each with the mutual benefits that could be derived from a closer relationship. Our selected farm homes receive an added income and our tired city visitor returns after a few weeks in the country with a recondi-

tioned body and with a more sympathetic understanding of the farmers' problems.

Market Quotations

Our Market Reports and radio talks now have a permanent place in the dissemination of prices of agricultural commodities. Radio talks on prices of farm products and seasonal agricultural activities are broadcasted during the noon hour and supper hour to thousands of interested farmers who "listen in" daily for this important information. These special features have developed rather recently, and the possibilities for future development seem unlimited.

Bird Books

A series of books on New England birds have gained national prominence and reputation during the past four years. The late Edward Howe Forbush, the editor, spent a lifetime in studying the birds, and his great natural ability is clearly shown in the masterful description of bird life in his three volumes of "Birds of Massachusetts and Other New England States." Every home in our State could use to advantage a set of these outstanding publications.

Progress in Poultry Raising

Poultry industry has made commendable progress since 1920 in the quality and quantity of poultry and poultry products. Starting with an industry that indicated a value of about 7,000,000 dollars, it has more than doubled in value during a period of 10 years. Possibilities for expansion are excellent. In every county, we have farms adapted to poultry raising and upon which other branches of farming will not prosper. We do not begin to supply the demand for Massachusetts selected eggs and each year we notice a growing demand for fresh killed native poultry.

The turkey industry has grown from a few thousand in 1920 to more than 50,000 in 1929. Improved methods of production and better marketing relations have greatly influenced the rapid growth of the industry. Control of the dreaded Black Head disease was responsible more than any other factor for the phenomenal growth of turkey farming. Massachusetts Quality Labels are used extensively on our native turkey and the Department of Agriculture is inspecting and policing the grades. We look forward to a steady, prosperous growth for the turkey farmers.

More Orderly Marketing of Farm Products

Methods of marketing have changed within a decade to meet the changing methods of production and the ever-present competition from other agricultural sections of the country. Our farmers have come to a realization that business methods must be firmly introduced into our agricultural work. Individually and collectively the producers of farm products have awakened to the need of sound business principles in the many different phases of producing and marketing their crops. More and more of our farmers are preparing themselves for their life work by taking practical courses in county agricultural schools or agricultural colleges, and the business and management side of agriculture is not neglected in these institutions.

Several co-operative organizations have developed during the past few years wherein groups of farmers have banded together under our co-operative law to secure the greater benefits of marketing graded farm products in volume under a State Quality Label. The cucumber growers of Mansfield, the asparagus growers of Eastham and Middlesex County, the apple men of Nashoba Fruit Belt and the strawberry producers of Falmouth have organized to do business co-operately in a big way under a trained manager, as has also the New England Cranberry Sales Company of Middleboro.

The newly organized Federal Farm Board is equipped to assist our co-operatives. This Board cannot deal directly with the individual. Under the terms of the agricultural marketing act, it may lend only to qualified co-operative associations. To qualify under the Capper-Volstead Act, the co-operative must be composed of persons engaged in the production of

agricultural products, as farmers, planters, ranchmen, dairymen, nut or fruit growers, acting together in associations, corporate or otherwise, with or without capital stock, in collectively processing, preparing for market, handling and marketing in interstate and foreign commerce, such products of persons so engaged. Such associations may have marketing agencies in common; such associations and their members may make the necessary contracts and agreements effecting such purposes.

Under the provisions of the Act, however, such associations shall be operated for the mutual benefit of their members and conform to one or both of the following requirements:

- “(1) that no member of the association is allowed more than one vote because of the amount of stock or membership capital he may own therein; or
- “(2) that the association does not pay dividends on stock or membership capital in excess of eight per cent per annum.”

It is quite possible that some of our Massachusetts co-operatives may qualify for loans under the Federal Farm Board and receive the organized aid that this Federal Agency is authorized to give.

Our progress during these ten years has been substantial. It is manifested in advancing prices for some important crops, in better farm homes, in more educational advantages to farm children and in the further improvement in the relationship between the prices of farm products and the prices for other goods.

It is further manifested in the unity of purpose and interest that is shown so conclusively by all agricultural organizations.

The Department of Agriculture, the Massachusetts Experiment Station, the Agricultural College, the Grange, the Farm Bureau, the Extension Service and all other agricultural agencies have co-operated in solving the problems of our producers so that Massachusetts agriculture today has recovered from the post-war depression and is showing positive signs of an orderly and progressive development.

Listing Farms For Sale

The publication of a bulletin containing a list of farms for sale in Massachusetts has been, for a number of years, one of the outstanding pieces of service carried on by the Department. The bulletin has been in considerable demand, its listings diversified, and its usefulness appreciated. During the past year, approximately 15 per cent of all listings were sold. The record of listings by counties follows: Barnstable, 4; Berkshire, 34; Bristol, 18; Dukes, 2; Essex, 21; Franklin, 33; Hampden, 25; Hampshire, 23; Middlesex, 39; Norfolk, 13; Plymouth, 19; Worcester, 70; making a total of 301.

AGRICULTURAL LEGISLATION

It has been the practice, during the fall and early winter months, for those agencies interested in Massachusetts agriculture to get together and consider legislation that will tend to benefit progressive agriculture. During the quarter of the year 1929, certain proposed laws or amendments to existing laws were given consideration by groups composed of farmers, extension workers, agricultural organization leaders and others primarily interested in the further development of our agriculture. The recommendations for new legislation, however, were few.

RIGHT OF APPEAL IN CONTROL OF THE WHITE PINE BLISTER RUST

Among the matters upon which new legislation was thought advisable, was in regard to the powers of the Division of Plant Pest Control. It was thought important to amend existing legislation so that an appeal in writing might be taken within 10 days to the Commissioner of Agriculture in the case of objection to the proposed action of the Director of the Division of Plant Pest Control in destroying Ribes or five-leaved pines, and that the appeal should operate as a stay of proceedings until it had been heard and

-decided by the Commissioner. This proposed legislation was not opposed in its passage through the various channels of legislation and was signed by the Governor on March 9, 1929.

CHANGE IN RECLAMATION LAW

An important change in the reclamation law was introduced during this session of the legislature, and the purpose of the proposed law was five-fold, namely:

1. To enable towns to appropriate money, and individuals to contribute funds which may be pooled for the special purpose of mosquito control.
2. To allow a town to legally spend money outside the limits of its boundaries.
3. To render expert guidance and assistance in directing mosquito control measures to a municipality, a combination of municipalities, a group of individuals or combination of both.
4. To provide for the appointment of local commissioners by the State to execute control measures with expediency and effectiveness.
5. To accomplish the control work through the co-operative efforts of certain towns that have been found to be in need of control measures and are naturally dependent upon each other for successful completion of project.

The various hearings on this bill were well attended and their proponents presented a very well-defined need for a law of this kind. This legislation was signed by the Governor on May 6, 1929, and because of the urgent need of authority by the State Reclamation Board, this law was considered an emergency measure and became effective upon its being signed by the Governor.

REQUIREMENTS OF FINANCIAL STATEMENTS FROM MILK DEALERS

Another law of considerable importance was signed by the Governor on March 29, 1929, requiring licensed milk dealers to submit financial reports annually with the Commissioner of Agriculture. These reports are public records and the information contained therein is available to the milk producers of Massachusetts. There have been different occasions in the past when small farmers in certain of our milk producing sections have been defrauded by unscrupulous dealers. It is the intent of this bill to make available for the producer of milk, information relative to the financial status of the milk dealer so that he may become acquainted with the ability of the milk dealer to pay for the milk purchased.

NEW HEARING ROOM

A new hearing room has been assigned to the Department of Agriculture for individual hearings relative to reported violations which can now be held with a maximum of convenience and privacy. Group hearings on matters pertaining to legislation or important problems connected with the work of the different divisions can be well conducted in the additional space allotted to the Department. The convenient and practical arrangement of this kind had long been a desirable need and the facilities of the new quarters are very much in demand.

RECIPIENTS OF AWARDS FOR AGRICULTURAL ACHIEVEMENT

The following revised list of recipients of medals and certificates is here-with submitted according to the year in which they were presented.

This honor is given by the Department for "Meritorious Service and Outstanding Accomplishments in Agriculture and Rural Life."

Each year it has been the policy to honor in this manner five or six persons within the commonwealth; the Board of Awards consisting of the Advisory

Board and the Commissioner of Agriculture, and the presentation made at the Union Agricultural Meeting banquet held in Worcester early in January.

1924

John T. Carpenter	Farm Practice	Shelburue
Mrs. Edith M. Hawley	Canning	Agawam
Prof. J. K. Shaw	Research	Amherst
Miss Annie L. Burke	Club Leadership	Brockton
Osborne West	Club Work	Hadley
Rachel Knight	Club Work	Littleton

1925

Mt. Hope Farm	Agricultural Research	Williamstown
Mrs. Gardner Files	Community Leader	Wilbraham
Marshall Farm	Fruit Growing	Fitchburg
W. Otis Day	Poultry Breeding	Westford
Ella Buckler	Club Work	Pittsfield
E. Russell Holmes	Club Work	Worcester

1926

Dr. Joseph B. Lindsey	Agricultural Chemist	Amherst
Oscar Belden & Sons	Farm Practice	Northfield
Herbert A. Cook	Market Gardener	Shrewsbury
Agnes H. Kendrick	Club Work	Chatham
Costas Caragianis	Club Work	Dracut

1927

Walter Hurlburt	Cattle Breeder	Ashley Falls
Mildred Cahoon	Club Work	Centerville
William Piper, Jr.	Club Work	Holden
Horace A. Moses	Agricultural Achievement	Mittineague
Wyman Bros.	Market Gardeners	Arlington
Bena G. Erhard	Club Agent	Hyannis

1928

Edward Howe Forbush	Economic Ornithology	Westborough
Pauline Jeffries	Club Work	Orange
John H. Storer, Jr.	Poultry	Groton
Melville G. Grey	Farm Practice	Wenham
Howard Waterman	Club Work	Halifax
John Bursley	Agricultural Worker	W. Barnstable

1929

Mrs. Anna M. Johnson	Community Service	Hadley
Nathaniel I. Bowditch	Public Service	Framingham
Albert M. Chapin	Dairying	Sheffield
Roy T. Argood	Poultry	Walpole
Sally Bradley	Club Work	Lee
Lawrence Bigelow	Club Work	Harvard
Elmer Berry	Poultry	Stow

1930*

Mrs. Charlotte B. Ware	Public Service	Norfolk
Joshua L. Brooks	Public Service	Springfield
Walter Kemp	Farm Practice	Colrain
Elbert Jenks	Club Work	Agawam
Viola Messer	Club Work	Methuen
F. Maynard Tucker	Farm Practice	Gloucester

* To be awarded at the Union Agricultural Banquet in Worcester on January 9, 1930

REPORT OF THE DIVISION OF DAIRYING AND ANIMAL HUSBANDRY

BETTER MILK FROM MASSACHUSETTS FARMS

The program to improve the cleanliness and keeping quality of the milk produced on Massachusetts farms was greatly extended during the past year. Added stimulus was given to the work through the excellent co-operation of local milk inspectors, milk dealers, county agricultural agents and producers' organizations. Assistance was given to many local boards of health that were planning on putting into effect new ordinances relating to the production and sale of milk. Surveys were made of the milk supply coming into these communities to determine its freedom from sediment and its relative keeping quality as well as the temperature at which it reached the dealers' plant. In this manner accurate information was gathered as to the actual condition of the milk. From these facts, it was easier to judge as to what kind of regulations should be adopted and how much time should be allowed the farmer to get ready to meet such regulations. The increase in the adoption of reasonable requirements by local boards of health covering the production of milk on Massachusetts farms is one of the encouraging factors working toward improvement of the milk supply.

A special study of the milk coming to certain Metropolitan Cities and Towns from Middlesex County was undertaken. An effort was made to test all the milk coming into dealers' plants that was secured from this territory. In general, the quality of the milk was below the average and a series of eight meetings in different parts of the County were held at which the producers were given an opportunity to discuss the problem of producing milk of a higher standard. The result of these meetings was a demand for more uniformity of requirements and less duplication and unsatisfactory inspection of dairy farms. Several meetings of milk inspectors, milk dealers and representative farmers were then held to work out a minimum set of regulations suitable for any City or Town to adopt. These were later to be approved by the Massachusetts Milk Inspectors' Association. The success of this program in Middlesex County depends upon the willingness of the producers to co-operate with the milk inspectors. The demands of the market for a higher quality milk require that a large amount of work of this type be done in the future.

SUMMARY OF MILK SURVEYS

<i>City or Town</i>	<i>Dealers</i>	<i>Producers</i>	<i>Reductase Test</i>	<i>Sediment Test</i>
Amherst	9	32	32	32
*Ashburnham	1	1	2	2
Ashland	9	12	12	12
Attleboro	16	58	-	58
*Bedford	1	261	303	303
Boston	2	73	43	73
*Brockton	5	155	110	265
*Fall River	37	325	-	638
Framingham	16	156	156	156
*Gardner	13	88	159	159
Gloucester	22	44	44	44
Greenfield	6	83	83	83
Hudson	4	67	67	67
*Lawrence	21	172	222	222
Lee	4	13	-	18
Lexington	3	19	19	19
Littleton	-	11	-	11
*Marlborough	9	66	117	117
Maynard	6	45	-	45
Melrose	8	8	8	8
Middleborough	10	10	12	-
*Northampton	26	129	249	249

SUMMARY OF MILK SURVEYS—*Continued*

<i>City or Town</i>	<i>Dealers</i>	<i>Producers</i>	<i>Reductase Test</i>	<i>Sediment Test</i>
Norwood	6	74	74	74
*Palmer	26	47	78	78
*Plymouth	26	72	34	64
Reading	12	17	17	17
Stoneham	7	7	7	7
*Taunton	41	87	74	164
Wakefield	8	31	31	31
Waltham	11	85	85	85
Watertown	4	23	23	23
*Winchendon	14	16	27	27
*Woburn	15	24	49	49
Total	398	2,311	2,137	3,200

* Two surveys made.

MILK DEALERS FINANCIAL REPORTS

The 1929 Legislature passed a law requiring all licensed milk dealers purchasing milk from producers within the Commonwealth to file with the commissioner of agriculture, a complete financial report during the month of September. The list of licensed milk dealers was secured from milk inspectors. A total of 608 reports have been filed as a result of this law. These are open to inspection by the public. Because this is a new law, only a few farmers have availed themselves of this opportunity of checking up on the financial standing of their milk dealer.

INSPECTION

Less time was spent on checking up the illegal sale of oleomargarine than in previous years. Eleven cases of violations were discovered on eight of which fines were secured and three were appealed. A total of 1,980 stores and restaurants were inspected. There were 387 stores inspected under the seed inspection law and 416 seed samples collected which were sent to the seed laboratory at Amherst for examination.

1929 TON LITTER CONTEST

During the past four years a Ton Litter Contest has been conducted annually in an effort to improve the methods of raising hogs in the State. Very satisfactory improvement in the efficiency of pork production has been noted on State Institution farms that have consistently competed in these contests. The object is to raise a ton or more of pork from one litter of pigs, starting at birth and finishing at six months of age. Better breeding animals have been purchased and more care used in selecting brood sows, with the result that the pigs made more rapid gains and reached killing weight at an earlier date.

The Northampton State Hospital won the 1929 Contest with a total weight of 3,085 pounds for eleven pigs, or an average of 280 pounds per pig. Grafton State Hospital was second and third with litters weighing 2,820½ pounds and 2,746 pounds of twelve pigs each, or an average of 235 pounds and 229 pounds respectively.

The following are the weights of the winning litters for the four years:

1926	1927	1928	1929
2,385 lbs.	2,939 lbs.	3,176½ lbs.	3,085 lbs.

INCREASED ACTIVITY IN SHEEP

In the spring of 1929 we were able to reach a much larger number of farmers who had early lambs for sale, and keep them posted on the market price. The price averaged higher as the supply of nearby early lambs was far below

the demand, and many thousand early spring lambs were shipped from outside of New England to supply our market here in Massachusetts.

We have been able to encourage a much larger percentage of our local growers to sell direct to the retailers than in former years. Many calls have been made for assistance in buying and selling small flocks. A growing interest has been shown by some people who have bought small farms for a part time proposition and want to keep a small flock of sheep and sell the lambs for the Easter market and have their wool made into a high grade of Virgin Wool blanket for their local trade.

There has been several calls to address meetings on sheep, lambs and wool market problems, and much interest has been shown during the year in the sale of early lambs, and the Virgin Wool blanket proposition. The wool growers have pooled nearly 20,000 pounds of wool in 1929 and the number of Virgin Wool blankets on hand at the close of the year is below the average, which means there is a growing demand for these high grade blankets.

EASTERN STATES WOOL SHOW

Co-operating with the Eastern States Exposition and the New England Sheep and Wool Growers' Association, the division conducted the first wool show ever held in New England. Space for the exhibit was arranged for in the Industrial Building, Eastern States Exposition grounds at West Springfield. Forty fleeces were exhibited from five New England States. Curtis L. Martin of Plainfield, Vermont, won the championship on a Shropshire fleece and was awarded a special trophy which was donated by the Pacific Co-operative Wool Growers. George A. Simpson of East Milton, Massachusetts, won first place for a Massachusetts fleece, also with a Shropshire.

The object of the show is to stimulate interest in better wool production and to teach the wool growers the United States Wool Standards. George T. Willingmyre of the United States Department of Agriculture judged all of the fleeces exhibited.

MASSACHUSETTS CERTIFIED POULTRY FLOCKS

At the request of the Massachusetts Association of Certified Poultry Breeders, a new grade for hatching eggs, baby chicks and breeding flocks was established in January, 1929, known as "Massachusetts Certified." The requirements of this grade are similar to those that have been in use by the Massachusetts Association of Certified Poultry Breeders. The Department, for a number of years, has been co-operating with this Organization in the inspection of flocks for certification.

Massachusetts Certified Poultry Breeding Stock must meet the following requirements:

1. Free from Pullorum Disease (B. W. D.)
(See Rules and Regulations for Pullorum Disease Free Flocks.)
2. Inspected and leg-banded for
 - a. Productive capacity.
 - b. Health and vigor.
 - c. Reasonable conformity to standard requirements.

Massachusetts Certified Hatching Eggs must meet the following requirements:

1. Produced only from Massachusetts Certified Breeding Stock.
2. Reasonably uniform in size, shape, and color.
3. Average weight 24 ounces or over per dozen, with minimum individual weight of 23 ounces.

Massachusetts Certified Baby Chicks must meet the following requirements:

1. Produced only from Massachusetts Certified Hatching eggs.
2. Normal and vigorous.

Mr. Oliver S. Flint was authorized as the Department Inspector and forty-two flocks were inspected and approved as Massachusetts Certified. As soon as a flock becomes certified, it is eligible to use the New England Quality Products Label. Thirty breeders applied for the use of the label and five thousand were mailed out.

During the summer there was considerable demand for the establishment of a second State grade for poultry flocks to be called "Massachusetts Accredited," indicating 100 per cent freedom from Pullorum Disease. After considerable discussion of the matter, a hearing was held at the State House on November 20, 1929, where both sides stated their arguments for and against. The weight of the opponents to the establishment of this new grade seemed strongest, so that the proposition was dropped.

REPORT OF THE DIVISION OF MARKETS

The work of the Division of Markets has broadened materially in the past year, due to the growth of the grading and labeling program.

Several years ago it was suggested that farmers of this State could use to advantage a method not only of grading their products, but of identifying them to the consumer. Legislation to make this program official was passed in 1927. Use of grades and labels by producers has increased. Products packed under official grades have been well inspected. The movement has become so well established in certain commodities that the consumer has commenced to ask for such labeled products.

The furnishing of information on the marketing of farm products that is of value to the producer, distributor, and housewife continues to be an important part of the work of the Division of Markets. The Division is very frequently called on for information that is not only current, but which covers a period of years. Such facts being available for a number of years furnish a basis for action which is far ahead of guesswork or opinion.

Market reporting no longer waits upon the mails for its spread of information, as an ever-increasing number of people depend on the radio as their source of market news.

Sound procedure in merchandising starts with a study of market demand and this Division has collected definite demand facts on several commodities which may be used by Massachusetts farmers in marketing their produce.

Details of the work of the Division follow.

STANDARDIZATION AND GRADES

Producers are using grades on eggs, baby chicks, asparagus, turkeys and apples. Interest is also being shown in grades for potatoes, strawberries, and hothouse cucumbers, and these grades, as well as others, will be promulgated when there is sufficient demand.

Poultry producers believe in the program of grading and labeling, since the number of men using the New England Quality Products Label increased in 1929 from 56 to 130, with a distribution of 200,000 labels.

To the co-operation of the County Extension Services much of the credit is due on the promotional work and on aiding in inspections. Most of the inspection on eggs carrying the label was done at the farms and in many cases it was possible to straighten out difficulties and give valuable suggestions on grading at the same time.

The outstanding event in the use of the label was with turkeys. For a long time turkeys from other states have been represented as fresh and nearby, and there has been no official method of marking local turkeys. However, with the rapid increase in local production, growers in Massachusetts desired some way of designating their turkeys as native.

A hearing was called October 22 to consider turkey grades, and after consideration a grade called "Massachusetts Native Fancy Grade" was established. The results were that by Thanksgiving time, a month later, over 50 turkey producers had applied for the grade and used 16,000 tags to identify their birds. It was estimated that one quarter of a million pounds of turkey were so marked and that consumer response was favorable.

For the second year two asparagus associations and one apple association have used the New England label in addition to private brands. Inspection of this crop has been done mainly in the Faneuil Hall Market before it left the commission merchant.

Adequate inspection on the use of the New England Label is imperative if the movement is to be successful. At present, this inspection is being carried on by the regular force of the Division with little cost to producer, but if the movement continues to grow, the increasing cost of inspection must be borne more directly by the producer.

WHOLESALE MARKET REPORTS

The wholesale market news service has continued to demonstrate its value as a very important link in the chain of distribution of Massachusetts farm products. During the past year daily services have been operative as heretofore covering the Boston, Worcester and Springfield markets. Reports issued by representatives stationed at these markets cover prices on all locally grown fruits and vegetables; prices on competitive products from outside the State; and general comment on supply and demand.

SPECIAL APPLE REPORT

The Special Apple Market Report has been issued during the important part of the apple marketing season—from August through April. While designed as a weekly service, this has been supplemented by twice-weekly reports during periods of heavy market activity. This service covers Boston, Worcester, and Springfield, and several markets outside the State which are important outlets for Massachusetts apples. A special effort is being made to supplement the wholesale city market reports with information on farm prices and demand at shipping points during the packing season.

RETAIL REPORTS

The Boston Retail Price Report has been issued weekly throughout the year. The increasing volume of eggs graded as Massachusetts Specials has created a demand for quotations on this grade. Such quotations, obtained from producers in towns near Boston, are now a regular part of the retail report. The Worcester and Springfield retail reports have been issued in accordance with the regular schedule of previous years.

Besides the general use of the retail report by schools, boarding houses and housewives, other specific uses have been reported. Retail stores in outlying towns use the Boston report to see how their prices compare with those in Boston and newspapers quote directly from this report in making up their food columns. The WBZ radio station states that the Boston retail report is one of their most important features, being of service to their entire audience, which consists of both producers and consumers.

RADIO MARKET REPORTS

This Division has increased its activity in the field of radio broadcasting of market news during the past year. In addition to the regular broadcasting of the Boston and Worcester daily wholesale reports and Boston Retail Report, the Special Apple Market Report has been put on the air and the Springfield weekly market letter has been broadcast regularly. The Division has also maintained very satisfactory co-operative relations with the New England Radio Market News Service conducted by the United States Department of Agriculture, with the co-operation and financial assistance of several New England states, including Massachusetts. Through the medium of this service radio facilities are available for special material of educational value to both producer and consumer.

APPLE INSPECTION

The apple inspection service has been conducted throughout most of the apple season. The modest allowance of funds available for this service has

made it necessary to confine the inspection work to leading city markets and one important carlot shipping center. Representatives of fruit growers' organizations have called attention to the need of a more extensive inspection service. If this is undertaken, an increase in the appropriation for this work will be necessary.

MARKET TOURS

Evidence of the increasing interest in marketing methods is shown by the frequency with which the Division is asked to conduct parties on tours of the wholesale market districts. Many of these groups are composed of men engaged in some specialized branch of farming, who wish to see at first hand how their products look when in the market and to learn how they can better adapt their processes of preparation of their product for market to best fit the demands of the trade. Other frequent visitors to the market district under the guidance of representatives of the Division are students from agricultural colleges, high schools, etc., which augurs well for a pleasant mutual relationship between our future farmers and the men who will sell their products.

STATISTICAL INFORMATION

"Receipts and Sources of Boston Food Supply," an annual publication of the Division, was issued as usual, covering statistical and other news material of the calendar year 1928. This publication is used freely by producers and dealers of the various commodities included, and by agricultural and economics teachers, and research workers.

In addition to the regular services enumerated above, much of the work of this Division is of a more general nature. This requires the maintenance of rather extensive files of market news items and other information of basic value in answering requests for information regarding marketing of farm products. Such requests include questions pertaining to special requirements of various markets as to methods of packaging and packing, preference for certain types or varieties, possibilities of competition and other related matters.

The Division also is continuing its co-operative activities carried on in conjunction with official and private organizations. Examples of this sort of work during the past year have been co-operation in the preparation of the New England Agricultural Outlook Report and the Massachusetts Apple Outlook Report.

REPORT OF THE DIVISION OF ORNITHOLOGY

The work of the Division may be divided into the collection and dissemination of information about birds, by means of correspondence, personal investigations, interviews, lectures, and publications. The Division is also influential in acquiring and maintaining sanctuaries for birds, and in shaping legislation for the protection of our valuable and interesting species.

THIRD VOLUME OF "BIRDS OF MASSACHUSETTS" COMPLETED

During the past year a very large proportion of the time of the staff was devoted to completing the third volume of the "Birds of Massachusetts." The untimely death of Edward Howe Forbush, author of this valuable book, less than a year after his official retirement as Director of the Division, placed unexpected burdens on the present staff in completing his unfinished manuscript, preparing it for publication and seeing it through the publisher's hands. The original date of publication had been set for December first. By concentrating our energies on the book, the final proof was all corrected and delivered to the printer in November, and the third volume was actually delivered to the office of the Secretary of the Commonwealth on December 18, 1929, only two and a half weeks later than the date set by Mr. Forbush, two years earlier.

While the third volume of the "Birds of Massachusetts" was being prepared for publication, a second printing of Volume II and a third printing of Volume I were also prepared, so that the three volumes have now been

published in a uniform edition of ten thousand copies each. An important part of the third volume was the index of all three volumes, which was prepared after most of the third volume was in proof.

THE DISSEMINATION OF BIRD INFORMATION

We have continued the issuance each month of the "Items of Interest" which is sent to a mailing list of between six and seven hundred bird observers in return for the reports of their observations which they send to this office. Each issue contains four to six pages of condensed information on the distribution, abundance and movements of our New England birds, with notes on their habits and economic status, and the results of investigations carried on by this office and its co-operators. There is usually a section on bird banding and notes on conservation. This bulletin is widely quoted in newspapers and is an important part of the work of the Division.

The Division contributes occasional articles to magazines of newspapers or furnishes material for authors or staff writers. The Director writes a review of New England bird life for each issue of "Bird-Lore," and is now review editor of "Bird-Banding," besides contributing articles of general interest to these periodicals.

Several radio broadcasts have been given by members of the Division. Lectures form another important part of our work, and the economic value of our birds has been presented to such organizations as the Grange (local, Pomona and State gatherings), Four-H Clubs, horticultural and garden clubs, scout troops, women's clubs, fish and game associations, etc.

Legislation, both State and Federal, is closely watched and anything affecting our wild birds and animals or the outdoor life of our people is considered as within the scope of our interest and activities.

Personal interviews and correspondence about birds serve to bring us many new facts and to give to others the results of our study. With the completion of the three volumes of the "Birds of Massachusetts," the Division should be enabled to devote time to investigations in the field along the line of economic ornithology. A study of the food habits of our hawks and owls has already been started. Another suggested investigation is the relation between birds and cranberry bogs, and from Cape Cod comes a request to investigate the relation of certain birds to the turnip and asparagus crops.

The Division of Ornithology, under Edward Howe Forbush, achieved much of real value which culminated in the publication of his mastery "Birds of Massachusetts." It should not stand still and rest upon the laurels which he brought to it, but should continue its investigations in economic ornithology and should persist in its labors in the cause of the conservation of our wild life.

REPORT OF DIVISION OF PLANT PEST CONTROL

NURSERY INSPECTION

It must be that we in Massachusetts have learned to live with the imported pests that in years past have been the cause of so much discussion and so many quarantines. It is with a great deal of satisfaction that we can at this time look to our nurseries and feel that they are in excellent condition. Much of the credit for this lies with each nurseryman and is another example of New England's thoroughness and ambition to produce the best.

There has been a tendency in the last ten years toward an expansion of the nursery business in this State. A few years ago certificates were issued to about 150 nurseries, while this year 270 were granted. Naturally, many of these new nurseries are small, but it seems as if there is a wonderful opportunity for them to grow, especially when one considers the large amount of stock that is annually brought into the State.

In the fall it has been our practice to carefully examine all property immediately adjoining each nursery. This year these properties were found in very good condition, and, of course, such conditions affect directly the

nurseries and prevent to a large degree the introduction of caterpillars and scale insects.

Some insects which are not prevalent in the nurseries are obliged to be given consideration, such as the Satin Moth and the European Corn Borer. The Satin Moth, which is a free flier, has since 1919 spread rapidly, so that it now extends as far west as the Connecticut Valley. Fortunately, it confines its feeding to willows and poplars, and is easily controlled with arsenate of lead.

JAPANESE BEETLE

The Japanese Beetle is a temperate zone pest and it is conceded that it will eventually spread within its climatic range in the United States. The beetle came into this country probably about 1910 on a commercial importation of Iris roots from Japan. These were planted near Riverton, New Jersey, but when the beetle was discovered a few years later, it had spread to a considerable distance from its starting point, and has continued to spread at an average of five to fifteen miles each year. Occasionally long jumps have been noted. Examples of these are the infestations at Springfield and Boston, Massachusetts. The Springfield infestation can perhaps be accounted for by automobiles, while the Boston infestation probably came on boats from Philadelphia. There is grave danger in an infested area of transporting this insect in soil around the roots of nursery stock. It seems, therefore, that it is very essential that we in Massachusetts stay out of the quarantined area as long as possible, not entirely because of the damage that this beetle might do, but for the injury that a quarantine would do to the nursery business. It is expensive and causes considerable delay for the nurseryman within the area to comply with the quarantine regulations. In June the soil at Stearns and Court Square in Springfield was treated with carbon bisulphide, as beetles had been collected at these points in 1928. This treatment was not given with the expectation of eradication, but as a control measure. That it was effective is evidenced by the fact that only one-fifth as many beetles were collected this year. A new and important phase of clean up and control is the use of beetle traps. These traps are a device to hold an attractor (geraniol) to the beetle with a receptacle beneath into which the beetle will fall. In Springfield there were 1,200 traps maintained in co-operation with the United States Department of Agriculture and the Springfield Park Department. Approximately 1,000 beetles were collected in these, but whether or not they had previously laid their eggs is impossible to state. However, it is quite likely they were captured soon after emerging from the ground. In Boston 1,200 traps were distributed at Commonwealth Pier, Public Gardens and at a few outlying points. One hundred and eighty-one beetles were collected in these traps, but most of them were in the traps at the Pier, which would lead us to believe that the beetles were brought to Boston by boat. It would not be at all surprising to find additional infestations of this insect throughout the State within a few years, but traps, parasites, and sprays should effectively control it.

EUROPEAN CORN BORER

The two-brooded European Corn Borer infestation seems to have been fully as prevalent this year as it was in 1929. The heaviest infestations were found in Bristol County and some corn in that county was too badly infested to be marketed. However, corn shipped into Boston and Worcester from Rhode Island was more heavily infested than any corn grown in Massachusetts. As Rhode Island now has a law which requires certain clean up methods to be practiced, it is hoped that the conditions in Bristol County along the State line will be improved. Scouting this fall has added fifteen new towns to the two-brooded area. The quarantine now includes all of Worcester County. The Corn Borer law, which requires all stubble to be destroyed by December 1, has been very effective in delaying the spread of this pest and reducing the degree of infestation. It has been the policy of the Division to summons into hearings any violators of this law. Last year

more than 600 violators were called in for informal conferences, which were held in Boston, Worcester, Haverhill, Middleboro, Fall River, and Wareham. These hearings have proved to be of great educational value, and the co-operation obtained is all that could be desired.

Four additional towns were found infested in western Massachusetts with the single-brooded corn borer, but to date the insect has done very little if any commercial damage in this State. Considerable publicity and educational work has, however, been conducted in this area.

The Division has co-operated with the Federal Government in maintaining a corps of inspectors in the Boston Produce and Flower Markets, where the Corn Borer quarantine is operative.

APIARY INSPECTION

The duties of the Inspector of Apiaries during 1929 were varied. There were monthly contributions to the "Worcester County Farmer" on current beekeeping topics. Beekeepers' meetings were attended in several parts of the State; a particularly satisfactory one was a meeting jointly with fruit growers in Lancaster. This meeting as others, showed increasing demand for bees in orcharding, and for information concerning their care. How best to maintain the colonies, and where to get sufficient colonies, seem to be problems uppermost in fruit growers' minds.

In January an appeal along this line from the Middlesex County Farm Bureau, Mr. A. F. MacDougall, resulted in original experiments with package bees from the South, used in their shipping cages. This experiment was devised by Mr. Morley Pettit, former Provincial Apiarist of Ontario, Canada. Several hundred package-colonies were shipped to Middlesex County in May. Reasonable success having been obtained the first year, it is hoped to develop the methods further in the season of 1930. Mr. Pettit toured Massachusetts in December, 1929, when conferences were held in several parts of the State.

Bee disease suppression has progressed as in past years. Very little European foulbrood is found now in Massachusetts, so that the problem has become largely one of the control and suppression of American foulbrood. In handling this disease, more and more it is considered advisable or even necessary and economical, to destroy by burning, the colonies found infected. This policy, favored by the United States Department of Agriculture, is accepted largely throughout the country. It has had increased emphasis in Massachusetts the past year. The favorable conditions in Berkshire County and the Connecticut Valley, reported for several years, have been maintained. There has also been observed an improvement in conditions in Worcester County, which is consistent with the progress reported for several years. It shows that bee diseases are yielding from west to east in the State, and suggests that it will be possible to further crowd them toward the sea. Eastern Massachusetts, south of Boston, where in recent years it has been possible to give more intensive inspection, is showing improvement in some localities. In no part of the State has there been outbreaks of disease.

The Apiary inspection personnel was as follows:

Inspector of Apiaries, Burton N. Gates

Deputy Apiary Inspectors

Mr. Fred E. Challet, Northampton, serving the Connecticut Valley.

Mr. F. S. Devereux, Green Harbor, serving Plymouth County.

Mr. B. A. Hildreth, Sherborn, serving Middlesex and Worcester Counties.

Mr. Ivan Rawson, Pittsfield, serving Berkshire County.

Mr. John Van de Poele, North Abington, serving Bristol and Norfolk Counties.

Mr. H. L. Walton, Worcester, serving Worcester County.

WHITE PINE BLISTER RUST

To the close of the records on November 30, 1929, the White Pine Blister

Rust had been reported on the pine host in 285 of the 355 cities and towns in Massachusetts. Conditions prevailing during 1929 were favorable for the production of a heavy crop of spores in the spring, but the prevalence of unusually dry conditions during the summer months resulted in a below normal condition of infection on the leaves of Ribes (currant and gooseberry) bushes, the secondary host plants of this disease.

The State-wide effort which is being made to prevent the further spread of the rust is being carried on by this division in co-operation with the United States Department of Agriculture, other State departments in possession of forest lands, and local woodland owners throughout the State. Through the continued use of window and roadside exhibits, the publication of news items in the local press, and the distribution of printed circulars, the subject of blister rust and its control was kept before the general public. Intensive interview work among pine owners resulted in gratifying co-operation from 1,809 property owners. During the field season, 258,415 acres of land were inspected and 841,039 wild and 31,646 cultivated currant and gooseberry bushes were uprooted as a protection to nearby white pines. These figures include the results of re-examinations made on 16,336 acres of land owned by 53 former co-operators, who were anxious to have their pines more adequately protected from the rust, a few years having elapsed since the initial control work had been performed. In these re-eradication projects, 16,173 wild and 7 cultivated currant and gooseberry bushes were destroyed. In the combined work of the season, local co-operating individuals and other agencies expended the equivalent of \$12,131.16 in time or for hire of labor to assist in the eradication of the secondary host plants.

The plan to completely eradicate the European black currant from the State, on account of its extreme susceptibility to the blister rust, received attention only in those towns where the general control program was in progress. During the year, however, this work was completed in 27 townships.

In the regular spring inspections of the white pines growing in the Massachusetts nurseries, the disease was found on white pines in three nurseries. Only six specimens were reported, however, and, therefore, these findings are not of unusual importance. Control work was continued in the areas surrounding some of the nurseries that raise white pine ornamental and forest planting stock, including three of the nurseries operated by the Massachusetts Department of Conservation. The immediate purpose of this work is to insure the production of trees free from the blister rust, and the ultimate purpose is to enable our nurserymen to take advantage of the provisions of the Federal quarantine relative to the interstate shipment of white pines. Under the provisions of the Federal quarantine which requires special permits to accompany shipments of currants, gooseberries or white pines into Massachusetts, 153 such permits were issued for the entry of 1,151 currant bushes and 1,431 gooseberry bushes, and 11 permits for the entry of 5,506 white pine seedlings and transplants.

Except in the case of the work relating to the nurseries, the educational, service and control work during 1929 was carried on by the following personnel, namely, E. M. Brockway, William Clave, G. S. Doore, W. J. Endersbee, W. T. Roop, and R. E. Wheeler, under the direction of C. C. Perry, as State Blister Rust Leader. The work in and surrounding the nurseries was performed by the regular nursery inspection personnel of the division.

The Director wishes at this time to express his appreciation to Mr. C. C. Perry, who has had full charge of the White Pine Blister Rust work. His efficiency and faithfulness deserves the highest commendation.

REPORT OF DIVISION OF RECLAMATION, SOIL SURVEY AND FAIRS

RECLAMATION

The reclamation work of this division has been conducted as in previous years through the State Reclamation Board (Chapter 252 of the General Laws, Section 2) of which the director of the division is secretary. The report of the Board is given on page 22.

SOIL SURVEY

The field work on the soil survey of the commonwealth was completed this year in Franklin County. The work was first undertaken in Barnstable, Norfolk and Bristol counties in 1919 and has been progressing each year under co-operative agreement between the Department and the United States Department of Agriculture, the Federal Department furnishing the soil specialist, charting, editing and publishing the reports, while this Department furnishes an assistant for the field work and transportation.

The past season Mr. Rockwell Smith of Hadley represented the Bureau of Soils, United States Department of Agriculture, and Mr. Carey Howlett, the Massachusetts Department of Agriculture. Mr. Smith, a graduate of the Massachusetts Agricultural College, and for several seasons an assistant in this work, was promoted as chief surveyor by the Federal Department.

Completed reports are now available for the counties of Barnstable, Norfolk, Bristol, Worcester, Berkshire and Middlesex and may be secured, free of charge, through this Department. Additional county reports will be forthcoming as rapidly as possible with Dukes, Nantucket and Essex counties expected early in the year.

Cost of the Franklin County survey to the Commonwealth was \$925.63, and total cost of the entire state \$11,889.52. It is possible that the Federal Department may later request a recheck in some specific instances of the field work.

FAIRS

For 125 years Massachusetts has been making Fair History. The year 1929 was by far the best of all. Agricultural exhibits in twenty-seven major fairs of which the Department is co-operating increased fourteen per cent over the preceding year, attendance thirty-six per cent and total premiums offered \$5,849.00, of which the Department contributed \$539.25 over 1928.

The Department paid state prize money to 27 major fairs, 17 community fairs, 10 poultry and rabbit shows and 47 granges, totalling \$21,395.25. In addition, 200 state prize ribbons, 50 medals, 16 bangles and 9 special awards were made.

Special exhibits were made by the Department at the Flower Show in Mechanics Hall, Boston; the Union Agricultural Meeting at Worcester; the Brockton Fair and the Eastern States Exposition.

The Division of Dairying and Animal Husbandry assisted in conducting the Commercial Horse Show at the Eastern States Exposition at Springfield, the Boston Horse Show at Boston, the dairy department at Brockton and Worcester Fairs, as well as the Dynamometer Contest at Springfield and Worcester.

The Massachusetts Building at the Eastern States Exposition was redecorated and painted and the appearance of the grounds greatly improved by the construction of a beautiful rock garden.

The Department has issued monthly a Fairs Letter embodying timely information on fair management, the improving of exhibits and other matters relating to the betterment of agricultural exhibits.

Camp Gilbert at the Massachusetts Agricultural College was attended by nearly 150 boys and girls and considered one of the most inspirational gatherings ever held. The Department contributed \$1,969.65 to this Camp, which is under the personal direction of Professor George L. Farley, State Leader of 4H Clubs.

The Department, as has been its custom for several years, co-operated with the Department of Vocational Education in sending a Stock Judging Team to St. Louis who represented the commonwealth most creditably. The total expense was \$460.68.

The Division of Fairs of the Department has continued its policy of visiting all fairs receiving State Prize Money and checking up and tabulating all records available in order to make comparisons from year to year, thereby supplying information for the future benefit of all concerned.

PRIZE MONEY AWARDS

Major Fairs

Acton Agricultural Association, \$600; Barnstable County Agricultural Society, \$650; Blackstone Valley Agricultural Society, \$600; Bristol County Young Farmers' Fair, \$200; Deerfield Valley Agricultural Society, \$650; Essex Agricultural Society, \$1,000; Franklin County Agricultural Society, \$1,200; Gardner Agricultural Association, \$288; Groton Farmers' and Mechanics' Club, \$600; Hampshire, Franklin and Hampden Agricultural Society, \$1,200; Heath Agricultural Society, \$104.50; Highland Agricultural Society, \$700; Hillside Agricultural Society, \$700; Housatonic Agricultural Society, \$1,200; Littleville Community Fair, \$400; Marshfield Agricultural and Horticultural Society, \$650; Martha's Vineyard Agricultural Society, \$400; Nantucket Agricultural Society, \$200; Oxford Agricultural Society, \$500; Plymouth County Agricultural Society, \$550; Southboro Farmers' Fair, \$203; Sturbridge Agricultural Association, Inc., \$600; Union Agricultural and Horticultural Society, \$700; Weymouth Agricultural Society, \$449; Worcester Agricultural Society, \$1,500; Worcester County West Agricultural Society, \$800; Worcester Northwest Agricultural Society, \$850; total, \$17,494.50.

Granges

Abington, \$15; Acushnet, \$35; Anawan, \$15; Assonet, \$15; Becket, \$17; Bedford, \$40; Boylston, \$15; Brimfield, \$24; Chelmsford, \$15; Dedham, \$15; Dunstable, \$20; East Bridgewater, \$15; Eastham, \$15; East Free-town, \$15; Fairhaven, \$15; Grafton, \$15; Halifax, \$12.50; Hilltop, \$15; Holliston, \$15; Hopkinton, \$19.50; Lincoln, \$16; Ludlow, \$15; Mansfield, \$35; Merrimac, \$23; Natick, \$13; Needham, \$20; Norton, \$32.50; Oak Hill, \$9; Palmer, \$15; Plainville, \$15; Rochester, \$15; Rockland, \$15; Randolph, \$15; Southboro, \$20; Stockbridge, \$30; Stoughton, \$14; Swansea, \$20; Thrifty, \$25; Upton, \$15; Wendell, \$18; Warren, \$39.50; Westford, \$14; West Stockbridge, \$28; Williamsburg, \$25; West Newbury, \$12; Worthington, \$14.75; total, \$876.75.

Community Fairs, Clubs, Etc.

Ashby Community Fair, \$25; Cape Cod Horticultural Society, \$25; Chester Junior Fair, \$16; East Longmeadow Community Fair Association, \$25; Franklin County Fruit Show, \$33; Granville Apple Show, \$99; Hampden County Improvement League, \$100; Hancock Community Fair, \$133.50; Hingham Agricultural and Horticultural Society, \$140.50*; Monson Community Fair, \$25; Orange Boys' and Girls' Club, \$50; Sterling Farmers' Club, \$75; Truro Agricultural Society, \$15; Upton Farmers' Club, \$15; Union Meeting Fruit Show, \$297; United Shoe Machinery Athletic Association, \$50; West Granville Community Fair, \$25; Westfield Young People's Agricultural Society, \$35; total, \$1,184.

Poultry Shows

Athol Poultry and Pet Stock Association, \$150; Boston Poultry Show, Inc., \$455; Fitchburg Poultry Fanciers' Association, \$153; Harvard Poultry Club, \$98.50; Hub Poultry Association, \$150; Metropolitan Reading Poultry Association, \$88; Norfolk County Poultry Association, \$35; Northampton Poultry Association, \$150; New England Poultry Association, Inc., \$350*; Springfield Poultry Club, \$146; United Rabbit and Cavy Club, \$49.50; West Medway Fur and Feather 4-H Club, \$15; total, \$1,840.

* This includes 1928 appropriation paid in 1929.

Summary of State Prize Money

Agricultural and Horticultural Societies	\$17,494.50	
Poultry Associations	1,840.00	
Community Fairs	1,184.00	
Granges	876.75	
Stock Judging Team	460.68	
Badges, Medals, Cups	610.78	
Equipment—Tent	1,550.00	
Boys' and Girls' Club Work	1,969.65	
Special Exhibitions	4,918.34	
Total		\$30,904.70
Balance		476.53
		\$31,381.23
Appropriation	\$30,000.00	
1928 Balance	1,381.23	
	\$31,381.23	

REPORT OF THE STATE RECLAMATION BOARD

The members of the Board for 1929 were: Mr. Gordon Hutchins, Chairman, representing the Department of Health; Mr. Richard K. Hale of the Department of Public Works and Mr. L. B. Boston, Secretary, representing the Department of Agriculture.

During this year very little was accomplished by any of the existing or prospective districts. The Cutter Swamp District, Arlington, has made no progress towards going on with its work or towards meeting its obligations.

The Assabet River District has desired to proceed with lowering the river channel, but has so far been prevented by a conflict of authority as to collection of its assessments for this work. The district desires to proceed as soon as the money is available.

The Salisbury District prepared its plan and a preliminary assessment roll. Difficulties in determining the ownership of a portion of the district has required a search of deed records that is not yet completed. It is the intention of the proprietors to proceed with construction as soon as ownership can be sufficiently determined. Examination of several features relating to the proposed construction has been made by the Board during the year.

A few questions relative to the Green Harbor, Milford, and Cherry Rum Brook Districts have been referred to the Board and answered.

A petition from the Town of Framingham relative to the clearing of Beaver Brook and adjacent drainage areas in Sherborn and Natick was heard and returned for the signatures of individual owners. The matter was dropped.

Assistance on drainage was given the State Reformatory for Women, Sherborn, in Blackstone and Millville.

The mosquito control problem occupied most of the attention of the Board during the year. After the passage of the so-called mosquito amendment to the Reclamation Law (Chapter 288, Acts of 1929) there were several calls for assistance. Infested spots in Waltham, Boxford and Ipswich were inspected early in the spring. Cohasset and Scituate had appropriated money for such control. Both towns were examined somewhat in detail and advice given as to methods of control for this year. Gloucester also requested advice, which was given.

The first petition received for mosquito control survey came from the Cape Cod Chamber of Commerce and the commissioners of Barnstable County. The Board therefore decided to make a survey of the Cape covering such other places as petitioned as far as possible with the funds available. Mr. Robert W. Wales, entomologist, was employed, and with Mr. P. M. Churchill, the Board's consulting engineer, the work was carried out.

Besides the Cape, a reconnaissance was made of practically the entire sea-coast of the State north of the Cape and of a few places on Buzzards Bay. The results were published in two reports, one on Cape Cod and one general report.

Cohasset filed a petition early in July. A hearing was held and the Board advised that all the towns from Hingham to Plymouth should be included in that project.

Melrose petitioned in October. After examination and a hearing the Board advised that the project should be extended to cover Malden and Stoneham and that other surrounding towns should be advised to also start control work.

The Board closes the year with anticipation that the mosquito control movement will be rather general throughout the commonwealth. The budget for the year was \$5,500.

REGULATORY WORK OF THE DEPARTMENT

The record of prosecutions under the various laws which have been given to the Department of Agriculture to enforce is not of a great numerical number. It is the purpose of the Department to serve the farmer in every possible way and it is the policy of the Department to prosecute only when other means fail in getting satisfactory co-operation in the compliance of agricultural laws.

More than 100 persons were summoned to appear before representatives of the Department because of violations of the Massachusetts Apple Grading Law. The greater number of these violations were found in Boston. A most frequent violation was overfacing of boxes or the putting of the better apples on the top of the box. Two of our most flagrant cases, wherein a warning did not appear sufficient, were brought to the attention of the Municipal Court of Boston and a fine was imposed in each case. Hearings on minor violations of the Massachusetts Apple Grading Law were held in Worcester and Springfield in order to bring to the attention of people in these respective districts the need for more careful supervision of the apples packed under their care and responsibility.

Hearings were conducted in Boston, Wareham, Middleborough, Worcester, Haverhill, and Fall River at which places more than 600 persons were summoned to answer to violations of the corn borer law. It has been the policy of the inspectors checking on corn borer violations to first visit the persons who violated the law the previous year and the reports of the inspectors indicate that no second offenders were found in their respective districts. This fact indicates that the educational value of our hearings is bearing fruit and the policy accordingly has been adopted that first violations will not be prosecuted unless there appears to be a grave failure of co-operation.

Oleomargarine violations to the number of 11 were brought to the attention of the various district courts, and in all cases substantial fines were imposed. Hearings were held on minor violations of the oleomargarine laws and storekeepers to the number of approximately 60 were directed to appear at Boston relative to these violations. In all cases, definite instruction was given at the hearing for obtaining in each individual case a full compliance with the law and subsequent inspection indicated that the directions given were carried out in detail.

The seed law became effective in 1927 and the enforcement program was carried on with greater diligence during 1929. More than 400 official samples were collected by the inspectors and submitted to the seed testing laboratory at Amherst, Massachusetts. A publication showing the resulting findings of the tests and analyses published by the Massachusetts Agricultural Experiment Station will be sent to all those from whom official samples had been collected.

Hearings were held on certain violations of the seed law reported by inspectors and questions arose wherein the interpretation of the law did not apparently satisfy the parties at fault with reference to the definition of the

“vendor” of agricultural seeds. It was the contention of many of those who were requested to appear with reference to this violation that the name and address of the wholesaler satisfied the law as to this requirement. This matter was referred to the attorney-general and the opinion of the attorney-general reads in part as follows: “‘Vendor’ as used in said statute must be construed to mean a person, firm or corporation which actually sells within the Commonwealth the seeds described in the statute.”

“The statute applies equally to producer, wholesaler or distributor and retailer of said seed engaged in business in this Commonwealth. The tag or label required to be affixed to the container must have written or printed thereon all of the information required by this statute. This applies to the retailer who sells the seeds within the Commonwealth, notwithstanding the fact that the seeds which he sells may have been put up in packages by the producer, wholesaler or distributor doing business within or without the Commonwealth, and tags or labels bearing the name and address of such wholesaler, producer or distributor must be plainly printed in the English language and affixed to said containers. In other words, the name of the retailer must appear on every package of seeds, whether the seeds are contained in packages put up by the producer, wholesaler or distributor or put up in a ‘paper bag package.’”

Legal notices were prepared with reference to hearings to be held in accordance with the provisions of the farm products grading law on certified poultry flocks, certified baby chicks, certified hatching eggs and on native turkeys. These hearings were well attended and considerable information was obtained relative to the proposed grades. The grades and standards were later established and promulgated by the Commissioner of Agriculture and are now used extensively by many farmers.

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The Commonwealth of Massachusetts

ANNUAL REPORT

OF THE

Commissioner of Agriculture

FOR THE

Year Ending November 30, 1930



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The Commonwealth of Massachusetts

DEPARTMENT OF AGRICULTURE

To the Honorable Senate and House of Representatives:—

In compliance with the provisions of Chapter 128 of the General Laws, I am herewith making my annual report for the year ending November 30, 1930, for the Department of Agriculture.

Respectfully submitted,

A. W. GILBERT, *Commissioner*.

PERSONNEL OF THE DEPARTMENT

COMMISSIONER OF AGRICULTURE—DR. ARTHUR W. GILBERT, BELMONT

ADVISORY BOARD APPOINTED BY THE GOVERNOR AND COUNCIL

LESLIE R. SMITH OF HADLEY, Term expires November 30, 1930.
GEORGE E. TAYLOR OF SHELBURNE, Term expires November 30, 1930.
PETER I. ADAMS OF GLENDALE, Term expires November 30, 1931.
HERBERT N. SHEPARD OF WARREN, Term expires November 30, 1931.
JOHN BURSLEY OF BARNSTABLE (WEST), Term expires November 30, 1932.
STUART L. LITTLE OF NEWBURY, Term expires November 30, 1932.

DIVISIONS AND ORGANIZATION

DAIRYING AND ANIMAL HUSBANDRY—*Director*, JOSEPH C. CORT, READING.
MARKETS—*Director*, LAURENCE A. BEVAN, NEWTONVILLE.
ORNITHOLOGY—*Director*, DR. JOHN B. MAY, COHASSET.
PLANT PEST CONTROL—*Director*, R. HAROLD ALLEN, TAUNTON; *Assistant Director*, QUINCY S. LOWRY, CANTON.
RECLAMATION, SOIL SURVEY AND FAIRS—*Director*, L. B. BOSTON, AUBURNDALE; *Assistant Director*, A. W. LOMBARD, ARLINGTON.
AGRICULTURIST—DANIEL J. CURRAN, MARLBOROUGH.
SECRETARY TO THE COMMISSIONER—MISS HYLDA M. DEEGAN, BOSTON.

STATE RECLAMATION BOARD

Chairman, EDWARD WRIGHT, DEDHAM
L. B. BOSTON, AUBURNDALE
GEN. RICHARD K. HALE, BROOKLINE
Secretary, GEORGE R. STRATTON, HOPKINTON

REPORT OF THE COMMISSIONER

IMPORTANCE OF MASSACHUSETTS AGRICULTURE

Massachusetts reviewed 300 years of history and development during the past year. Accomplishments and achievements in practically every phase of national progress have been brought to our attention during this tercentenary year and the advancement of no other industry merits greater praise and distinction than that of agriculture. The early pioneers of Massachusetts Bay Colony were mainly farmers and they established our agricultural industry upon a foundation that was strong, sound and secure.

We have not only developed highly specialized phases of agriculture in this Commonwealth, but have sent to practically every state in the union trained men and women who have taken no small part in the advancement of national agricultural enterprises.

In Massachusetts today our farmers have a comparatively high standard of living. Automobiles, radios, modern farm machinery and home appliances are to be found upon the average farm. The farmer of today recognizes more than

ever before the value of education and the boys and girls from the rural sections are among the foremost in achievements at our colleges and universities.

Massachusetts Agricultural College is receiving its quota from our farm homes. Profitable farming today is not alone a matter of brawn. Experience has clearly shown that education and training in the basic principles of scientific agriculture is a pre-requisite to successful farming. The production of agricultural products is becoming increasingly complicated. More and dangerous plant pests and diseases are attacking our farm crops. The ever necessary return each year to the soil of plant food elements requires a technical knowledge of chemistry, agronomy, and soil bacteriology. Close contact with market conditions and careful supervision of packing, grading and sale of farm products are most important factors in the operation of a profitable agricultural project.

MARKETING FARM PRODUCTS

We are in the midst of a highly competitive marketing era. Farm products are being shipped into our local markets from every agricultural state in the union. Frequently the southern agricultural areas have supplied our markets with asparagus, strawberries, lettuce and other important farm products for months before the native products appear on the local markets. Our farmers must meet this competition. Cost of production must be curtailed. Intensive farming must be practised. Native-grown products must be so packed, graded and marketed as to bring a premium price for freshness and quality.

The Department of Agriculture has established many grades for Massachusetts farm products in the hope that all of our producers would offer for sale upon our own markets only quality products of outstanding merit. We believe that the consumer will recognize the value of local grown quality farm products and will endeavor to obtain such products whenever possible.

Farming as a business must take from other industries fundamentally sound economic principles of management and apply them to agricultural enterprises. Consumer demand for native grown farm products should be secured. Our specialized farm products should be advertised and the attention of our tourist friends should be focused upon the charm and beauty of Massachusetts rural life and surroundings.

Our Massachusetts farmers should awaken to the possibilities that exist for marketing quality farm products in an industrial state where less than ten per cent of the population lives upon the farm. Every section of the country today is attempting to win favor on our exceptional markets. We can compete if we use strict business principles in our production, transportation, advertising and marketing operations.

RECENT TREND OF FARM PRICES

General business activity declined somewhat in the fall of 1929 and developed during 1930 into a nation-wide depression. The purchasing power of the individual consumer decreased to such an extent that a sharp downward trend was evidenced in the quantity of farm products sold. Surpluses of farm products resulted and a steady drop in prices of staple food prices followed. Milk, eggs, butter, lamb, apples and other fruits and vegetables are examples of Massachusetts food commodities that reached new low price levels during the year 1930. Profits of certain farm projects were greatly reduced but the business of agriculture suffered much less in comparison than many other industries. Our facilities for another year of agricultural operations are intact, our markets should improve,—the spirit and enthusiasm of the farmer has not waned and agriculture will tackle the 1931 problems with renewed vigor.

RECOMMENDATIONS FOR LEGISLATION

Early in the year 1930, this Department suggested to the fruit growers of the state that a committee of representative men be selected to study the Massachusetts Apple Grading Law, investigate the marketing conditions of apples within and without the Commonwealth and to make certain definite proposals relative to necessary changes in the Apple Grading Law. A committee was selected, composed of 11 prominent fruit growers, three marketing officials and three rep-

representatives from the Department of Agriculture, who acted in an advisory way. It was decided that the compulsory features of the Massachusetts Apple Grading Law were not in keeping with a marketing policy that would permit each individual grower to use his best business judgment in the grading, packing and sale of his apple crop. A more voluntary type of law was suggested with provisions that the Commissioner of Agriculture be authorized to establish grades and that certain grades identical with United States grades for apples be adopted by the Department of Agriculture. The fruit growers were unanimous in their opinion that the provision in the law providing for a penalty for overfacing packages of apples should be retained. It was agreed, however, that the grower should decide for himself as to the necessity of marking the grade upon a closed package of apples. In any event, each closed package of apples should have the name and address of the person by whose authority it was packed, the variety and the minimum size of the apples contained in the package.

This Department has always advocated a policy of grading and packing quality farm products and bringing to the attention of the consumer through brands, labels or otherwise, the quality characteristics of the product. This policy applies to apples, and we anticipate under a voluntary law that those growers who pack the highest grade of apples will be rewarded and that the lesson derived from their marketing policies will eventually influence the greater proportion of our apple producers.

Our farm products grading law has been in operation for practically three years, and its success can be somewhat measured by the use of greater than a million labels identifying quality farm products used by our Massachusetts farmers. We are now planning to extend the scope of our program for marketing farm products under the New England label and for the proper protection of all persons operating under this law we are recommending a slight change. The provisions of the present law make it unlawful to use the brand or label unless the farm product conforms to the grade or standard established by the commissioner. The present law, however, does not make it unlawful to use an official grade designation when the label is not used. This Department is therefore recommending to the legislature that the present law be amended, that it shall be unlawful to use an official grade designation without using the label designed by the Commissioner of Agriculture and further providing a penalty for using the label if the farm products do not conform strictly to the grade requirements. This amendment will be of special interest to the consumer who can rely upon the grade designation and the label as designating a quality product.

RECIPIENTS OF AWARDS FOR AGRICULTURAL ACHIEVEMENT

Since 1924 the Department has honored each year five or six persons within the Commonwealth who have made some outstanding contribution in Agriculture and Rural Life. For this year the following were selected by the Board of Awards, and honors will be presented at the Union Agricultural Banquet in Worcester on January 8, 1931:

Miss Edna Cutter, Community Service, Dracut.
 Peter I. Adams, Public Service, Stockbridge.
 Frank P. Knowles, Farm Practice, Auburn.
 Thomas Royal Demers, Poultry, Rehoboth.
 Rayla Edelstein, Club Work, Saxonville.
 Joseph Sena, Club Work, Easthampton.

REPORT OF THE DIVISION OF DAIRYING AND ANIMAL HUSBANDRY

Increased activity in all lines of work in this division will be evident from the following report. It is particularly gratifying to state that the division has had the hearty co-operation of all dealers and producers with whom they have come in contact, as well as from organized groups and allied organizations. Much progress has been made, and due to a better understanding and fuller knowledge of the basic principles involved, the division is confident of still greater progress the coming year.

SURVEY SHOWS CONDITIONS OF SANITATION WHERE MILK IS PRODUCED

Co-operating with the United States Public Health Service, the State Department of Public Health and local milk inspectors, a survey of milk sanitation conditions was made.

Twenty cities and towns were selected in twenty widely separated sections and were, as near as possible, divided into different population groups as follows:

- Towns under 5,000 population.
- Towns or cities from 5,000 to 25,000.
- Cities from 25,000 to 50,000.
- Cities over 50,000, including Boston.

An outstanding feature of the survey was the overlapping of milk supplies between cities and the difficulty of segregating the supply of each municipality in order to present a fair picture of conditions. Careful selection and attention to detail made this segregation possible. In surveying the City of Boston it was necessary to visit producing dairies in the states of Maine, New Hampshire and Vermont. Vermont dairies supplying the cities of Worcester, Springfield, Fitchburg and Lexington were also visited.

The survey was begun on April 10 and completed on July 7, 1930. During that time there were visited and graded dairies and milk plants divided into the following groups:

Retail raw milk dairies	242
Raw to plant dairies	767
Pasteurizing plants	296
	<hr/>
Total inspections	1,305

These inspections were accomplished in sixty-three working days and deducting nine days consumed in driving, during which no inspections were made, gives an average of 20.71 inspections per actual working day.

In making the survey the actual inspections were made by a representative of the United States Public Health Service using the grade sheets of the Standard Milk Ordinance with the Standard Milk Control Code as the basis for interpretation and application of the various items on the grade sheets. The method employed offers the only method available in the United States today for a uniform study of milk sanitation conditions. Many items on both the raw milk and pasteurizing plant grade sheets were found to be uniformly violated, as follows:

Raw Milk Dairies

- Tuberculin testing of cattle
- Lighting and ventilation
- Floor construction and cleanliness
- Manure disposal
- Walls and ceilings
- Screening and flies
- Construction of utensils
- (Open-top pails are common)
- Disinfection and storage of utensils
- Proper washing of udders
- Hands disinfected
- Clean clothing

Pasteurization Plants

- Screening
- Protection from contamination and flies
- Toilet facilities
- Washing facilities (hands)
- Disinfection of utensils
- Proper thermometers
- Proper thermometer charts
- Inlet and outlet valves
- Air heating and agitation
- Vat covers
- Health certificate
- Proper bottling equipment

The survey has furnished us with the first accurate, dependable picture of milk sanitation conditions on farms and in plants ever obtained for the Commonwealth. Using the results of this survey as a foundation or starting point, it will be possible to show at any time the improvement made in the milk supply of any city or town. The survey was, of course, made under much more exacting requirements than are now in force in the Commonwealth and naturally it was to be expected that it would show defects in the milk supplies of the cities visited.

DEALERS AND PRODUCERS—VALUE MILK SURVEYS

Milk surveys were made in twenty-nine cities and towns. The following table shows the number of tests made in these surveys:

Reductase tests	1,958
Sediment tests	4,034
Temperatures	2,688
Butter fat tests	594
Total solid tests	30
Specific gravity tests	43
Samples collected for bacterial counts	593
Dealers' plants visited	443
Farms visited	713

A greater appreciation of the value of this work has been noticeable among both the dealers and the producers. The willingness of the producer to invest money in equipment is apparent in practically every market. In Marlborough twelve producers selling to one dealer purchased mechanical refrigeration outfits. Many farmers have built new milk houses and remodelled their barns as a result of these surveys.

CITY OR TOWN	Producers		REDUCTASE TEST					SEDIMENT TEST				
			Temperatures	Class 1	Class 2	Class 3	Class 4	Clean	Fairly Clean	Slightly Dirty	Dirty	Very Dirty
Newburyport	63	24	-	-	-	-	-	0	4	26	36	9
Greenfield	195	17	97	54	27	9	5	0	36	91	58	12
Worcester	104	8	101	68	19	4	1	1	21	44	51	9
Waltham	21	3	-	-	-	-	-	0	3	1	12	5
Westborough	11	12	-	-	-	-	-	0	3	4	4	8
Newton	16	12	-	-	-	-	-	0	6	5	5	5
New Bedford	803	95	-	306	76	20	13	0	137	266	325	145
Fitchburg	141	10	258	-	-	-	-	0	29	48	47	21
Clinton	51	11	-	-	-	-	-	0	6	9	29	19
Marlborough	71	7	-	-	-	-	-	0	18	27	17	8
Stoneham	6	6	-	-	-	-	-	0	3	2	2	0
Hudson	51	3	44	-	-	-	-	0	18	18	10	7
Wakefield	34	8	14	-	-	-	-	0	2	13	12	8
Boston	53	1	9	-	-	-	-	0	13	24	18	7
Reading	14	12	-	-	-	-	-	0	1	8	2	2
Frammingham	332	58	251	134	39	43	25	0	110	155	84	34
Ashland	12	12	-	-	-	-	-	0	1	7	3	1
Taunton	78	18	52	29	29	10	4	0	11	30	27	9
Rockland	14	14	-	11	3	-	-	6	1	7	0	0
Plymouth	72	40	15	-	-	-	-	8	15	21	25	1
Abington	38	38	-	15	0	3	-	1	1	11	19	4
Middleborough	78	24	1	-	-	-	-	8	20	27	14	6
Whitman	10	10	-	12	-	-	-	8	3	1	0	0
Bedford	496	2	286	-	-	-	-	0	3	60	189	37
Springfield	807	5	802	380	257	124	40	1	156	321	224	97
Lowell	52	1	52	-	-	-	-	-	-	-	-	-
Fall River	401	38	166	44	9	8	9	7	39	90	180	45
Walpole	112	12	109	24	16	23	44	0	6	10	63	26
Gloucester	21	20	21	16	4	1	0	1	3	8	7	2
Totals	4,154	521	2,688	1,093	479	245	141	41	669	1,334	1,463	527

Producers	4,154	Reductase Tests	1,958
Dealers	521	Sediment Tests	4,034
Temperatures	2,688		

MILK SURVEYS IN FRAMMINGHAM PROVE BENEFICIAL

A request was made by the Frammingham Milk Producers' Association and the Frammingham Milk Dealers' Association for a series of special surveys of the quality of milk coming into that market. Starting in April, five monthly surveys were made. The results, from the standpoint of improvement, were quite remarkable. This work was done with the primary object of working out a plan for the payment

of premiums for the production of quality milk. A committee of the Milk Dealers' Association made a definite recommendation for the adoption of such a plan this fall. An example of the benefit derived from these surveys is shown on the table below, which is representative of improvement in cleanliness of milk at one particular milk plant.

	<i>Number of Producers</i>	<i>Fairly Clean</i>	<i>Slightly Dirty</i>	<i>Dirty</i>	<i>Very Dirty</i>
April	34	0	5	14	15
May	36	11	14	7	4
June	34	6	13	13	2
July	32	10	15	6	1
August	32	15	13	4	0

MIDDLESEX COUNTY MILK IMPROVEMENT CAMPAIGN

This work was a continuation of that started in 1929. Through the co-operation of the Milk Inspectors of Metropolitan Boston, County Extension Service of Middlesex County and the New England Milk Producers' Association, a large number of samples were collected at the milk plants for testing with the reductase test, sediment tester and running for bacterial counts. Many farms were inspected and on the whole considerable improvement was made. The principal difficulty encountered in this campaign was the fact that milk inspectors in Metropolitan Boston are working under different regulations and do not interpret alike the regulations worked out during this campaign, the previous year. The result was that the plan of dividing up the farms of Middlesex County among milk inspectors for farm inspection was abandoned. The variations in interpretations made the plan too difficult to carry out. The need of a change in the milk inspection methods in Massachusetts is very apparent. The minimum standards of requirements for farms should be set up and a uniform interpretation of these standards established. Until this is done a permanent improvement of farm conditions will meet with only partial success. The extra cost to the farmers, because of the present ineffective system is considerable, and the dissatisfaction of the system very strong. The milk inspectors themselves are perhaps the strongest advocates of the change in the system.

SURVEY OF MILK CONSUMPTION STARTED

There has been much speculation regarding milk consumption and whether consumers change their requirements materially during periods of depression, a beginning has been made on this phase of the work in compiling information. The work is being done in co-operation with the United States Department of Agriculture, Massachusetts Agricultural College, University of New Hampshire, Boston milk dealers, the New England Milk Producers' Association and the New England Dairy and Food Council. Information is being collected from the route books of the dealers and also by the questionnaire method by going directly to the consumer's home. Without question the results of this survey will give valuable information on the question of milk consumption.

FINANCIAL STANDING OF DEALERS NOW AVAILABLE

For the second year financial reports have been required from milk dealers purchasing milk from producers within the Commonwealth. A more complete list of dealers was obtained from the local milk inspectors throughout the State. A somewhat better response has been obtained from the milk dealers than the first year the law was enforced, although some are still delinquent.

The reports are on file in the Department and open to inspection by the public. It is too early to comment on the value of the law, but only a comparatively small number of farmers avail themselves of the opportunity of checking up on the financial standing of the dealer to whom they sell their milk.

CO-OPERATION APPRECIATED

This division is especially grateful for the splendid co-operation it has received from various sources in promoting improvement in the matter of its quality milk program. Special appreciation is due local producers individually, as well as

producers' organizations, milk dealers, milk inspectors, county agricultural agents and the Federal government, especially its Department of Agriculture and Public Health Service.

CERTIFICATION OF POULTRY FLOCKS PROVE POPULAR

At the beginning of the year a change was made in the plan for handling this work. Mr. Flint, who had been inspecting for the Massachusetts Association of Certified Poultry Breeders, started as an employee of the Association and the work was done free of charge to the poultry breeders. A letter was sent out to all poultry breeders interested over the State, notifying them of the new arrangement. At a meeting of the directors of the Certified Poultry Breeders' Association at Worcester, no objection to the plan was manifested, but during the Boston Poultry Show there was some dissatisfaction expressed with free certification and it was decided to hold a conference at Worcester during the Union Agricultural Meeting. Twenty-five telegrams were sent to leading poultrymen representing members of the Association, and others interested, asking them to meet at the Hotel Bancroft on the morning of January 8, as a preliminary to a general meeting of poultrymen in the afternoon. At the morning conference, it was decided to discontinue free certification and make a charge of eight cents per bird for the service. The change in plan was explained at the general meeting in the afternoon to the apparent satisfaction of everyone.

January 15, 1930, letters notifying poultry breeders of the change were sent out. Mr. M. F. Delano and Mr. C. E. Brett were engaged to assist Mr. Flint in completing certification of the poultry flocks.

During the inspection season for the winter of 1929 and 1930, sixty-three flocks were certified. Only a part of the birds in these flocks were banded. A certificate of certification was issued to the owner of each flock. New England Quality labels identifying Massachusetts Certified Flocks were used by twenty-six flocks. During the spring all of the flocks were inspected for uniformity of hatching eggs as to size, weight and color. The result of this inspection was very satisfactory.

At a meeting of poultrymen held in the State House in July, a revision in the general plan for certification was made, involving some changes in the rules and regulations and the lowering of the cost of certification. For the inspection season of 1930-31 the cost is to be:

Five cents per breeding bird for flocks less than 1,000.

Four cents per breeding bird for flocks 1,000-2,000.

Three cents per breeding bird for flocks over 2,000.

The work of inspecting flocks for certification for the 1930-31 season was started in October and up to December 1, nine flocks were inspected, containing 13,553 birds. This season all birds are being banded. Two inspectors are at work and the demand for the service seems to be as good as could be expected for the season.

HORSES SHOW IMPROVEMENT AT EXHIBITIONS

Assistance was again given in conducting a Commercial Horse Show at the Eastern States Exposition at Springfield and the Boston Horse Show at Boston. There was quite a remarkable improvement in the quality of horses exhibited at both shows. The classes were larger and a greater interest shown on the part of owners. The value of such work is very apparent. The Dynamometer Contests at Springfield and Worcester were very successful, both having a large number of entries of excellent quality.

EASTERN STATES WOOL SHOW

For the second year the Division has co-operated with the management of the Eastern States Exposition, the United States Department of Agriculture and the New England Sheep and Wool Growers' Association in conducting a wool show at Springfield during the Eastern States Exposition. This year the show was held in connection with an exhibit of woollen textiles put on by the United States Department of Agriculture.

OLEOMARGARINE INSPECTIONS

A larger total number of stores were inspected than for several years. An effort was made to cover as completely as possible the four western counties of

the State, southern Worcester County and parts of eastern Massachusetts. It is impossible to cover the entire State each year. Violations of the law as far as store owners are concerned are to be handled through hearings rather than by prosecutions.

INSPECTION WORK COVERS WIDE FIELD

Inspections of this Division have been unusually active during the year, as shown in the following table. It has been exceedingly gratifying to note very evident signs of improvement in all lines of work effected by inspections.

Stores inspected for oleomargarine violations	4,474
Stores inspected for seed law violations	346
Seed samples collected	346
Poultry farms inspected	139
Dairy farms inspected	1,480
Pasteurizing plants inspected	316
Raw milk dairies inspected	249

REPORT OF THE DIVISION OF MARKETS

For a decade the Division of Markets has been assembling facts, compiling figures, disseminating information and rendering service to those engaged in the production and distribution of food products in Massachusetts.

When at first it seemed that the assembling and distribution of market news information was the primary work of the Division, step by step more and more duties devolved until in 1930 the personnel as well as time and money have been taxed to the utmost in attempting to cope with the broader and more general as well as far reaching scope of marketing problems.

As Massachusetts farmers are facing more and more outside competition as well as the occasion to seek outside markets, the problem of grading and standardization of their products have become more and more acute. The Division of Markets has, therefore, endeavored to find out the facts regarding market requirements and consumers' needs in order that any recommended standard would be as practical as possible upon which to base future work. When such standards and grades are established it has been the policy of the Division to see that they are maintained. This has been furthered by a system of inspection by frequent conferences with producers, by general educational campaigns, public meetings, exhibits, demonstrations and the like.

STANDARDIZATION AND GRADES

The interest by producers in grading this past year has come from two sources: first, those growers who are sending shipments in quantity outside of the state, and other producers who want to obtain the premium that good quality local products bring in our markets.

The greatest stimulus which the marketing program received came from the strawberry growers. Sixty-seven producers organized into a co-operative association and adopted a Massachusetts grade for strawberries. The result of this voluntary movement on the part of producers increased the demand for their product, netted the individual a larger price return, and new markets were found.

Another group of producers raising tomatoes organized into an association and again adopted a grade for their product. As a result of this movement approximately twenty-five thousand half bushels of graded and labeled tomatoes were offered to the trade. An outstanding result of this project was that the graded and identified tomatoes sold when tomatoes not graded did not get favorable recognition.

The other type of producer mentioned is well represented by the poultrymen, as he is trying to sell a special product to those consumers who are willing to pay a premium for a nearby egg. Their increased interest is shown by the fact that over 300,000 egg labels have been distributed during 1930, representing an increase of fifty per cent over the previous year. At present the label users are individual poultrymen not concentrated around any one market or combining with each other to sell or advertise. However, a committee has recently been appointed

from the Massachusetts Federation of Poultry Associations to consider and formulate plans for advertising local identified eggs.

So far the department has looked upon its inspection work as primarily educational; taking back to the producer the results of examinations of the inspectors and showing where and how the product can be improved in quality and pack.

All products carrying the label have been inspected either during their special season or in the case of eggs at intervals during the year.

Eggs.—All producers were visited and their labelled eggs were inspected at the farms either once or twice during the year.

Asparagus.—Inspections were made regularly at least twice a week in the wholesale market previous to any sales being made. A summary of facts brought out by such inspections was shown to growers at their farms and at meetings which resulted in an improved product coming on to the market.

Strauberreries.—Inspections were carried on at the time of loading the car. To facilitate inspection in the future, the growers are requesting a loading platform to be built by the railroad.

At the end of the season a summary of all inspections was tabulated as follows:

<i>Reasons Below Standards</i>	<i>Number Times Mentioned</i>
Small and nubbins	108
Too ripe	74
No hulls	41
Soft and rot	16
Dirt and sand	15
Green	13
Overfaced	11
Number of shippers who passed all inspections	12
Number of shippers found who passed all but one requirement of grade.	19
Number of crates inspected and found up to grade	408

Tomatoes.—Tomatoes identified with the New England label were all packed in one place and sold through one commission merchant and inspection could be easily carried out.

On several occasions inspections were made while growers were present so as to show them methods of inspection and the results of examinations. Furthermore the department purchased several crates of tomatoes after inspection and held them for several days reinspectng them and showing the results to the growers.

Turkeys.—The Thanksgiving turkey season is short and intensive, but practically every farm authorized to use the label on their birds was visited and inspections duly made.

USE OF GRADES BY CONSUMERS

The use of grades has developed largely from demand in the wholesale trade. When a grade is established it defines certain qualities or makes limitations of quality so that buyers and sellers far removed from each other can buy and sell with mutual confidence.

With regard to the consumer the situation is somewhat different. It is a question as to how much detail consumers would be willing to learn regarding specifications of grades. Consumers are, however, interested to obtain values commensurate with the amount of money they spend. They are also interested in the question of waste and it would seem worth while to build up some method of identification of our local farm products with the application of some grade or standard mark on such products.

The New England label program is headed in that direction, since on several commodities the grade name appearing on the package goes in its original form to the consumer. Examples of these are eggs in cartons, celery in wrappers and markers on asparagus.

APPLE MAGGOT EMERGENCY WORK

The apple industry of Massachusetts was faced with a serious emergency in the spring of 1930, due to the agitation in Great Britain regarding the receipt in that country of New England apples affected with apple maggot. As a result of

this situation, British authorities threatened to place an embargo on American apples.

Consequently an emergency appropriation was requested and granted under which a special inspection and educational service was conducted covering the principal apple shipping sections, supplemented by a concentration of police work at Boston docks, where apples were being loaded for export shipment.

The results of the inspection and certification work conducted in connection with this emergency have been very satisfactory both in respect to its educational scope in familiarizing growers with the dangers resulting from maggot infestation and in respect to the inspection activities which were completely successful in preventing the exporting of infested fruit from the state. In all this work this division has enjoyed the hearty co-operation of the United States Department of Agriculture and its inspection service. Because of the demonstrated value of this project and in view of the fact that continuance of the present British regulation is anticipated, the apple industry strongly urges that this service be continued during the coming year.

RADIO MARKET NEWS SERVICE

The Massachusetts Department of Agriculture is co-operating with the U. S. D. A., other New England States and the WBZ station for combined radio agricultural market reports. During the past year there have been two hundred and thirteen of these talks by ninety-six speakers. It is concluded with reports covering the market terminal; the market for fresh dressed meats; the wool market; and receipts of poultry, butter and eggs at Boston; the New York market for potatoes, onions, butter and eggs and the Chicago market for butter and eggs. Carload shipments of the more important crops are also given.

The evening broadcasts include reports covering the Boston markets for fruits and vegetables; butter; eggs; wool; hay, grain and feedstuffs; livestock; the important Connecticut markets; Springfield, Worcester and Providence produce markets; Presque Isle potato market, and such other information as may be available and of value.

In addition to arranging and carrying out the daily programs over WBZ, WBZA and the short wave station WIXAZ, which carries out programs to more distant points, material was secured or prepared for use over station WGY. This consists of a mid-week and week end summary of the Boston wholesale markets for agricultural products, material from the Massachusetts Department of Agriculture and the Massachusetts Agricultural College, which is used alternately Fridays, and monthly reviews.

MARKET REPORTING

Wholesale market news service covering the daily reports on supply and prices of fruits and vegetables on our three principal markets, Boston, Worcester, and Springfield, was continued throughout the year. Special effort was directed towards giving as complete information regarding marketing conditions of these products as possible.

Special Apple Market Report.—Owing to the extremely large apple crop and resulting difficult marketing problems, it was necessary to enlarge the scope of the Special Apple Market Report by inaugurating earlier in the season than usual a twice a week service; also by giving additional information regarding prices and market conditions on many of our middle western markets, which, owing to the drought in that section, have developed into favorable outlets for Massachusetts apples during the past year.

Retail Report.—The Boston weekly Retail Price Report was issued regularly, based on data collected in Boston and close vicinity. Special attention was given to New England and locally produced products. The report is used by homemakers and others buying in retail quantity, newspaper and magazine household sections, homemaker hour radio broadcasters, schools, college economics departments, producers selling direct to consumers, markets and research agencies.

APPLE GRADE INSPECTIONS

The usual inspection service on apples was maintained at country points, city markets and cold storage warehouses. On account of the large 1930 crop it was

necessary to employ one additional inspector for regular police work and also to combine some of the maggot inspection work with the police work. This additional force, however, was far from adequate to cover the apple situation thoroughly. Because of the comparatively better demand for apples in some mid-western markets than in local markets, there was an unusually large volume of apples shipped out of Massachusetts in carlots, several loading stations heretofore of minor importance shipping so heavily as to require nearly the full-time service of one man, providing such had been available. It was, however, impossible to handle all this extra work as it seemed advisable to concentrate on the heaviest points of movement in order to maintain the cumulative effect of the educational part of the inspection work which had been built up at these points during the past several years.

The Division co-operated with the Massachusetts Apple Grading Committee, which held several meetings throughout the year to consider possible revisions of the present grading law. Considerable material was compiled for this committee on the status of grading laws in numerous other states and other related matters. As a result of deliberations of the committee, substantial changes have been recommended for the present law which have been incorporated in proposed legislation.

CO-OPERATION WITH OTHER AGENCIES

To make progress on our agricultural problems the best efforts of all agencies are needed and if close co-operation can be maintained with all of them, our agricultural situation will be benefited. The Division of Markets enjoys such pleasant relations with both official and private organizations in carrying out marketing work.

Much of the work relating to grading is educational and so this department works closely with the extension service along all marketing lines. Also in connection with the different types of research work carried out by both the Experiment Station and the local office of the United States Department of Agriculture.

The Division of Markets has also worked with the Boston Market Gardeners' Association, the Massachusetts Fruit Growers' Association, the Farm Bureau, the Grange and local farm groups.

STATISTICAL INFORMATION

Boston's Food Supply Report.—Since 1923 the annual bulletin, "Receipts and Sources of Boston Food Supply," has been published and has been used by research workers and students in marketing, teachers, housewives, farmers, and various marketing agencies or middlemen. The report is a summary of the receipts and sources of the most important foodstuffs coming into Boston.

BOSTON WHOLESALE AND RETAIL APPLE MARKET

So many requests for information come to this office for the trend in receipts of apples in Boston and also the range in prices over a period of years that the Division of Markets summarized in detail such information. There is, therefore, on file the number of bushels of apples received weekly from the principal apple-producing sections of the United States. This information is sorted so that the volume that these specialized producing sections ship is known and the time of year of such shipments.

Included in this summary of figures are wholesale and retail prices on the principal varieties of our New England apples, including Baldwins, McIntosh, Gravenstein and Wealthy.

Large scale charts have been prepared on this information and the trends of prices are clearly shown.

CROP AND LIVESTOCK REVIEW

Each year through the co-operation of the New England Crop Reporting Service this office publishes a mimeographed report reviewing weather and crop conditions for the State.

The acreage and yields of the principal crops are summarized by counties and are compared with other years, and in special crops such as cranberries and onions, a historical record of yields and prices is given over quite a series of years.

This report also includes a New England Crop summary and statistics on United States for crops of a similar nature to those raised here.

GRAPE SURVEY OF WORCESTER COUNTY

A group of grape growers in Worcester County requested that a survey be made on grapes grown and sold in this county.

Growers and dealers were visited and such information as the following was collected: Methods of sales, volume of sales, types of containers used, and prices at which the product sold. In addition, the product was given a thorough inspection wherever possible in order to determine the variety, amount of color, sweetness, maturity, condition of the fruit, percentage of shattering, of disease and of insect injury.

Fourteen farms were visited at which seven varieties were inspected, namely, Worden, Concord, Brighton, Moores Early, Niagara and Lucile. In most instances the retail package was the Mississippi till. This is a two-quart basket holding from 3-3½ pounds of grapes. The wholesale package was a specially devised tray holding 5 till baskets. The weight of the bunches varied from one to eight ounces and the number in a package from 11-30. The sales were mostly retail (53½%) and the balance wholesale (46½%). Of the retail sales, 25½% were at the farm and 19% on a retail route. Wholesale sales were largely on the commission basis, 31½% going by this method. The balance was sold in the city and to local stores. The detailed information on quality was gathered for the purpose of using it as a basis for state grades. Further information, however, might be necessary before grades are established.

Experiments were made with cellophane, a transparent paper-like covering which makes a sanitary package. Baskets so covered sold before baskets without a cover, thus making the practice favored by dealers because quick movement is desirable. Peddlers particularly were in favor of the cellophane since it protects the paper against dust. Dealers preferred the Mississippi till basket to those with wire handles. The five basket tray was also desirable.

DIRECT MARKETING OF FARM PRODUCTS

With the large and concentrated population in Massachusetts, farmers have more opportunity to deal directly with consumers than in most other parts of the country.

In answer to a request for information on this work the division collected information on successful examples of direct marketing practiced in this state.

The report includes a definition of direct marketing, the statement that certain products which are of superior quality and those which are at their best when only a few hours old have been sold successfully by the direct marketing method. There are several types of direct marketing reported, such as selling at Roadside Markets, using Mail Order Routes, Local Delivery Routes and open air markets.

RETAIL BUYING HABITS

In the late summer and fall a survey of more than 200 retail stores has been conducted to find out where and how these stores buy their fruits and vegetables. Organizations co-operating in this study include, besides the Division of Markets, the New England Research Council, the Middlesex County Extension Service and the Department of Economics at Tufts College.

One of the objects of the survey is to find out where retailers buy their supplies, how much they patronize the farmers' market, to what extent they buy in the Faneuil Hall District, and whether they go daily to the South Boston Terminal or the fruit auction.

A preliminary report has already been submitted that shows about 90% of the stores located in the suburban area buy in the Faneuil Hall market. Outlying sections, or those about forty miles from Boston, depend largely on traveling or jobbers' trucks, who buy both from local farmers and from the South Boston Terminal.

About one-half of the buyers coming to Faneuil Hall market from all sections buy some supplies in the farmers' market.

In fact most nearby stores prefer to buy from farmers in the market to buying direct "at the farm" or at their store door from farmers.

This survey will be continued in 1931 and should be valuable in furnishing facts for use in consideration of improving the present market facilities or in considering relocation of such markets.

APPLE PACKAGE WEIGHING TESTS

During the spring months a series of tests were conducted on various types of apple packages to determine the weight of contents for the purpose of giving growers information regarding relative capacities of the numerous types of containers which are now used in the marketing of apples. It is planned to continue this work on several different varieties at various seasons of the year.

PARTRIDGE DAMAGE INVESTIGATIONS

Because of the increased amount of damage to apple trees done by partridge during the winter of 1929-1930, there was considerable agitation during the early Spring for legislation providing payment of damages for such injury to apple trees. This division co-operated with interested parties and conducted investigations of amount of damage. In view of the extension of the open season on partridge in effect in the fall of 1930, the suggested legislation along these lines was held over to see whether or not the longer shooting season would take care of this situation.

CHRISTMAS WREATH INDUSTRY

A group of people selling Christmas wreaths requested some information on the standardization of wreaths and market for them. An attempt was made to learn the type of wreaths produced near Boston, the type sold on the wholesale market and the kind sold by florists and others. Because of the large regions of evergreens in northern New England, the bulk of the greens sold in Massachusetts will probably always come from these states. There are, however, limited sections where farmers with their own woodlots still make a practice of producing and shipping wreaths each fall. Berkshire County, the northern part of Worcester County, and some sections south of Boston towards the Cape are the places where this industry still prevails. It was found that there are two types of wreath producers in the state, those who attempt to do a volume of business making up wreaths at a very low price, and others who specialize and make fewer wreaths, which are of high quality and sell at an increased price.

There are producers of wreaths in Massachusetts who are definitely interested in making contacts with markets other than Boston wholesale handlers. It was also found that many florists did not have any source of good wreaths. It, therefore, might be wise at some future time to arrange meetings between wreath producers and florists to see if both parties might not be better satisfied with present conditions.

ONION DEMAND SURVEY

Many comments were received by the Department of Agriculture and others that there had been a change in the demand for different types of onions. Consequently a survey was made in Boston, Worcester and Springfield markets to find out just what the trade demand for onions seemed to be. Questions were asked as to the amount and different kinds of onions used also as to whether they were Connecticut Valley, western, Spanish or Texas, or white varieties. Specific amounts of these different varieties used by stores and markets were collected and additional information was sought as to the kind of onions used in salads, sandwiches, side dishes and for flavoring.

Information obtained from buyers showed that Spanish and Texas Bermuda onions are used mostly for salads and the same are bought for sandwiches largely. For side dishes, soups and flavoring, either Connecticut Valley or western onions are used, with the latter being used in a little greater quantity.

Another question asked was as to whether or not grading influenced the kind of onions bought and all stores agreed that onions should be well graded. It was almost universally stated that buyers preferred to use western onions because they are better graded as to size and quality. In fact reports from 62 of the larger stores, markets, restaurants and warehouses in these cities showed that 25% of them would return to buying Connecticut Valley onions if the grades were im-

proved. The undesirable features spoken of in buying local onions were attributed to the onions being soft, having too much dirt, thick necks and immature.

LOCAL PRODUCTS FOR LOCAL CONSUMERS

Massachusetts consumers are partial to nearby or locally produced goods. In fact when they buy, they ask repeatedly whether the goods they are purchasing are produced in the state or otherwise. On the other hand, they do not always have the opportunity to obtain local goods. In the selling of certain products it has been found that the retailer is apt to stock those goods which are advertised extensively and which he can obtain with little trouble.

At the same time Massachusetts farmers are growing fresh quality products which in season cannot be matched for flavor and freshness and some program for making known that local products are plentiful and readily available would be of great aid to increase the consumption of our fruits, vegetables, milk and poultry products. For instance, this year the orchards of this state bore more apples, especially McIntosh and Baldwins, than the demand would consume locally and in some cases the crop was not harvested. If through advertising and publicity, attention could have been called to this fact, a very slight increase in the demand of apples would have prevented such conditions. However, to be most effective in advertising the goods should be identified so that the consumer can see at a glance that such products are local. Already certain Massachusetts products are labelled in such a manner, including celery, asparagus, eggs and turkeys.

Extending this program of advertising and bringing to the attention of the consumer whether with a distinct official label or by other means, would help solve this question of surplus products. It would mean getting the locally grown product into the hands of the nearby consumer when the product is plentiful.

REPORT OF THE DIVISION OF ORNITHOLOGY

During the past year much of the work of the Division was in relation to the study and distribution of Birds within the Commonwealth and adjacent areas. The public have been exceedingly co-operative in submitting to the Division timely matters of interest in relation to bird habits as they came to their attention, from which the Division gathered a great deal of helpful material for the monthly issue of "Items of Interest." This bulletin, which is mailed to a large number of regular correspondents, as well as the press, appears to be well received and is an excellent means of extending bird information.

SPECIAL BIRD STUDIES

The Division has always endeavored to carry on research in various matters pertaining to Bird life. During the year special emphasis has been stressed regarding the food habits of birds with particular reference to hawks and owls. A large number of pellets composed of the indigestible portions of the food of certain owls have been examined and special study given to their food habits. When these studies have been sufficiently computed it is the intent of the Division to publish a bulletin on the economic status of these interesting birds.

Birds and their relation to the Cranberry Industry is a further study being made by the Division. This study was started during the past season and will be carried on through such parts of the coming year as may be necessary. A somewhat similar study of the relation of birds to the orchard is also under way.

Increasing Demand for Bird Literature

The three-volume book on "The Birds of Massachusetts and other New England States" continues to have a steady and consistent demand, as attested by letters received by the Division. The colored plates found in these volumes are sufficiently outstanding to seem to warrant reprinting at some future time, in order that more general distribution may be made in response to the growing demand.

The bulletin entitled "Arbor and Bird Day" was widely distributed, especially through the schools of the Commonwealth, where in many cases it was used as a text. This bulletin was prepared through the co-operation of the Audubon

Society and the Massachusetts Forestry Association and had the official approval of the Department of Education. Formerly this bulletin was published annually and there are many persons who believe this practice should be continued. Unquestionably there is no better place to teach the conservation of our natural resources than in our public schools.

The past year has brought to the Division more requests than usual for bird literature and specific information on bird life. Hundreds of copies of State and Federal bulletins on such subjects available have been distributed. Two of our most popular and valuable State Publications on Birds are now out of print, but have been revised and are ready for publication whenever funds are available.

Extending General Bird Information

It is apparent that the general public are becoming more and more "Bird Minded." As an evidence of this, the Division notes increasing interest by the growing demand of Bird information in one way and another. For example, damage to orchards by Ruffed Grouse and other birds, or injury to gardens by starlings, as well as objectionable roosting habits of certain birds, have each received their full measure of attention.

The Division is likewise frequently consulted regarding proposed wild life sanctuaries or the further development of areas set aside for this purpose, not only within our own Commonwealth, but generally throughout the other New England States.

Numerous organizations have requested the Division for lectures on Bird Lore during the year, which have in practically all cases been complied with. The Division has been represented at various meetings of both State and National character and in all ways endeavored to supply information on all matters relating to the Birds of our Commonwealth.

REPORT OF THE DIVISION OF PLANT PEST CONTROL

NURSERY INSPECTION

It is very gratifying at this time to report that the Massachusetts nurseries are in excellent condition and apparently free from injurious insects and plant diseases. Our nurserymen have become accustomed to Federal quarantines, and these seem justified when the restrictions are not more harmful than the pest, or when the expense of enforcing them is not greater than the damage that the pest could inflict. Within the last year Massachusetts has been subjected to another quarantine—this against the Japanese Beetle. This insect has neither been found in or near any nursery, yet the Federal quarantine restricts the free movement of nursery stock from three counties. With the keen competition of business as it exists today, it would seem as if our nurserymen were situated more favorably than their associates in any part of the country. We have a wonderful market for all of our ornamental stock. We do not grow and cannot supply the demand for planting within the Commonwealth. Carloads and truckloads of nursery stock are brought in each year. Should we not concentrate on the opportunities we have here in New England and supply the demand with home-grown stock?

The Division has issued 303 certificates, an increase of 33 over 1929. In addition, over 300 licenses were issued to agents who buy and sell stock from certified nurseries. The properties immediately adjoining the nurseries are in very good condition, and it is our endeavor to keep them free from pests in order to safeguard the nurseries. Insects and diseases might readily enter from surrounding properties as well as on imported stock, and for this reason, considerable time is spent in examining stock brought in from other States.

Infestations of the gypsy moth were at a lower ebb than for several years, and consequently we were able to complete our inspection and issue all certificates early in October.

The Satin Moth is seldom found in the nurseries, and causes little concern by its feeding. It comes to our attention largely because of the quarantine, which restricts the shipping of willows and poplars. Up to this time it has been found as far west as Pittsfield.

JAPANESE BEETLE

As a result of the findings in 1929, the Federal Government co-operating with this Department, placed a quarantine on Hampden County. This quarantine required that all shipments of nursery stock sent to points outside the county be certified. Unquestionably, this caused considerable inconvenience to the nurserymen in that area, as it meant that a tag must be attached to each shipment and a record of it kept. The scouting this year began July 1 and continued until the first week in September. New infestations were found in Attleboro, New Bedford, Plymouth and West Springfield. The Attleboro and New Bedford infestation consisted of 14 and 3 beetles, respectively, and were found in the residential districts. In Plymouth a total of 74 beetles were collected. This infestation was near the central business section of the town.

In West Springfield 37 beetles were collected, but this was rather to be expected, and undoubtedly was a spread from the Springfield infestation.

Control.—In Boston, 1,150 traps were used to determine the infestation. Last year the heaviest infestation centered around the Edison plant and Summer Street. Here 113 beetles had been trapped. This year's trapping in a similar area yielded only 42 beetles. At Commonwealth Pier in Boston Harbor and at the Boston Navy Yard, a slight increase was noted over last year. The minor infestations at the Granary Burial Grounds, and the Public Gardens, were found to have carried over fewer beetles this year. The areas in and about these infestations were treated with a top dressing of arsenate of lead mixture between June 27 and July 2. Twenty tons of the mixture were applied to 26 acres of ground surface.

In Springfield, there are 11 more or less distinct infestations throughout the city. The only new infestation, however, is in the nature of an extension in the vicinity of Armory Square. While there has been no widespread distribution of the previously known infestation, beetles have been trapped outside of the areas treated with arsenate of lead last spring. There has been no material increase in the actual beetle population, however, since it was possible this year to collect only 1,305 beetles with the use of 1,500 traps as compared with a total of 1,065 beetles collected in 1,200 traps during 1929. The heaviest infestation in the city now exists in the central portion of the city in an area just west of the United States Armory grounds. The most remote infestation is at Forest Park, slightly over two miles from the central infestation. The original infestations in Court and Stearns Squares have been materially checked by the treatments applied. An application of arsenate of lead mixture as a top dressing was made between June 10 and 25, 1930. During this period fifty-two tons of the mixture were applied to sixty-nine acres in and about the then known infestations.

As a result of the new infestations in Attleboro, New Bedford, and Plymouth, the Federal Government extended the quarantine, so that at this time the quarantined area includes all of Hampden and Bristol Counties, and the following towns in Plymouth County: Bridgewater, Carver, Halifax, Kingston, Lakeville, Marion, Mattapoisett, Middleboro, Plymouth, Plympton, Rochester, and Wareham. Just how much of a hardship this will be on the nurserymen in the new area cannot be determined until the next shipping season.

EUROPEAN CORN BORER

The European Corn Borer situation in Massachusetts differs very little from that of 1929. The damage from the single-brooded corn borer in western Massachusetts has hardly been noticeable and most of the Division's attention has been focussed on the two-brooded insect in eastern and central Massachusetts. In the two-generation area, where two broods of borer occur each year, the plowing under late in the fall of corn stubble and other parts of the plant, as well as pithy stemmed weeds, produces an extremely high borer mortality. The immature borers are unable to withstand the winter, particularly when they are under ground and out of their natural environment. It is very desirable to cut the corn stalks close to the ground as this permits the removal of most of the borers from the field in the fodder—also better plowing can be practiced if the stubble is short.

Plowing, properly done, with all refuse cleaned up, is one of the most effective control measures for this pest.

Strict enforcement of the Corn Borer law and quarantine, has undoubtedly been effective in delaying the spread and reducing the degree of infestation of this pest. On December 1 the Division had twelve inspectors in the field to report all violations of the corn borer law—where corn stubble had not been destroyed. The violators were called into hearings held in Boston, Worcester, Haverhill, New Bedford, Middleboro, and Wareham. These hearings are educational and the results have been very encouraging. A feeling of co-operation is developed, and it is a rare occasion when the same party is reported for a second violation.

The Division has co-operated with the Federal Government in maintaining a corps of inspectors in the Boston and Worcester Produce and flower markets where the quarantine is operative.

APIARY INSPECTION

As forecast in 1929, the demand for bees to be used in fruit orchards during the bloom was acute. As had been anticipated, there was an apparent shortage in the supply. However, a few bee-keepers having made an attempt to meet the demand, built up apiaries for the purpose of rental. With this in view, a bee-keeper in the Connecticut Valley reports that he now has in excess of one hundred colonies ready for the 1931 requirements. Similar apiaries are in the process or are planned in other parts of the State; thus it is hoped that the local supply will gradually fill, in part at least, the urgent requirements of the fruit growers.

Worcester County and Middlesex County, through the agency of the Extension Service, secured from the South considerable quantities of package bees. This year the plan of caging the queen in each package was tried out, with a view to eliminating the difficulty experienced in 1929 of the bees establishing themselves with combs and brood within the container, necessitating ultimate destruction, or transferring by the inspectors. Due to exceedingly unfavorable weather conditions, particularly in the South, at the time of shipment North, of part of the consignment of package bees, some packages were received in bad condition. However, other lots came through in fine condition, and were successfully handled by the growers. It will be several years before the new practice of shipping North, orchard supplies of bees, can be brought out of the experimental stage; it will require co-ordinated experimentation, both by the shippers and the consignees. One point gained by the experience of this year is that the larger packages (usually 5 pounds of bees with their queen) have proven the most satisfactory.

The inspection of apiaries progressed rapidly this year, due both to the intensive work in Worcester County and to a season without rain. The plan for Worcester County was that tried and advocated for other parts of the United States, and spoken of as "the area clean-up plan." It was essentially an intensive drive to rid the county of the final or lingering cases of American foulbrood, known to be few and scattered. In order to round out the area, a few towns adjacent to the county, particularly in Middlesex County, were included. The approval and sanction of the Worcester County Farm Bureau, Mr. George F. E. Story, County Agricultural Agent, was secured. Uniform instructions were issued to each inspector and a letter of warning and an outline of the intensive drive was sent to each known beekeeper within the clean-up area.

The inspectors began work as soon as possible. They were instructed to find everyone who had bees; to examine all colonies of bees; if American foulbrood was found, to secure the written consent of the owner for the immediate destruction and burning of all infectious material; to examine all stored combs or unused combs; and to leave their territory only after it had been freed from disease. As a result, in Worcester County, 604 apiaries were examined, among which only twenty-seven were found to have any trace of American foulbrood. These apiaries comprised 1,942 colonies, of which 1,834 were in condition to examine. (Colonies not examined were of several classes: newly hived swarms on foundation, colonies housed so as to be incapable of examination, or so situated that examination was impossible.) Of the colonies examined, sixty-seven were condemned for American foulbrood; twenty-one of these were immediately destroyed by an inspector, through written agreement. The balance were either destroyed within a short time by the owner, or through a further arrangement with the Deputy Inspector, or, as was allowed in a few instances, were treated for the disease in a manner approved by the Inspector. This was possible in the hands of the competent bee-

keepers, and was actually done by the Deputy in some few cases, in order to save a slightly diseased colony.

In percentage, the intensive drive revealed that Worcester County had only 4.4% of its apiaries with any trace of American foulbrood, and only 3% of its colonies were diseased. Furthermore, the disease was confined to definite localities, the majority of the towns of the county having no disease. It will be quite possible to follow up these foci of infection and to practically eliminate them.

The area clean-up policy also enabled a new feature of inspection, namely, the examination of stored combs. It has been presumed for some time that one chief means of carry-over of American foulbrood was through the re-use of combs which had been put away, after possibly a colony had died on them from some unknown cause. In the county the inspectors found and examined 4,121 old combs; any of these found to have symptoms of a disease history were ordered destroyed. (In some instances very definite cases of former American foulbrood were revealed, showing the practicability of this means of eliminating the re-occurrence of disease.)

The statistics gained in this County suggest the smallness of Massachusetts apiaries. In Worcester County among the 604 apiaries, there was found an average of 3.03% plus colonies each. This suggests that possibly the beekeepers of the State average but a few colonies more, although there are some larger apiaries of 100 colonies or more, particularly in the western part of the State, which would tend to enlarge the average figures.

It is planned to follow up the work in Worcester County during 1931. The county, however, may now be included with the western part of the State as an area largely free from American foulbrood. Circumstances permitting, it is recommended that Middlesex County be designated for an area clean-up in 1931. To this end an additional appropriation has been requested.

While more work was done in Worcester County than is usual, inspection was also carried out as far as possible in other parts of the State. Areas east of Worcester County, particularly south of Boston, where much work had been done prior to 1930, showed improvement. Indications are, however, that Essex County is encountering persistent disease, especially American foulbrood, and needs intensive inspection. It is intended to follow as soon as possible, the area clean-up of Middlesex County with a similar drive in Essex County.

Periodical reporting of beekeeping news items to the "Worcester County Farmer" was continued in 1930. Beekeepers meetings were also attended.

Prompted by the proposal of Professor A. E. Stene of Rhode Island, for a meeting of the Apiary Inspectors of the eastern United States, for the purpose of considering plans to the end of the unification of apiary inspection methods, it is arranged to hold a meeting during the Union Agricultural Meetings, State Armory, Worcester, January 7, 1931. The Commissioner of Agriculture of each of the New England States and of New York have been requested to send the Chief Apiary Inspector or a representative to this meeting.

The Apiary Inspection personnel was as follows:

Inspector of Apiaries, Burton N. Gates, Worcester

Deputy Apiary Inspectors:

Mr. Fred E. Challet, Northampton
 Mr. F. S. Devereux, Green Harbor
 Mr. B. A. Hildreth, Sherborn
 Mr. Ivan Rawson, Pittsfield
 Mr. John Van de Poole, Abington
 Mr. H. L. Walton, Worcester

WHITE PINE BLISTER RUST

With the co-operation of property owners in the white pine producing sections of the State, the division has continued with the effort to prevent further damage by the plant disease known as the white pine blister rust. As stated in previous reports, the control of this fungous disease is accomplished by the complete elimination of currant and gooseberry bushes from areas in proximity to valuable white pines. This work of locating and eradicating the alternate host plants, which are known by the Latin generic name *Ribes*, involved the co-operative

examination of 136,791 acres of white pine producing lands and areas adjacent thereto. On these holdings 1,024,371 wild, and 8,155 cultivated *Ribes* were found and uprooted. The 720 co-operating property owners, including three State Departments owning forest land, expended the equivalent of \$6,381.65 in this protective work.

For the first time in Massachusetts a special drive was undertaken to completely rid the State of all specimens of the so-called European black currant. In one district (southeastern Massachusetts) the entire field season was devoted to this special project, while in three other districts a definite beginning was made. This work involved the examination of approximately 107,000 properties where such plants might be under cultivation. These inspections entailed a canvass in 65 townships in the State, and resulted in locating and destroying 1,534 patches of black currants containing in all 12,190 plants. This work will greatly retard the spread of the rust, because it will prevent the development of new local centers of infection which would result from the continued cultivation of this particularly susceptible variety of *Ribes*. The co-operation of 859 individual owners who responded to the request of the division to destroy all such plants was most helpful in the prosecution of this phase of the season's work.

During the year, the stage of the rust as it develops on the white pine host was noted for the first time in 25 additional townships in Massachusetts. To date (November 30, 1930) therefore, the disease on the pine host has reached 310 of the 355 cities and towns in the State. In the annual examination of the pine-producing nurseries in Massachusetts, very little evidence of the disease was noted. Infected pines were found in three nurseries, involving in all only nine specimens.

Through the instrumentality of this division, the Federal plant quarantine authorities amended the blister rust quarantine (No. 63) effective June 5, 1930, by adding the State of New York to the area in which five-needled pines can be shipped under permit by our nurserymen. This change was made in recognition of the fact that the blister rust is now present in New York State as generally as it is in the New England area, and, therefore, in accordance with accepted quarantine policy, New York State should not remain in a separate area. In connection with this same quarantine, the division issued during the year 112 permits involving the shipment into the State of 2,624 red or white currant and 790 gooseberry plants. In addition, 13 similar tags were granted permitting the entry of 1,372 white pine seedlings and transplants.

The division has continued with its policy of endeavoring to insure as adequate protection as possible to the white pine stock being produced in the commercial nurseries in the State, by eliminating from the environs of such areas, all currant and gooseberry plants. In accordance with this policy, control work was performed in protection zones surrounding two additional nurseries and re-examinations were made in connection with two other nurseries where initial control work was performed previously. In the areas re-examined, conditions were found to be very satisfactory, indicating the possibility of successfully protecting nursery-grown pines from this disease.

The blister rust educational, service, and control activities in Massachusetts during the fiscal year 1930 were conducted under the direction of C. C. Perry, with the assistance of the following district agents, namely: E. M. Brockway, William Clave, G. S. Doore, W. T. Roop, and R. E. Wheeler, and 29 temporary employees engaged during the field season. Mr. W. J. Endersbee, formerly agent in the Berkshire district, resigned March 15, to accept the position of Associate Forester at the St. Lawrence University in New York State.

The Director at this time wishes to express his appreciation for the services rendered by Mr. C. C. Perry, who has not only had full charge of the white pine blister rust work, but has assisted in the general work of the division.

REPORT OF THE DIVISION OF RECLAMATION, SOIL SURVEY AND FAIRS

RECLAMATION WORK

Reclamation of waste areas in Massachusetts for agricultural purposes has not been a pressing need of the commonwealth during the past year. It is generally recognized that while half a million acres of our state is marsh land and possibly

an equal area rocky or impoverished land, improvement of cultural methods on lands already in use and better grading and marketing of crops produced are more pertinent problems for consideration.

The reclamation work of this division has, however, been mainly concerned with the drainage of wet lands, primarily for the control of mosquito breeding areas and as in previous years conducted through the State Reclamation Board (Chapter 252 of the General Laws as amended). The report of the Board will be found on page 24.

SOIL SURVEY ACTIVITIES

Massachusetts has a total land area of 5,144,690 acres, of which soil survey reports are now available for 4,686,080 acres. The balance has been surveyed, but the reports are not yet available which cover Hampden, Hampshire and Franklin Counties.

These completed reports contain much valuable information. They discuss the following points in more or less logical order: (1) description as to location, boundaries, topography, drainage and transportation facilities; (2) climate; (3) agricultural conditions; (4) agricultural development; (5) general soil descriptions; (6) suggestions for soil improvement. The survey is admittedly a basis for fertility work and for obtaining practical data which, when properly organized, will be of direct and immediate aid to the farming interests.

The Department has, with the exception of Plymouth County, all reports so far completed and are for general and free distribution.

AGRICULTURAL FAIRS

Approval by the legislature of \$5,000 additional prize money for agricultural fairs in 1930 was a real incentive for fair officials to exert unusual effort in making the Tercentenary Year an outstanding year of progress. As a result the agricultural fairs experienced a most successful season, even though business conditions were not of the best.

Increased Attendance and Exhibits

The general industrial depression apparently did not adversely influence fair attendance as the group of fairs securing an allotment of state prize money showed an actual increase in attendance of over six thousand people. There was also a considerable increase in the number of agricultural exhibits over that of 1929. This was particularly noticeable in regard to the number of boys' and girls' exhibits. The number of cattle and horses exhibited also showed an increase, all of which apparently indicates that the agricultural fairs in Massachusetts not only continue to prove their value to the agriculture of the commonwealth but also to preserve their drawing power for the general public.

Quality of Exhibits Improved

From an agricultural, educational, industrial and recreational standpoint the fairs have done and are continuing to do a fine piece of work in improving the quality of our livestock. This is very noticeable especially in the case of dairy cattle, as many breeders have received in sales value increased substantial amounts as a result of blue ribbons won in the show rings of many of our fairs. The stimulus which 4-H club work and other junior activities receive from participating in agricultural fairs cannot be overestimated, and this participation contributes in no small part to the interest and success of this most worthy undertaking.

Fairs Are the Farmers' Show Windows

The agricultural fair also serves as the show window for the farmer to present to the consuming public the results of his year's work. The attractiveness and sales appeal of these displays tends to increase the demand for fine quality agricultural products properly graded and packed, and displayed in a pleasing manner. The value of this phase of fair activity is indeed great when coupled with the benefits which the farmer himself receives from the educational exhibits, farm machinery, etc., make a grand total of results accomplished of a very considerable amount.

Specific Assistance

The Department paid state agricultural prize money in 1930 to 23 so-called major fairs; 15 community fairs and local exhibitions; 47 subordinate granges and 13 poultry and rabbit shows, totalling 98. These organizations, in addition, paid of their own money for agricultural prizes \$36,793.68. According to the records of the Department there were 86,912 agricultural exhibits in competition at these various fairs and exhibits, which were considerably in excess of the previous year.

In addition to prize money paid through the Department, it awarded 227 ribbons, 27 medals, 12 bangles and 20 special trophies either directly or through the various agricultural organizations of the commonwealth.

Special exhibits were made by the Department at the Union Agricultural Meeting in Worcester, the Eastern States Exposition at West Springfield, and the State Governmental Activities Exposition at Boston and managerial assistance given by members of the Department for special contests at Eastern States Exposition, Brockton Fair, Worcester Fair and Boston Horse Show.

Junior Work Encouraging

The efforts of those agencies sponsoring young people's work, during the past decade, is showing tangible results. The young people's exhibits, particularly those of the 4-H clubs, are taking foremost rank at many of our fairs. The young people themselves are assuming responsibility by actually securing exhibits and arranging the same, thus acquiring knowledge of fair management, which speaks well for the continuation of fair work years hence.

The Department has continued the policy established several years ago of making possible Camp Gilbert at the Agricultural College, where nearly 200 boys and girls from all counties in the state meet for educational and recreational advantages during one week in July. The Department expended \$1,982.50 for this Camp and the promotion of 4-H Club work during 1930. It also provided \$500 in financing a Livestock Judging Team in representing the commonwealth at the National Dairy Show in St. Louis, where 32 other states were competing.

Extending Fair Information

The Department has continued its policy of issuing a Monthly Fair News Letter and sending copies to all fair secretaries and allied groups. This monthly publication contains fair information, suggestions and stories of outstanding accomplishments relating to agricultural fairs. The press of the state have also been informed, from time to time, of fair information, and the fairs themselves supplied with timely news items and statistical information whenever so requested. Fairs have been inspected by members of the Department or their agents and records of their findings tabulated.

DISTRIBUTION OF STATE PRIZE MONEY

Below are listed disbursements of agricultural prize money to the respective organizations entitled to the same, as well as a financial summary of all expenditures, according to the General Laws, Chapter 128, section 2.

23 Agricultural and Horticultural Societies

(Brockton and Eastern States Exposition not included)

Acton Agricultural Association, \$700; Barnstable County Agricultural Society, \$800; Bristol County Young Farmers' Fair, \$400; Deerfield Valley Agricultural Society, \$750; Essex Agricultural Society, \$1,400.30; Franklin County Agricultural Society, \$1,800; Groton Farmers' & Mechanics' Club, \$555.50; Hampshire, Franklin and Hampden Agricultural Society, \$1,500; Heath Agricultural Society, \$150; Highland Agricultural Society, \$800; Hillside Agricultural Society, \$900; Housatonic Agricultural Society, \$1,500; Littleville Community Fair, \$400; Marshfield Agricultural and Horticultural Society, \$800; Martha's Vineyard Agricultural Society, \$500; Nantucket Agricultural Society, \$200; Plymouth County Agricultural Society, \$650; Sturbridge Agricultural Association, Inc., \$700; Union Agricultural and Horticultural Society, \$750; Weymouth Agricul-

tural Society, \$450; Worcester Agricultural Society, \$2,000; Worcester County West Agricultural Society, \$950; Worcester Northwest Agricultural Society, \$1,050; total, \$19,705.80.

47 Subordinate Granges

Abington, \$15; Ashburnham, \$15; Amherst, \$15; Brimfield, \$29; Braintree, \$20; Boylston, \$15; Bedford, \$49; Becket, \$20; Chelmsford, \$15; Cochituate, \$15; Dedham, \$16; Dunstable, \$25; East Bridgewater, \$25; Eastham, \$12; East Freetown, \$15; Grafton, \$24; Granby, \$13; Halifax, \$15; Hilltop, \$25; Holliston \$20; Ludlow, \$25; Mansfield, \$47.50; Merrimac, \$31; Natick, \$15; New Salem, \$35*; Norton, \$47.50; Northboro, \$15; Oak Hill, \$15; Plainville, \$20; Palmer, \$15; Ponkapoag, \$15; Rochester, \$25; Rockland, \$15; Randolph, \$25; Stockbridge, \$50; Swansea, \$24.50; Thrifty, \$25; Upton, \$15; Westboro, \$15; Wendell, \$20; West Stockbridge, \$24; Williamsburg, \$23; Warren, \$39; Worthington, \$25; Waltham, \$15; West Newbury, \$20; Westford, \$15; total, \$1,054.50.

15 Community Fairs and Local Exhibitions

Ashby Community Fair, \$75; Cape Cod Horticultural Society, \$50; Chester Junior Fair, \$30; East Longmeadow Community Fair Association, \$50; Franklin County Fruit Show, \$39; Hampden County Improvement League, \$100; Hancock Community Fair, \$196.50; Hingham Agricultural and Horticultural Society, \$72; Monson Community Fair, \$50; Orange Boys' and Girls' Club, \$75; South Amherst Apple Show, \$133.25; Sterling Farmers' Club, \$75; Upton Farmers' Club, \$40; Union Agricultural Meeting Fruit Show, \$267; West Granville Community Fair, \$50; Westfield Young People's Agricultural Society, \$49; total, \$1,351.75.

13 Poultry and Rabbit Shows

Athol Poultry and Pet Stock Association, \$332*; Boston Poultry Show, Inc., \$382; Fitchburg Poultry Fanciers' Association, \$137; Harvard Poultry Club, \$112; Metropolitan Reading Poultry Association, \$24; New England Rabbit, Cavy and Fur Club, \$49.50; Norfolk County Poultry Association, \$37; Northampton Poultry Association, \$149.50; New England Poultry Association, Inc., \$200; Springfield Poultry Association, \$146; United Rabbit and Cavy Club, \$75; Southern New England Rabbit Breeders' Association, \$10.50; West Medway Fur and Feather 4-H Club, \$25; total, \$1,679.50.

Summary of State Prize Money

Agricultural and Horticultural Fairs	\$19,705.80
Subordinate Granges	1,054.50
Community Fairs and Local Exhibitions	1,351.75
Poultry and Rabbit Shows	1,679.50
Junior Activities	1,982.50
Badges, Medals, Cups, Ribbons, Trophies	1,088.97
Livestock Judging Teams	600.00
Special Exhibitions	6,039.26
Miscellaneous Expenses	261.98

REPORT OF THE STATE RECLAMATION BOARD

HISTORY OF THE RECLAMATION LAW

The law providing for a State Reclamation Board was enacted in 1923. Upon its enactment the State Reclamation Board supplanted the State Drainage Board, organized in 1918. It may be of interest to note that the first drainage law in Massachusetts was passed in 1702 and since that time revisions and additions have been made as follows: 1745, Ch. 16; 1795, Ch. 62; 1836, Ch. 115; 1860, Ch. 148; 1882, Ch. 189; 1885, Ch. 384; 1902, Ch. 195; 1913, 1917, Ch. 212; 1918, Ch. 289; 1919, Ch. 98; 1921, Ch. 252; 1922, Ch. 349; 1923, Ch. 457; 1924, Ch. 93; 1926, Ch. 393 and 1929, Ch. 288.

HISTORY OF THE WORK

A resumé of the work accomplished since the establishment of the State Reclamation Board is tabulated as follows:

* Includes 1929 appropriation paid in 1930.

TABLE OF PETITIONS TO THE (DRAINAGE) RECLAMATION BOARD

No.	Date of Petition	Towns Where Located	Commissioners Appointed	District Formed	District or Petition Name	Acres Involved
1	Feb. 21, 1919	Salisbury	Apr. 11, 1921	Aug. 23, 1922	Salisbury Drainage*	1,239
2	Feb. 21, 1919	Salisbury	Apr. 11, 1921	July 13, 1928	Salisbury Reclamation	1,239
3	May 25, 1920	Marblehead	(3) Mar. 29, 1921	Apr. 16, 1921	Green Harbor Drainage*	1,300
	Oct. 1, 1923	Marblehead	(5) Feb. 26, 1924	June 21, 1924	Green Harbor Reclamation	1,334
	June, 1921	Carver	Sept. 12, 1921	Dec. 3, 1921	Wencontit River Drainage	450
		Middleborough				
		Wareham				
4	Dec. 15, 1921	Northborough	(3) May 11, 1922		Assabet River	
	Feb. 14, 1922	Northborough	(2) June 6, 1922	June 3, 1922	Assabet River Drainage*	500
	Oct. 23, 1924	Northborough	(5) Nov. 26, 1924	Mar. 19, 1925	Assabet River Reclamation	348
5	Dec. 24, 1921	Northborough			Lower Division Pasture and Tillage	262
	Oct. 9, 1922	Marblehead	{ Nov. 10, 1922		North Marblehead	262
		Marblehead	{ Aug. 28, 1923			
6	Apr. 8, 1922	Shelburne	June 19, 1922	July 5, 1922	Shelburne	15
7	Apr. 25, 1922	Greenfield	Aug. 26, 1922		Cherry Run Brook Drainage	225
8	May 1, 1922	No. Weymouth	Nov. 9, 1922		Wessagussett	7
9	Sept. 28, 1922	Boylston	Apr. 3, 1924		Malagasco	90
10	May, 1923	No. Scituate			North Scituate	100
11	May 21, 1923	Deerfield			Great Pasture	10
	June 15, 1923					
12	May 21, 1923	Deerfield			Wapping	
	June 15, 1923				Wapping Reclamation	1,673
13	Oct. 18, 1923	Whitman	Dec. 8, 1923	June 24, 1924	Bear Meadow Reclamation	203
14	Nov. 1, 1923	Arlington	(3) Feb. 26, 1924	July 10, 1925	Cutter Swamp Reclamation	42
		Lexington	(3) Oct. 11, 1925	May 20, 1924		
15	Jan. 8, 1925	Sbaron	Apr. 22, 1925	May 28, 1925	Massapoag	200
16	Apr. 1, 1925	Milford			Milford	94
17	Apr. 13, 1925	Dover			Scoutland	
18	Nov. 6, 1926	Brookfield			Quebourg	
19	Nov. 11, 1927	Tewksbury			Tewksbury	
20	Dec., 1925	Frammingham			Cochituate	
		Sherborn				
		Ashtand				
		Natick				

* Dissolved.

Note: In addition to the above, the Board has made over 30 examinations of and reports on proposed projects that did not develop to the stage of formal petitions. In 12 of these cases the owners were enabled to solve their problems through the advice of the Board.

ORGANIZATION OF THE BOARD

(Chap. 393, Sec. 2 of the General Laws)

The Department of Agriculture is represented on the State Reclamation Board by Mr. L. B. Boston, the Department of Public Health by Mr. Edward Wright, and the third member, Gen. Richard K. Hale, is associate commissioner of Public Works.

Mr. Wright was appointed by Commissioner Bigelow of the Department of Public Health on January 16, 1930, to fill the vacancy of Mr. Gordon Hutchins, resigned, and was elected by the Board as chairman. Mr. Boston resigned as secretary of the Board on October 20, 1930, and Mr. George R. Stratton was appointed full-time duty to this office.

The Board have held thirty-eight regular and three special meetings during the year. They have endeavored to meet every Monday, but rush of work meant many extra sessions. In addition to regular Board meetings, eight public hearings have been held by the Board in various parts of the state as a result of petitions for mosquito control work.

The budget for administration of the work called for \$10,000, but due to extra demands and increased activity, particularly from Barnstable and Nantucket counties, this amount was increased to \$17,500. In addition, the Board has had the approval of expenditures of local funds in mosquito projects considerably in excess of \$100,000 more.

The Board employed Mr. Percival M. Churchill as its consulting engineer, Mr. Robert W. Wales its entomologist, and Mr. George L. Tulloch and Mr. Robert L. Armstrong assistant entomologists.

REVIEW OF EXISTING DISTRICTS

There has been relatively little change in the progress of existing reclamation districts during the year. Salisbury has completed and published their assessment roll. Assabet is endeavoring to straighten out their problems of collecting assessments which have been held up pending a ruling on the legality of collections by the Commissioner of Taxation. The remaining organized districts are inactive.

MOSQUITO CONTROL ACTIVITIES

Enacted Legislation.—The authority for municipalities to vote money for mosquito control was extended by Chapter 96, Acts of 1930, to permit the expenditure of such funds by the boards of health of cities and towns not included in a control project defined and designated by the Board.

By Chapter 379, Acts of 1930, the entire area of Barnstable County was constituted and named Cape Cod Mosquito Control project. The act required all towns in the county to raise and appropriate twenty-five cents for each one thousand dollars of their valuation to finance the work for each of the years 1930 and 1931 and also authorized the receipt of additional contributions for this purpose. This project was to serve as a demonstration of methods to be applied elsewhere in the state. The Board was instructed to report on this work and to suggest methods of financing such projects in the future as well as any other changes in the reclamation law which might appear to be needed to accomplish proper control measures.

The Department of Public Works, consulting with this Board, was instructed by Chapter 300, Acts of 1930, to construct a dike across Race Run, Provincetown, for mosquito control and was authorized to expend a sum not exceeding \$20,000 for that purpose.

Petitions to the Board.—Primarily due to aggressive activities of the Massachusetts Mosquito Control Association as well as that of local organizations in the interest of mosquito control work, the Board received petitions asking for a preliminary survey and report from more than one hundred cities and towns within the commonwealth. As a result of these petitions, eight hearings were held where the petitioners were heard and promptly advised as to methods of procedure.

Projects Formed.—During the year two organized mosquito control projects have been organized, namely: Nantucket and Cape Cod and a Belmont, Cambridge and Watertown project is under consideration. Several other municipalities are working independently on mosquito control measures as well as isolated groups

of individuals. It is reasonable to expect the active formation of other cities and towns into organized projects during the coming year.

Investigational Work.—Entomologists employed by the Board have continued field investigational studies of mosquito breeding areas throughout the year. Such studies have been made of the north and south shores and the Charles River area in particular. Sufficient information is now available to enable the Board to specifically recommend control measures in practically any town or city east of Worcester or at least with a minimum of effort review a checkup in any specific section within this area.

Saugus-Revere Studies.—At the request of certain influential parties in Saugus, Lynn and Revere for a survey of the marsh areas in that vicinity, the Board has made special studies and suggested several solutions for the improvement of the area both from the standpoint of mosquito control and industrial development. A report of their suggestions will be prepared and available for distribution in the early part of 1931.

Extending Information.—The Board issued a sixteen-page bulletin on the "Mosquitoes of Massachusetts" early in the year, which has been generally distributed and favorably received. It contains suitable illustrations to emphasize the text and is comprehensive enough to cover the general mosquito situation.

A flyer, "Know your Mosquito," was also printed and seemed to meet a popular demand, as nearly 100,000 copies have been distributed through schools, local organizations and at fairs and expositions.

The Board realizing the need of "mosquito education," has in many cases supplied lantern slides, lectures to various organizations, as well as charts, photographs, models and aquarium exhibits. It has also given news items of timely interest to the press and received no small amount of publicity throughout the State.

Results Already Evident.—Although this has been the first year that mosquito control projects have been organized and supervised by the Board, there are innumerable evidences of tangible results. The work in Nantucket is practically completed and results most encouraging. Work in Barnstable County, although far more complicated and extensive, has shown tangible evidence of success. The matter of maintenance of work already completed will be one of the major problems demanding the attention of the Board in the future.

REGULATORY WORK OF THE DEPARTMENT

The Department of Agriculture administers several regulatory statutes. The most important among these are the Apple Grading Law, the Seed Law, the Farm Products Grading Law, the Corn Borer Law, the Nursery Inspection Law, the Apiary Law and the Oleomargarine Law.

THE APPLE GRADING LAW

The Apple Grading Law specifically provides that a hearing be given to the parties concerned before further action is taken by the Department of Agriculture. It has been the policy of this Department to place considerable importance upon hearings conducted in connection with these violations, and the first offender has always been given an opportunity to profit by the suggestions and advice given by representatives of the Department at authorized hearings before prosecution proceedings are commenced. Approximately 85 persons have been called into hearings because of violations of the Apple Grading Law, and only two prosecutions have resulted. There has been a tendency among many of our apple growers and dealers to overface their packages of apples, placing the bigger and better fruit on top of the container. Possibly two-thirds of our violations are concerned with packing of apples, wherein the face did not represent the contents.

CORN BORER LAW

Considerable progress has been made in the enforcement of our Corn Borer Law and several hundred first offenders have been called to hearings where the provisions of the law were explained to them and advice given to them relative to the best method of controlling the corn borer in their particular case. It has been

our policy to bring second offenders into court and this past year our record of no prosecutions is indicative of the effort made by our corn growers to comply with the law.

THE FARM PRODUCTS GRADING LAW

Our Farm Products Grading Law is a permissive law, in that the producers voluntarily request permission to use certain legal grades, and in the event that they are authorized to use the grades, they must then conform with all the grade requirements. The law gives to the Commissioner of Agriculture the right to revoke or suspend the permission to use the grades in the case of wrongful use. During the past year it has not been necessary for this Department to revoke or suspend a single authorization. Several persons have been warned that their graded products must conform more fully to the requirements of grade, and in all cases there has been an immediate response to our suggestion for better quality products in the labelled containers.

THE OLEOMARGARINE LAW

Our inspectors are constantly on the alert relative to the violations of our Oleomargarine Law, and are, at frequent intervals, watching the activities of certain peddlers and dealers in our large cities. With the price of butter at a low level, there is not quite the stimulus to enter into the business of illegally selling oleomargarine. We are confident, however, that no considerable amount of oleomargarine products will be sold in this State unless the provisions of our Oleomargarine Law are complied with.

THE SEED LAW

Our Seed Law, which has been in operation for three years, has resulted in the sale of better quality seed throughout the State. Our inspectors have collected approximately 500 official samples during the present year, and these samples have been tested and analyzed at the seed laboratory of the Massachusetts Agricultural Experiment Station at Amherst. The official bulletin of the Massachusetts Agricultural Experiment Station will be published within a short time, and it will be the policy of this Department to call into hearings parties selling seed in this State where the labelled analysis differs to any considerable extent from the analysis found by our seed analyst.

INFORMATION ON GENERAL LAWS

The enforcement of our other laws have not necessitated much regulatory action in connection with their proper compliance. Occasionally there has been a hearing on account of damage in connection with apiary inspection or the unlawful transportation of uninspected nursery stock. These apparent violations are occasioned through lack of knowledge on the part of the parties concerned, and it has been our policy to explain the law in these instances and suggest such cooperation from them in the future that violations of this kind will not occur.

Though most of the regulatory laws administered by the Department contain clauses providing for the punishment of offenders, the Department's enforcement policy emphasizes service rather than punishment. Sometimes, of course, legal action is necessary. In most cases, however, the purpose of the law is fulfilled not by a mechanical enforcement of its provisions, but by an educational and helpful policy which assists producers and all others concerned to comply with its requirements.

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The Commonwealth of Massachusetts

ANNUAL REPORT

OF THE

Commissioner of Agriculture

FOR THE

Year Ending November 30, 1931



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The Commonwealth of Massachusetts

DEPARTMENT OF AGRICULTURE

To the Honorable Senate and House of Representatives:—

In compliance with the provisions of Chapter 128 of the General Laws, I am herewith making my annual report for the year ending November 30, 1931, for the Department of Agriculture.

Respectfully submitted,

A. W. GILBERT, *Commissioner*.

PERSONNEL OF THE DEPARTMENT

COMMISSIONER OF AGRICULTURE—DR. ARTHUR W. GILBERT, BELMONT

ADVISORY BOARD APPOINTED BY THE GOVERNOR AND COUNCIL

- LESLIE R. SMITH OF HADLEY, Term expires November 30, 1933.
 GEORGE E. TAYLOR OF SHELBURNE, Term expires November 30, 1933.
 JAMES O'BRIEN OF LEE, Term expires November 30, 1931.
 HERBERT N. SHEPARD OF WARREN, Term expires November 30, 1931.
 JOHN BURSLEY OF BARNSTABLE (WEST), Term expires November 30, 1932.
 STUART L. LITTLE OF NEWBURY, Term expires November 30, 1932.

DIVISIONS AND ORGANIZATIONS

- DAIRYING AND ANIMAL HUSBANDRY—*Director*, JOSEPH C. CORT, READING.
 MARKETS—*Director*, LAURENCE A. BEVAN, NEWTONVILLE.
 ORNITHOLOGY—*Director*, DR. JOHN B. MAY, COHASSET.
 PLANT PEST CONTROL—*Director*, R. HAROLD ALLEN, TAUNTON; *Assistant Director*, QUINCY S. LOWRY, CANTON.
 RECLAMATION, SOIL SURVEY AND FAIRS—*Director*, L. B. BOSTON, AUBURNDALE; *Assistant Director*, A. W. LOMBARD, ARLINGTON.
 AGRICULTURIST—DANIEL J. CURRAN, MARLBOROUGH.

STATE RECLAMATION BOARD

- Chairman*, EDWARD WRIGHT, DEDHAM
 L. B. BOSTON, AUBURNDALE
 GEN. RICHARD K. HALE, BROOKLINE
Secretary, GEORGE R. STRATTON, HOPKINTON

REPORT OF THE COMMISSIONER

Agriculture in Massachusetts is confronted at this time with numerous problems of readjustment. For the past two years, there has been a downward trend in prices, both for manufactured commodities and agricultural commodities culminating in a world-wide general depression which has apparently reached a most acute stage.

Widespread unemployment, reduced purchasing power and the lessening demand which generally accompanies such period has reflected itself in very low prices for most agricultural products during the year 1931.

In Massachusetts our problem is serious, but our farmers are in a better position to withstand the shock of this great depression than many other states. The values of our farm lands were never inflated to the extent of other states. Our farming is specialized, but not as highly specialized as certain states in the middle west and in the southwest. A large proportion of our farmers are raising a variety of food products that give to them a very substantial part of their food requirements for living. Others of our farmers are engaged in two or more specialties and when one cash project is greatly weakened by market conditions, there is a remaining cash project that permits our Massachusetts farmer to carry on effectively.

The nearness to populous markets presents a distinct advantage to our local farmers. Our investigation and study indicates that our farmers near these large consumer markets are receiving a better price for their farm products than producers at greater distances. The cost of transportation, the extra expenses connected with packing and grading products for distant shipments are factors that influence this price equation. Our farmers will continue to enjoy the advantages of local markets so long as they furnish the consumer with a quality farm product at a fair price.

It is true our real estate taxes create a very heavy burden on the farmer. Our rural communities, however, are most sincere at this time in their efforts to reduce their budgets, and in this way lower taxes that now fall heavily upon the land.

We are in the midst of a period of driving competition and our farmers are making honest effort to organize to meet this competition. They are making every possible reduction in overhead in labor and in other costs of production and in many instances are marketing their crops under co-operative organizations. The Massachusetts farmer has organized his farm and his work upon a basis of most economical production, and at the present time he is probably in a position to successfully weather the remaining period of the depression that now exists. He has practised denials in the past and the matter of living frugally for a period of a few years does not bring to him the same apprehension that might naturally come to other workers who have prospered during the fat years of industrial activity and have not learned the lesson of strict economy as a program for the lean year.

The continuing ability of our farmers to withstand and effectively combat this period of depression will undoubtedly give courage to other less fortunate workers to the end that the people of Massachusetts may emerge from this period undaunted and ready to go forward toward the goal of greater accomplishment.

LIST OF FARMS FOR SALE AND SUMMER VACATION FACILITIES

Among the most important services which the Department renders are the issuance each year of two bulletins listing Massachusetts farms which are for sale and farm homes which desire to take a few summer boarders. This service has become increasingly popular. The demand for farms and homes in Massachusetts is increasing. Farmers, particularly those living in the West and South, are looking to New England for their future homes. In general, land is lower in price here and the facilities for marketing their products are much better. Our lists are in great demand. Thousands are sent each year to every State in the Union. It is difficult to enumerate tangible results but we are reasonably sure that hundreds of farm owners and new buyers are brought together each year.

Likewise the numbers of farmers and their wives who earn considerable sums through the rental of rooms in summer are increasing.

Many school teachers, mothers with young children and others prefer to rest in the shade of an old-fashioned elm, enjoy fresh food and breathe fresh country air. The cost of a summer respite is often reduced.

As this movement grows, farm homes become increasingly more modernized and better equipped. The possibilities of mutual helpfulness are almost unlimited.

RECIPIENTS OF AWARDS FOR AGRICULTURAL ACHIEVEMENT

The Advisory Board constitutes a Board of Awards who select each year from a large list of recommended candidates, five or six persons within the Commonwealth who have made some outstanding contribution in agriculture and rural life.

For this year the following were chosen and will be presented with their honors at the Union Agricultural Banquet in Worcester on January 7, 1932:

Harry A. Ford, Community Service, Dalton.

Harvey F. Tompson, Market Gardening, Seekonk.

Mrs. Barbara E. Goff, Community Service, North Grafton.

Douglas J. Hayes, Duck Raising, Sterling.

Marjorie Armstrong, Club Work, South Braintree.

Gordon M. Cook, Club Work, Hadley.

REPORT OF DIVISION OF DAIRYING AND ANIMAL HUSBANDRY

MILK QUALITY IMPROVEMENT WORK

A program for the improvement of the quality of milk produced on Massachusetts farms was conducted by taking samples of the milk as it was brought into the plants of 384 dealers located in forty-nine cities and towns. The purpose of this work is to determine the quality of milk produced, to improve the practices in the production of milk, decrease the losses resulting from low quality milk, and to extend the market by stimulating consumption through the production of high quality milk. The samples taken were tested for keeping quality by the methylene-blue test, which gives an approximation of the bacteria count, and by the sediment test, which gives an indication of the amount of visible sediment in a pint of milk. In a few cases butter fat tests and total solids were also taken, as well as temperatures. The results of these tests are returned to the farmers on quality test report cards. When possible, the farms producing the poorest quality milk are visited and assistance rendered in determining the cause for the poor condition of the milk. An attempt has been made to interest milk dealers in carrying on similar work so that a permanent improvement may be affected.

In several instances plans have been worked out with dealers to put their producers on a basis of payment for quality, rating them according to kind of milk they actually produce. The result of this practice is to encourage the production of clean milk with a low bacteria count. Local boards of health, county agricultural agents, and milk dealers have been active co-operators in this quality milk improvement project.

MILK DEALERS' FINANCIAL REPORTS

For the third year financial reports have been required from milk dealers purchasing milk from producers of milk in the Commonwealth. A larger list of dealers was circularized and more reports submitted up to November 30 than during the previous year. There was more demand for the information contained in the reports. Milk producers seemed to realize their value.

OLEOMARGARINE INSPECTIONS

A larger number of stores were inspected for compliance with the oleomargarine laws than ever before, but the number of minor violations was relatively small. The eastern half of the State was quite completely covered by the inspections, which totaled 6,896 in stores and 161 in restaurants.

HORSE CONTESTS

Assistance was again given in conducting commercial horse shows at Springfield and Boston, and also the dynamometer contest at Springfield and Worcester for the determination of the pulling power of draft horses. The entries were larger and the contests more keen than ever before.

SHEEP RAISING STIMULATED

Considerable stimulus was given to the sheep industry of Massachusetts by bringing from the West five carloads of western ewes, totaling between eleven and twelve hundred. This project was worked out through the cooperation of a committee of sheep raisers. The sheep were distributed mostly in small lots throughout the State. A few were sold to farmers in nearby States. The results for the most part were very satisfactory, as they were purchased on a low market and were distributed to the farmers at cost for prices far below the actual cost of raising them. In many instances the early lambs for the Easter market and the wool clip were sufficient to pay for the cost of these ewes.

Assistance was also given to many local farmers in disposing of their surplus sheep and lambs. The Easter market for lambs in the spring of 1931 was somewhat lower than the previous year, yet it was to the advantage of the farmers to sell his small lambs at that time rather than to wait for the summer or fall market. This offers one of the best possible outlets for Massachusetts produced lamb. Often the price received for the lamb is equal to more than the cost of the breeding ewe. There is a good opportunity for expansion on many Massachusetts farms by adding a small flock of sheep. The labor involved secures excellent returns.

MASSACHUSETTS WOOL POOL POPULAR

The wool pool for 1931 has proved of unusual interest as compared to previous years. Nearly 30,000 pounds of raw wool was received from approximately 250 producers scattered throughout the State. There were many new members in the pool owing to the fact that it offers the best means of disposing of locally raised wool at satisfactory prices.

All of the wool was made into virgin wool blankets which were returned to the farmers after the payment of the cost of manufacture and handling. A greater variety of colors and styles were manufactured than in previous years, which has added to the details of the management, but has resulted in greater satisfaction and better market for the finished products.

The actual return for raw wool marketed through blankets has been most excellent and probably represents a greater difference compared with the price received at the market for raw wool than ever before. The average return through the blanket plan is between fifty and sixty cents per pound on the raw wool basis, whereas the farmers were offered, by country buyers, between fifteen and eighteen cents for the wool at the time of shearing. The quality of the blankets is so superior and the price so reasonable that the consumer benefits as well as the producer.

POULTRY CERTIFICATION WORK

Fifty-three flocks were certified for the 1931 hatching season. All birds were banded after being inspected for productive capacity, health and vigor and reasonable conformity to standard requirements. Later in the season two other inspections were made of all flocks to check on the weight, shape and color of the eggs used for hatching. The total number of birds inspected was 54,395.

The 1931-1932 hatching season inspection work started in October, and up to November 30, 1931, ten flocks were inspected, containing 10,862 birds. Interest in the work seems to be as great as in former years. A large number of inquiries are received for the official list of certified breeders. A fee which covers the approximate cost of the inspection service is charged for this work.

GAME BIRD CERTIFICATION

During the year a new grade was established for game birds, principally pheasants and quails. This was done at the request of a group of game bird breeders, and the work will be along lines similar to that for certified poultry flocks, except that it is not based upon freedom from Pullorum Disease. Massachusetts Certified Game Bird Grades are as follows:

"Massachusetts Certified Game Bird Breeding Stock must meet the following requirements —

Inspected and leg-banded for:

- a. Quality of stock determined with inspection of birds and premises.
- b. General health and vigor of stock.
- c. Hardiness of stock based on source.

Massachusetts Certified Game Bird Hatching Eggs must meet the following requirement:

Produced only from Massachusetts Certified Breeding Stock.

Massachusetts Certified Baby Game Bird Chicks must meet the following requirements:

1. Produced only from Massachusetts Certified Hatching Eggs.
2. Normal and vigorous.

Massachusetts Certified Twelve-Week Old Game Birds must meet the following requirements:

1. Produced only from Massachusetts Certified Hatching Eggs.
2. Normal and vigorous."

MILK MARKET SURVEYS

The Division made extensive milk market surveys in New Bedford, Taunton, Plymouth, Northampton and Framingham at the joint request of milk producers and dealers in these markets. Statistical data covering receipts, sales, producers' prices, wholesale and retail prices, purchasing methods and relative milk consumption were obtained from the representative dealers supplying these various markets.

This survey material was of great assistance to the representatives of producers and dealers in working out adjustments in the price of milk in the New Bedford and Plymouth markets, and in furnishing dealers and producers with valuable information as to the amount of surplus milk on the Taunton, Northampton and Framingham markets.

MILK CONSUMPTION SURVEYS

In co-operation with the United States Bureau of Agricultural Economics and other agencies, a consumption survey of milk and dairy products was made in Metropolitan Boston. In addition, other milk consumption surveys were carried on in Holyoke and Framingham. All of these surveys indicated a reduction in the consumption of milk in 1930 compared with 1929. A more drastic decrease in the consumption of milk was found in Holyoke and Framingham than in Metropolitan Boston during this period.

SPECIAL COMMISSION ON DAIRY FARM INSPECTION

As provided by Chapter 49, Resolves of 1931, the Division rendered assistance to the Special Commission on Dairy Farm Inspection Laws. The director was appointed secretary to the commission and made all arrangements for hearings, meetings and inspection trips. Special investigators of the Division, working for the commission, collected, tabulated and summarized data relative to the problem of dairy farm inspection. This information was obtained by personal interviews with milk inspectors or members of boards of health, with Massachusetts milk producers and distributors.

REPORT OF THE DIVISION OF MARKETS

During 1931 the Division of Markets continued the program in assisting the farmer to improve local products so that they would reach the consumer in the freshest and most attractive manner.

Definite surveys of markets were made to find out what consumers desired, and inspections of farm products were conducted to see how closely they conformed to such demand.

At the same time the Division has continued its market reporting work which has been carried on for a dozen years and today is not questioned. Continually the Division is called upon to furnish information about food supplies and consumption of different kinds of foods in our cities, and so this year surveys have been made in several of our large industrial centers.

The only great change in marketing legislation dealt with the revision of the apple grading law. The change was toward a more voluntary use of grades, but not enough time has elapsed as yet to draw too definite conclusions about the effect of the new law.

One entirely new service was offered this past year which affects not only farmers but many consumers. This was the leasing of a sign by the Department of Agriculture to farmers' roadside markets that comply with certain standards.

GRADES AND STANDARDIZATION

In carrying out the projects outlined in the Massachusetts Farm Marketing Program regulatory work and educational work have been continued during the past year. Farms, retail markets, and wholesale markets have been visited at which inspections were made on produce carrying the state label. Grading demonstrations have been held in various parts of the state—talks and lectures have been given on various phases of the program—exhibits have been displayed at many of the major fairs and some of the minor fairs. Careful studies in marketing or grading have been made in order to determine the proper standards to establish, and lastly, publicity was given to the program for the benefit of the consumers as well as the producers. Radio programs were broadcast and newspaper articles disseminated. In brief, the program has been furthered more than in the previous year.

INSPECTION OF EGGS

Inspections of labeled eggs have been made at almost every farm in the State where the official label is used. Likewise retail stores and wholesale houses handling labeled products were visited as well. In all, approximately 300 inspections were made. The number of labels distributed during the past year showed a 50 per cent increase over 1930. Approximately 75 per cent of these labels went to men who used them before.

INSPECTION OF ASPARAGUS

Inspections of asparagus carrying the State label were made usually at the receiving market late in the evening. Inspections were made at least twice a week throughout the growing season and detailed records kept of the findings. The greatest value that an inspection service gives is the check up in the market of the grade and condition of the product. The inspector checks these two items and makes comments upon the appearance of the product. Very often he can show that slight improvements can be made in packing or grading that will make the product far more attractive to the buyers.

INSPECTION OF STRAWBERRIES

Inspections of strawberries were made mostly at shipping point. Car lots of berries were sent out daily throughout the season. All labeled berries were inspected at the loading platform.

This year at Falmouth instead of having the growers label their own crates, the association attached the labels only after the berries had been inspected. Field inspections were also made wherever necessary and individual grading instructions given.

According to reports from commission houses there has been a tremendous improvement in the grading of the crop in the past two years.

INSPECTION OF BLUEBERRIES

A proposed grade for blueberries was made for the Granville Blueberry Growers' Association. This grade was used during the season by twenty members. Records were also kept of the inspections made and individuals instructed accordingly.

This project was not entirely one of inspection. It was more one of finding out facts of grading blueberries to see if a grade could be established. It was pioneer work, since there are no federal grades established and the only State grades adopted anywhere are for blueberries for canning or for cultivated blueberries.

The results of the trial seem to show that the grade as written was suitable to berries when picked by hand, but not of much use when the berries were picked by a scoop.

By organizing and standardizing their product these blueberry growers have overcome problems which they could not have done as individuals.

ASSISTANCE GIVEN TO OTHER COMMODITIES

The Division of Markets assisted other organizations by designing labels for them and suggesting different forms of advertising material in the shape of posters and different inserts and pamphlets. Especial attention was given to this form of service to the Bay State Egg Producers and the New Salem Raspberry Growers, and the Worcester County Grape Producers.

As in other years, turkeys carrying the New England label were inspected both at the farms and in receiving markets.

VARIOUS MARKET SURVEYS

At the request of a New England committee this Division assisted in making a survey of the live poultry marketing situation in Boston and adjacent shipping territory. It was found out that the Boston market is quite limited in its demand and that New York dominates the price for live poultry from our Massachusetts farmers.

Complaints have been received from time to time relative to the quality of eggs sold at roadside stands so that a check up was made of over 100 stands in the eastern part of the state. Eggs purchased from these stands were candled and weighed. The results show that the quality of most of the eggs was good and that although complaints were justified in some cases, on the whole the eggs were of good quality. However, purchases made of other eggs at such stands which were competing with the Massachusetts Specials showed that the eggs carrying the official grade mark were far superior to the former lots.

During the fall there was much interest by rabbit producers in the question of marketing their product and the Division co-operated with them in conferring with buyers, commission merchants, stores and restaurants to see if the market for rabbit meat could be increased. Results of interviews showed that certain improvements in packaging would need to be made and that other meats furnished such competition that a substantial increase in rabbit production would be questionable at present.

CHANGES IN APPLE GRADING LAW

The many changes in the Apple Grading Law, which were enacted by the 1931 legislature and which became effective July 7, made it necessary to carry on an extensive educational campaign during the summer and fall months in order to acquaint growers, packers, and dealers with the new requirements of the law.

Representatives of this Division gave demonstrations and talks in practically all the important apple districts of the State. Representatives of the United States Department of Agriculture assisted at these meetings in explaining the United States grades, which are now a part of the State grading law.

The complete law, regulations and definitions were distributed in printed form to all commercial apple growers and dealers. In addition to the printed copies, a chart was prepared and distributed, which described in graphic form the limitations of each grade.

This chart was an outstanding feature of the educational campaign connected with the introduction of the new grades. So far as known, it is the first time that such a realistic method has been employed in the explanation of apple grade terms. This Division is greatly indebted to the Massachusetts State College for valuable assistance and advice in connection with the technical details involved in the make-up of the engravings. Indicative of the popularity of this type of chart is the fact that New Hampshire, Rhode Island, and Connecticut rented the engraved cuts for use in preparation of similar charts in their respective states.

Supplementing the demonstrations and meetings referred to above, a combined inspectional-educational service was conducted throughout the packing season in eastern Massachusetts and in Franklin County. A resident inspector, stationed in each of these districts, devoted his whole time to visits to orchards and packing houses for the purpose of assisting growers in their grading and packing problems.

Inspection work has been carried on at city markets and in cold storage warehouses as usual.

FEDERAL-STATE SHIPPING POINT INSPECTION

In response to the urgent demand of apple growers, a co-operative agreement was entered into in July with the United States Department of Agriculture for the conduct of federal-state shipping point inspection of apples covering the issuance of official certificates showing quality and condition of the apples as inspected at shipping points. Four other New England states, viz., Maine, New Hampshire, Vermont and Connecticut, joined Massachusetts as State participants in the agreement, thereby putting this project on a New England wide basis.

Under the terms of this co-operative plan the Federal Department agreed to furnish and pay travel expenses of a supervising inspector. The states agreed to pay the salary of this supervisor and also to pay a small per certificate charge for each inspection. The states furnished and paid the inspectors serving under the supervisor, and, in turn, received the fees for the issuance of certificates.

This service was planned primarily for the purpose of expediting the movement of New England apples intended for export to foreign countries. Export shipments of New England apples, however, were greatly curtailed because of the rigid restrictions maintained by Great Britain and Germany against apple maggot. Furthermore, the unsettled financial conditions abroad, particularly the depreciated value of the British pound sterling, were also very effective in limiting the foreign outlets for local apples.

Consequently the demand for shipping point inspection was much less than would have been the case under normal crop and economic conditions. Nevertheless, the maintenance of this service during the past season has been of much value from an educational point through the better knowledge that growers have, thereby, acquired concerning federal grades. All the New England participants in this project hope to be able to carry it on during the coming season.

Onion growers of the Connecticut Valley requested shipping point inspection of their product and the Division furnished this for them for the season, co-operating closely with the special Connecticut Valley Onion Committee. The detailed arrangements were handled by the Springfield office of the Federal Department of Agriculture and nearly one hundred carloads of onions were inspected with certificates written for them.

RADIO MARKET NEWS SERVICE

The Massachusetts Department of Agriculture is co-operating with the United States Department of Agriculture, other New England States, and WBZ station for combined radio agricultural market reports. Talks on

timely subjects are concluded, with reports covering the market terminal; the market for fresh dressed meats; the wool market; the receipts of poultry, butter, and eggs at Boston, the New York market for potatoes, onions, butter and eggs and the Chicago market for butter and eggs. Carload shipments of the more important crops are also given.

The evening broadcasts include reports covering the Boston markets for fruits and vegetables; butter; eggs; wool; hay, grain and feedstuffs; live-stock; the important Connecticut markets; Springfield, Worcester, and Providence produce markets: Presque Isle potato market, and such other information as may be available and of value.

In addition to arranging and carrying out the daily programs over WBZ, WBZA, and the short wave station WIXAZ, which carries out programs to more distant points, material was secured or prepared for use over station WGY. This consists of a mid-week and week-end summary of the Boston wholesale markets for agricultural products, material from the Massachusetts Department of Agriculture and the Massachusetts State College, which is used alternately Fridays, and monthly reviews.

MARKET REPORTING

Wholesale market news service covering the daily reports on supply and prices of fruits and vegetables on our three principal markets, Boston, Worcester, and Springfield, was continued throughout the year. Special effort was directed towards giving as complete information regarding market conditions of these products as possible.

SPECIAL APPLE MARKET REPORT

The Special Apple Market Report was issued through the winter and spring months and resumed with the beginning of the local crop season in August. Due to further insistent demand for more frequent reports early in the season, the twice-a-week service which started last year in September, was this year advanced to the third week in August.

The number of paid subscribers to this service has shown a further advance during the past season, reaching a new peak, slightly larger than last season's previous high mark. It is a fine commentary on the usefulness and popularity of these reports that this increase in subscribers has taken place despite the fact that the Massachusetts apple crop was only one-third as large as the previous year, and notwithstanding the depressive effect of general business conditions.

RETAIL PRICE REPORT

The Boston Weekly Retail Price Report was issued regularly, based on data collected in Boston and close vicinity. Special attention was given to New England and locally produced products. The report is used by home-makers and others buying in retail quality, newspaper and magazine household sections, home-maker hour radio broadcasters, schools, college economics departments, producers selling direct to consumers, markets and research agencies.

CO-OPERATION WITH OTHER AGENCIES

To make progress on our agricultural problems the best efforts of all agencies are needed and if close co-operation can be maintained with all of them, our agricultural situation will be benefited. The Division of Markets enjoys such pleasant relations with both official and private organizations in carrying out marketing work.

Much of the work relating to grading is educational and so the State Department of Agriculture works closely with the extension service along all marketing lines. Also in connection with the different types of research work carried out by both the Experiment Station and the local office of the United States Department of Agriculture.

The Division of Markets has also worked with the Boston Market Gardeners' Association, the Massachusetts Fruit Growers' Association, the Farm Bureau, the Grange and local farm groups.

STATISTICAL INFORMATION

Since 1923 the annual bulletin "Receipts and Sources of Boston Food Supply" has been published and has been used by research workers and students in marketing, teachers, housewives, farmers and various marketing agencies or middlemen. The report is a summary of the receipts and sources of the most important foodstuffs coming into Boston.

BOSTON WHOLESALE AND RETAIL REPORT

So many requests for information come to this office for the trend in receipts of apples in Boston and also the range in prices over a period of years that the Division of Markets summarized in detail such information. There is, therefore, on file the number of bushels of apples received weekly from the principal apple producing sections of the United States. This information is sorted so that the volume that these specialized producing sections ship is known and the time of year of such shipments. Many requests are received from growers of vegetables for average prices of these commodities and for the volume of weekly receipts. For the first time, therefore, a summary of the weekly prices and weekly trucked-in receipts of the major kinds of vegetables on the Boston market has been prepared. The total volume of such products goes beyond 5,000,000 bushels and the average value is over \$4,000,000.

ROADSIDE STAND SIGN

In 1928 the Division of Markets made a careful analysis of roadside stand selling which brought out clearly the standpoint of the consumer. Consumers desire fresh products and wish to know which stands sell locally grown products.

Stand owners realizing the problem facing them also wanted some method of identifying real farm-owned stands and asked the Department for assistance. A plan was then prescribed to farm roadside market owners for their consideration.

This program was essential that they might lease a sign from the Department of Agriculture, provided they lived up to certain regulations. These regulations had to do with the origin of the products they sold, the appearance of their stand, and the quantity of their goods.

Fifty-five stand owners leased the sign for the season and have reported that it was of value to them in selling their goods.

The Department had three inspectors who visited all the stands at intervals and not only checked up on the regulations, but gave suggestions to stand owners which resulted in many improvements.

MARKET SURVEY IN FIVE CITIES

During the last half of 1931 several Massachusetts cities were studied briefly in order to obtain a picture in each of the cities of the prevailing food marketing conditions.

With the exception of milk records kept by the city departments of health, there are practically no available records of total amounts of foodstuffs received or distributed in the cities surveyed. The city departments of public welfare and health and outside social service agencies usually reported the extent of donations for food to the needy, and representatives of these organizations being in close contact with hundreds of consumers were able to contribute much other information concerning consumption and buying habits and the restrictions governing the use of grocery orders which are the means commonly used in supplying food to the applicants.

Wholesalers and retailers were the chief informants regarding current practices in buying, selling, and distributing the bulk of the foodstuffs used in supplying the individual cities. These men and women frequently related personal experiences in the market, often covering periods of twenty years or more, and from them the investigator learned of the changes taking place in the distributing customs of the city, trends in the demands of quality, package, etc., and of most importance, their opinions and reactions

concerning the locally grown products--the products themselves and the part local producers play in meeting the demands of the buyers. Throughout, special attention was paid to all factors directly or indirectly affecting or concerning the consumption of the local products. If there seemed to have been a decided increase in consumption of western dressed poultry as against the locally dressed birds, reasons were sought. Was decreased consumption of locally dressed poultry due to less local production, change of economic conditions of consumers, lessening quality of the local product, buying inconveniences to the market man himself, or what? If a wholesale house claimed to handle only a few native potatoes now as compared with hundreds of sacks ten years ago, although potato production in the locality showed a steady increase, the investigator attempted to learn the causes; was the decrease in the handling of the native stock due to a decrease in the total potato handlings of the company, or to poor quality or slack grading of the natives as compared with the shipped-in potatoes, or to what was it due?

In cities having a farmers' market, the market was studied from various angles, the location of the market place in relation to the food distributing business houses of the city, the advantages and disadvantages to both buyers and sellers using the farmers' markets often brought forth criticisms and some constructive suggestions which were summed up in the reports of the brief studies of each city.

Although it is impossible without extensive and detailed research to determine the amount of foodstuffs coming into the cities studied, a fairly concise outline of the principles of food sources and distribution was obtained in each city with considerable pertinent information, particularly such as related to locally grown products. During the course of each study, the prevailing retail food prices were observed and compared with the quotations on the Boston Retail Price Report in order to make an estimate of the relative food costs to the consumer.

REPORT OF THE DIVISION OF ORNITHOLOGY

The work of the Division of Ornithology now covers a much wider field than was anticipated when first organized, and it has increased correspondingly in importance. The work is not only confined to such matters as the distribution and feeding habits of birds, but to such related subjects as the location and management of bird sanctuaries, the rearing of game birds and animals, the control of injurious insects, rodents and predators, methods of protecting and increasing beneficial forms of wild life, the identification of birds, mammals, insects, and even snakes, and of wild plants, including their fruits and their value in attracting birds. The effect of birds in controlling insect pests is, of course, of major interest to a great many agriculturists, and is the subject of many inquiries.

BIRD HABITS REPORTED FROM WIDE AREA

Several hundred reports are received each month from bird observers on the status of the feathered population coming under their observation. While most of these reporters write from Massachusetts or adjoining states, there are regular correspondents from points as remote as Canadian Labrador, South Carolina, California and Alberta. The mass of interesting data thus made available is digested and condensed into a monthly bulletin called "Items of Interest," which is mailed to regular correspondents and others. This bulletin is also sent to many newspapers in the States and in Canada, many of which quote from it regularly. Each issue contains a brief resume of the weather of the preceding month, notes on the abundance and distribution of the different species of birds and on their habits, reports of the activities of bird-banders, and notes on the conservation and protection of birds.

BIRDS IN RELATION TO THE CRANBERRY INDUSTRY

During the past year considerable time has been spent in a study of the relation of birds to the cranberry industry, one of the most important

branches of agriculture in Massachusetts. Field studies were made of the feeding habits of many birds at cranberry bogs, including stomach examinations of birds collected. In this investigation the Department worked in co-operation with the Massachusetts Cranberry Experiment Station, and was also assisted by workers of the New Jersey Cranberry Experiment Stations. As a result Department Publication No. 133, "The Cranberry Growers' Interest in Birds," was prepared and printed for free distribution among cranberry growers in the State and to others interested.

COLORED BIRD PLATES AVAILABLE

The Legislature of 1931 passed a resolve authorizing the printing of an edition of 10,000 sets of the colored plates of the "Birds of Massachusetts." These valuable illustrations will soon be available to the public at a nominal cost. Public documents Nos. 112 and 116 on "Bird Houses" and "Methods of Attracting Birds" were also revised and new editions printed for general distribution.

INCREASING DEMAND FOR BIRD INFORMATION

The Division still handles much correspondence relating to the three-volume work on the "Birds of Massachusetts and Other New England States," sale of which is handled by the office of the Secretary of the Commonwealth. The Department of Agriculture recently mailed several thousand circulars regarding these volumes, with the result that the sale of these books jumped more than five hundred per cent in three weeks' time.

As has been customary in the past, representatives of the Division fill numerous lecture engagements on birds before Granges, Girl Scouts, Boy Scouts, Campfire Girls, and similar organizations, and in schools. The economic value of birds is always stressed in such lectures, as well as methods of protecting and increasing the bird population.

REPORT OF THE DIVISION OF PLANT PEST CONTROL

BENEFITS OF NURSERY INSPECTION

The Massachusetts nurseries are at this time in excellent condition and recent inspections have shown them to be apparently free from insect pests and diseases. All crop producers, of which the nurseryman is one, soon learn that their greatest hazard is damage or destruction of their crops by pests. The inspection of nursery stock is designed to prevent the sale of stock infested by insects or disease, liable to kill or seriously injure it. The inspection benefits the nurseryman in that it calls to his attention infestations that might result in serious loss. At the same time it protects the public and assures it of purchasing only good clean stock. There are more nurseries in Massachusetts now than ever before. Many of these are small, but with the opportunities offered in this healthful occupation and the chance of disposing of ornamental stock in thickly populated areas near home, it is not surprising that more lovers of horticulture are taking up this line of work.

CERTIFICATES AND LICENSES GRANTED

The Division of Plant Pest Control has this year issued 332 certificates to growers of nursery stock, and 294 agents' licenses to persons dealing in nursery stock but who are not growers. The conditions in the nurseries hold true in the properties adjoining them, and these have shown a marked improvement in the past five years.

Infestations of the gypsy moth were practically negligible in the nurseries, and consequently we were able to complete our inspections and issue all certificates at an early date.

CORN BORER QUARANTINE EXTENDED

The European Corn Borer quarantine has been extended westward to include most of Franklin, Hampshire, and Hampden Counties. The infestations of the two-generation corn borer in these counties are extremely light, and it is hoped that control measures will be successful in keeping the damage at a minimum.

Parasites which have been imported have become established and will without doubt prove to be a determining factor in controlling the ravages of this pest. Until, however, these are present in larger numbers, we must rely largely on artificial control measures. Our program of inspection, plowing and burning, has been very vigorously enforced, and the results have been very encouraging. On December 1 the Division had fifteen inspectors in the field to report all violations of the corn borer law—where corn stubble has not been destroyed. The violators were called into hearings where each case was reviewed and educational instruction given.

RECOMMENDATIONS FOR CORN BORER CONTROL

On account of the practice to seed in cover crops in corn fields, especially in central and western Massachusetts for the purpose of establishing a crop rotation, the Department of Agriculture made the following recommendations with reference to corn borer control:

1. Modern cutting appliances that will cut corn stalks at the ground level should be used in all cases where seeding in corn fields is practised, and any corn field must be free from corn stubble to obviate the necessity of fall ploughing.

2. Clean culture practices with reference to weeds and other plants ordinarily infested with the corn borer should be followed in an organized effort to maintain effective control of the corn borer.

The provisions of the present Corn Borer Law, requiring that all corn stubble be ploughed under or otherwise destroyed on or before December 1 of the year of its growth shall be enforced, and only in cases where corn stalks have been cut to a ground level, leaving no determinable corn stubble, shall the necessity of fall ploughing be obviated.

The Division has co-operated with the Federal Government in maintaining a corps of inspectors in the Boston and Worcester produce markets, and also at designated points where the quarantine is enforced.

JAPANESE BEETLE CONTROL MEASURES

The area quarantined for the Japanese Beetle in Massachusetts at the present time includes all of Bristol County and parts of Plymouth and Hampden Counties, and the City of Boston.

During the past summer, 1,200 traps were used in the City of Boston. These traps were baited with geraniol, a substance that is attractive to the beetles. Traps were also placed in Attleboro, Brockton, Cohasset, Falmouth, Hyannis, New Bedford, Plymouth, Sandwich, Springfield, Wellesley, and West Springfield, a total of 5,350 traps being used. A greater number of beetles were collected this year than in 1930, but only one additional infestation was found, that in the City of Taunton, which is already in the area under quarantine.

Soil treatment was carried on in Springfield; the Charlestown Navy Yard; Boston Common; and in the Boston Public Gardens. This treatment was in the nature of applying arsenate of lead to the soil in the hope of building up an immune soil.

All nurseries within the area quarantined are obliged to attach a Federal tag to shipments consigned to outside points, and a record kept of each tag used. This is a serious handicap, especially during the busy season. The quarantined area in Hampden County has been considerably reduced, and at present the larger nurseries in the county are outside the area.

The quarantined regulations prohibit the shipment from the infested areas of green corn on the cob; beans in the pod; bananas in entire bunches or in clusters of twenty-five or more; apples, peaches, or berries from June 15 to October 15, unless a permit or certificate is attached. The regulations also prohibit the shipment of nursery, ornamental and greenhouse stock, and all other plants including parts of plants and cut flowers, and sand, compost, and manure to points outside the area except under certification. No restrictions, however, are placed on the movements between October 16 and June 14 of cut flowers or plants without roots.

It is fair to assume that the infestation of Japanese Beetle in Massachusetts will increase, but we believe that with our present knowledge of control measures, and with the aid of parasites, we will be able to cope with this pest without serious loss to our agricultural interests.

DISTRIBUTION OF BEES ON INCREASE

The use of bees in fruit orchards during the blooming season, as has been outlined in the two previous annual reports, continues. Without available figures it appears that an even greater number of packages of bees were bought in 1931 by orchardists. It has been variously estimated that in excess of a half ton of bees are brought north for orchard purposes. These package bees are obtained exclusively from southern apiaries, being unobtainable in May from northern sources. By some orchardists, they are preferred to colonies of bees. There seems to be a growing interest, however, in the use of colony bees. But the local supply is sufficient in most orchard regions; hence, package bees will doubtless be needed for some years to come. There is a definite trend with the active beekeepers to prepare apiaries for rentals to orchardists. Some apiarists rent first to orchardists in early season and then to cranberry growers at a later season. The interest in this phase of beekeeping seems to be growing, but must be greatly expanded in order to meet fully fruit growers' requirements.

INSPECTION OF APIARIES

The center of intensive apiary inspection in 1931 was Middlesex and Essex counties. An extra appropriation of \$500 was available to assist particularly in the work in Essex County. Excepting in a few towns in Middlesex County, which could not be reached before the appropriation was exhausted, practically every apiary known to the Department was visited, and all colonies examined. Many apiaries, heretofore not recorded, were located. This intensive inspection had the sanction of the beekeepers' societies, county agents and farm bureaus of Middlesex and Essex Counties, who co-operated to their utmost. Throughout the area, a letter of warning, requesting co-operation, was sent out in May to each known beekeeper. In late May and early June the inspectors went into the field. Each inspector worked under prescribed and uniform instructions. The procedure was essentially the same as reported in 1930 and as used in the Worcester County area.

As was annually anticipated, American foulbrood was the chief bee disease encountered. So little European foulbrood is now found in Massachusetts, that it may be considered almost negligible. This is due in part to a better understanding by the beekeepers and in part to the more general use of good Italian stock, which, of course, is highly resistant to European foulbrood. American foulbrood cannot so easily be disposed of. Its tenacity is more baffling to the beekeepers. Its prevalence was unmistakably pronounced in Essex County, where less eradication work has heretofore been done. Through the splendid co-operation of the beekeepers, however, the situation in this county and in Middlesex County would appear to be well in hand. Improvement should be noticed in 1932, when it is hoped that it will be possible to still further suppress the disease in these counties. Then, they should more nearly approach in freedom from disease, the counties westward, in the State. The Department has been voluntarily and repeatedly praised for its work in Middlesex and Essex Counties.

Consistent with the large area under intensive clean-up check was maintained on conditions in other parts of the State. No serious situations were encountered nor new outbreaks discovered. The improved condition of the western counties, previously reported, appears to have been maintained. Conditions found south of Boston, with the exception of one limited area on Cape Cod, showed no new developments. The Cape Cod outbreak appears under control and confined. The next area which should receive intensive work by the Department, as soon as funds can be procured, includes Norfolk, Bristol and Plymouth Counties. These may be worked to advantage as a

unit from the north, where much preliminary work has been done, southward. The State then will have been thoroughly covered, except in Cape Cod and the islands, where there are very few beekeepers and colonies of bees.

The Inspector of Apiaries and deputies have attended many beekeepers' meetings where they have usually spoken. The apiary inspectors for the year 1931 were as follows:

Inspector of Apiaries, Burton N. Gates, Worcester.

Deputy Apiary Inspectors:

Mr. Fred E. Challet, Northampton

Mr. H. Shuman, Billerica.

Mr. F. S. Devereux, Green Harbor.

Mr. John Van de Poele, Abington.

Mr. B. A. Hildreth, Sherborn.

Mr. H. L. Walton, Worcester.

Mr. Ivan Rawson, Pittsfield.

WHITE PINE BLISTER RUST WORK

The Division has maintained its co-operation with the United States Department of Agriculture, local property owners, and other State Departments owning forest lands, in the endeavor to prevent further damage to the white pine trees of the Commonwealth, as a result of the prevalence of the fungous disease known as the white pine blister rust. This disease, which passes a part of its so-called life cycle in the tissues of the leaves of currant and gooseberry bushes (*Ribes*), is known to have damaged white pines in 329 of the 355 cities and towns in Massachusetts, according to our records to the close of the present fiscal year.

The temperature, humidity, and rainfall conditions during the field season from April to October, inclusive, were very favorable to an unprecedented development of the disease, at least on the *Ribes* host plants. These conditions will, undoubtedly, result in an increased evidence of the rust on white pines in those sections of the State where *Ribes* still persist.

During the year, the efforts of the personnel of the Division were about equally divided between the task to destroy all wild and cultivated *Ribes* in the white pine growing sections of the State, and the special project involving the complete elimination from the entire State area of European black currants, a variety of *Ribes*, particularly susceptible to infection. In the regular control work, 115,529 acres of land were examined, and 264,215 wild *Ribes* were found and destroyed. In this work 6,658 *Ribes* under cultivation were uprooted as a further protection to nearby white pines. The Division co-operated with 383 individual property owners, and three other State Departments in this protective work. In the special project relating to the elimination of black currants, it was necessary to examine 141,342 properties in the 103 cities and towns canvassed during the year. On 1,330 of the locations inspected, plantings of black currants were found and destroyed. These garden plots contained 11,716 such plants. In this special project 41 per cent of the individuals who possessed black currants removed them voluntarily.

During the regular spring inspection of the white pine producing nurseries in the State, the disease was apparently still in existence in but two nurseries. The surroundings of three pine producing nurseries were re-examined, in order to maintain adequate *Ribes*-free conditions and thus insure the continued production of disease-free white pines in our Massachusetts nurseries. In these examinations, conditions were found to be very satisfactory, and a mere 31 wild *Ribes* were found in all the areas examined. It was also gratifying to note that in these instances at least there had been no replanting of cultivated *Ribes* in the sanitation zones.

PERMITS GRANTED

In connection with the Federal quarantine relating to the interstate transportation of *Ribes* and five-leaved pines, 89 permits were issued from this office, allowing the entry into Massachusetts of 1,254 currant bushes, and 443 gooseberry bushes. In addition, 12 permits were granted to accompany

incoming shipments of 2,825 white pine seedlings or transplants. One permit was issued to cover a shipment of white pine branches for use in Christmas greenery.

At the close of the 1931 field season, initial examinations for Ribes had been practically completed in the principal white pine growing districts of the State and approximately three-fourths of the State area had been canvassed in connection with the black currant elimination project. Although the work which has already been done has been effective in temporarily checking the spread of the disease, and thus preventing for the time being increased damage to white pine, field experience and experimental work during the initial program, have demonstrated that there is a continuing problem in maintaining adequate control. This results from the recurrence of wild Ribes in control areas and an occasional instance of replanting of cultivated Ribes. This will necessitate the re-examination of areas where conditions favorable to a continued spread of the disease appear to exist. Such check-up work can only be accomplished under some sort of guidance such as has been furnished by this division and the representatives of the co-operating Federal office, during the initial control effort.

The co-operative blister rust control activities of the year have been planned and supervised by Messrs. Earle M. Brockway, William Clave, G. Stanley Doore, William T. Roop, and Ralph E. Wheeler, under the direction of Mr. C. C. Perry, who represents this Division and the Bureau of Plant Industry of the United States Department of Agriculture under a formal co-operative agreement.

Mr. C. C. Perry has had the supervision of the white pine blister rust work and his assistance and co-operation at all times have been greatly appreciated.

REPORT OF THE DIVISION OF RECLAMATION, SOIL SURVEY AND FAIRS

RECLAMATION WORK

There have been several requests relative to the reclaiming of farm lands for agricultural purposes which the Department has answered either by personal visitation or by correspondence. For the most part, however, there seems to be comparatively no interest in or need for further reclamation work as it relates to the utilization of waste lands. Greater need seems apparent in the better use of lands already in crops or the better adaptation of such lands in other crops. The report of the State Reclamation Board in another section of this bulletin will give more in detail the work that has been in progress during the year in the drainage of marsh areas.

SOIL SURVEY ACTIVITIES

During the year there were several requests for specific soil survey reports of work already completed. The Valley county reports have not as yet been fully summarized, although the Department expects to receive the Hampden and Hampshire county reports from the federal department at an early date in 1932.

AGRICULTURAL FAIRS

Agricultural organizations sponsoring fairs and exhibits made considerable progress on the kind and quality of exhibits shown. There was an increase in the number of cattle exhibited and while hall exhibits were about 5 per cent less in quantity than for 1930 the quality and arrangement were far superior. Attendance at the fairs was 14 per cent under the previous year, undoubtedly due to general business conditions as well as the infantile paralysis scare. Fair organizations are paying more and more attention to expenses, the better arrangement of exhibits, the comfort and convenience of their patrons, and in general putting their organization upon a more efficient business basis. The work done and number and quality of exhibits shown by the young people are most encouraging. The Department has co-operated with the junior department of the State Extension Service in promoting Camp Gilbert at Amherst as well as a leader training

conference for the 4-H Clubs. It has also co-operated with the vocational section of the Department of Education in various projects relating to the judging of livestock.

SPECIAL FEATURES AT FAIRS

The Department, in co-operation with the Massachusetts State College, arranged to exhibit at several of the larger fairs, a mechanical hen and a special livestock exhibit. Both of these features were well received and decided assets to the educational departments of the fairs.

LEGISLATURE PROVIDES FOR NEW STATE BUILDING

The legislature, by the Acts of 1931, Chapter 413, provided for a Massachusetts Building on the Brockton Fair grounds which will be ready for occupancy in 1932. This building will be designed somewhat after the present State building on the grounds of the Eastern States Exposition at West Springfield and will be used for the purpose of exhibiting both agricultural and industrial products of the commonwealth. It shall be under the supervision of and maintained by this Department at the expense of the Commonwealth.

ALLOTMENT OF STATE AGRICULTURAL PRIZE MONEY

The Department received 123 applications for agricultural prize money, made 112 allotments and paid premiums to exhibits of 104 organizations. Amount of allotments ranged from \$15 to \$1,800, and was distributed through 23 major fairs, 19 community fairs, 14 poultry and rabbit associations and 48 grange exhibits. In addition to the above, agricultural prize money was used in financing the exhibit at the Massachusetts State Building, special exhibitions at the Union Agricultural Meeting, egg exhibits, fruit shows and similar displays sponsored by the Department during the year.

Financial report of agricultural prize money for 1931 follows:

Agricultural and Horticultural Societies

(Brockton and Eastern States not included)

Acton Agricultural Association, \$750; Barnstable County Agricultural Society, \$800; Blackstone Valley Agricultural Society, \$400; Bristol County Young Farmers' Fair, \$450; Deerfield Valley Agricultural Society, \$746; Essex Agricultural Society, \$1,800.70; Franklin County Agricultural Society, \$1,800; Hampshire, Franklin and Hampden Agricultural Society, \$1,800; Groton Farmers' and Mechanics' Club, \$600; Highland Agricultural Society, \$800; Hillside Agricultural Society, \$950; Housatonic Agricultural Society, \$1,800; Littleville Community Fair, \$400; Marshfield Agricultural and Horticultural Society, \$800; Martha's Vineyard Agricultural Society, \$500; Nantucket Agricultural Society, \$200; Plymouth County Agricultural Society, \$650; Sturbridge Agricultural Association, Inc., \$700; Union Agricultural and Horticultural Society, \$750; Weymouth Agricultural Society, \$487.50; Worcester Agricultural Society, \$1,188; Worcester County West Agricultural Society, \$950; Worcester Northwest Agricultural Society, \$1,050; total, \$20,372.20.

Community Fairs and Local Exhibitions

Ashby Community Fair, \$69; Bolton Farmers' Fair, \$50; Cape Cod Horticultural Society, \$50; Chester Junior Fair, \$6; East Longmeadow Community Fair Association, \$60; Granville Community Fair, \$75; Hampden County Improvement League, \$100; Hancock Community Fair, \$35; Heath Community Fair, \$145; Hingham Agricultural and Horticultural Society, \$98.50; Monson Community Fair, \$100; Orange Boys' and Girls' Club, \$75; South Amherst Apple Show, \$83.25; Sterling Farmers' Club, \$100; United Shoe Machinery Athletic Association, \$50; Upton Farmers' Club, \$100; Union Agricultural Meeting Fruit Show, \$268; Wales Community Fair, \$25; Westfield Young People's Agricultural Society, \$47; total, \$1,586.75.

Poultry and Rabbit Shows

Athol Poultry and Pet Stock Association, \$199.50; Boston Poultry Show, Inc., \$375; Essex County Rabbit Breeders Association, \$50; Fitchburg Poultry Fanciers' Association, \$196; Massachusetts State Rabbit Breeders Association, Attleboro Branch, \$50; Metropolitan Reading Poultry Association, \$59.50; Middlesex County Rabbit Breeders Association, \$21; New England Poultry Association, \$250; New England Rabbit, Cavy and Fur Club, \$99.50; Springfield Poultry Association, \$200; United Rabbit and Cavy Club, \$50; Southern New England Rabbit Breeders' Association \$40; South Shore Co-operative Rabbit Breeders Association, \$50; West Medway Fur and Feather 4-H Club, \$20; total, \$1,660.50.

Subordinate Granges

Amherst, \$7.50; Assonet, \$15; Brimfield, \$25; Braintree, \$25; Boylston, \$15; Bedford, \$49; Billerica, \$15; Cochituate, \$15; Dedham, \$15; Dunstable, \$25; East Bridgewater, \$25; East Freetown, \$20; Fairhaven, \$15; Grafton, \$25; Groton, \$13; Halifax, \$14.50; Hilltop, \$25; Holliston, \$20; Hinsdale, 11.50; Leicester, \$14; Lincoln, \$15; Ludlow, \$28; Mansfield, \$45; Merrimac, \$25; Natick, \$35; Nemasket, \$10; Norton, \$45.50; Northboro, \$20; North Seekonk, \$15; Oak Hill, \$20; Plainville, \$19.50; Palmer, \$15; Ponkapoag, \$24; Princeton, \$12; Rochester, \$24; Rockland, \$15; Randolph, \$30; Stockbridge, \$49; South Middleboro, \$8.50; Thrifty, \$28.75; Upton, \$20; Westboro, \$20; Wendell, \$18; West Stockbridge, \$28; Warren, \$35.50; Waltham, \$15; Westford, \$18; Weston, \$15; total, \$1,043.25.

Summary of State Prize Money

Agricultural and Horticultural Fair Exhibitions.	\$20,372.20
Community Fairs and Local Exhibitions	1,586.75
Poultry and Rabbit Shows	1,660.50
Subordinate Granges	1,043.25
Junior Activities	1,931.92
Badges, Medals, Cups, Ribbons, Trophies	742.22
Livestock Judging Teams	445.65
Special Exhibitions	8,499.08
Miscellaneous Expenses	435.03

REPORT OF THE STATE RECLAMATION BOARD

RECLAMATION DISTRICTS

During the fiscal year 1931, practically all of the reclamation districts previously organized under the State Reclamation Board or its predecessor, the Drainage Board, were inactive. During the year, one more reclamation district was formed, in East Boston and Revere, known as the Belle Isle Reclamation District. The area comprising this district is owned by a small group of proprietors, who are planning to reclaim certain lands, presumably for industrial use, and at the same time eliminate mosquito breeding areas.

MOSQUITO CONTROL PROJECTS

By far the principal activity of the State Reclamation Board during the past year has been in the way of forming and supervising mosquito control projects under the provisions of Chapter 288 of the Acts of 1929. The Cape Cod Project and the Nantucket Project, both formed the previous year, were very active, continuing the work so well started in 1930. The Belmont-Cambridge-Watertown Project was organized in December, 1930, and the Natick Mosquito Control Project was organized in July, 1931. In addition to these two projects, there were formed four State projects, under the provisions of Chapter 112 of the Acts of 1931, which was based on a message to the General Court from His Excellency, Governor Ely, asking for an appropriation of \$270,000 for the relief of unemployment, the same to

be spent under the direction of the Reclamation Board on mosquito control work.

These four projects, which were confined to salt marsh areas, were made up as follows:

	<i>Allotments</i>
Bristol-South Plymouth—from the Rhode Island line to Wareham, excluding the town of Marion	\$90,000
South Shore—from Plymouth to Weymouth, inclusive	70,000
North Shore—from the New Hampshire state line to Manchester, inclusive	90,000
South Essex—from Beverly to Revere, inclusive	20,000

In addition to the allotments as listed above, these amounts were increased by municipal appropriations and private contributions, as follows:

Bristol-South Plymouth	\$2,650
South Shore	18,200
North Shore	150

In November, at the special session of the General Court, a second message from Governor Ely was instrumental in securing an additional appropriation of \$100,000, under Chapter 465, to continue the work started under Chapter 112. Of this \$100,000, allotments were made as follows:

Bristol-South Plymouth	\$25,000
South Shore (including Quincy)	40,000
South Essex	35,000*

Under the provisions of Chapter 112, work on the salt marshes was inaugurated in the latter part of March and continued throughout the summer months until the money was exhausted, and was resumed again in November with the new appropriation granted under Chapter 465.

The expenditures on these projects instituted under Chapter 112, during the fiscal year 1931, were as follows:

<i>Project</i>	<i>Expenditures</i>	<i>Total</i>
Bristol-South Plymouth	\$91,121.91	
South Shore	86,504.46	
North Shore	89,983.96	
South Essex	24,876.92	
	<hr/>	\$292,487.25

Expenditures on other than state projects were as follows:

Cape Cod	\$119,963.20	
Nantucket	7,526.37	
Belmont-Cambridge-Watertown	3,262.02	
Natick	142.25	
	<hr/>	130,893.84

Grand Total \$423,381.09

In the four State projects employment was given to a total of 1,372 citizens of the Commonwealth, during the fiscal year 1931, all from the ranks of the unemployed, and, in practically every instance, to men with a large number of dependents. Thus, in addition to successful work in controlling mosquito breeding areas along the seacoast of the Commonwealth, a very creditable result was obtained in relieving distress among groups of unemployed, many of whom would otherwise have required assistance from welfare boards or private charities.

The work consisted mainly of ditching the salt marsh areas which were found to be breeding, and these ditches in the four State projects totaled as follows:

Bristol-South Plymouth	335 miles
South Shore	365 miles
North Shore	232 miles
South Essex	56 miles

*Part of this to be expended on sod removal in the North Shore area.

The figures given above cover the new ditches constructed, and the old ditches and existing water courses which were either cleaned or redug.

In the two remaining seacoast projects, namely Cape Cod and Nantucket, the work on which was started in the late spring of 1930, the total ditching up to November 30, 1931, was as follows:

Cape Cod, 1,250 miles, of which 216 miles were constructed in 1930;
1,034 miles in 1931.

Nantucket, 83 miles, of which 80 miles were constructed in 1930;
3 miles in 1931.

The entire State appropriation for mosquito control granted as an emergency relief measure was allotted to the seacoast towns, because it was possible to use considerable labor from nearby industrial areas severely hit by unemployment, and the Board felt that mosquito control work on other than the salt marsh areas would be only of local benefit.

The budget for administrative work of the Board called for \$17,000, which covered the services of regular and part-time employees of the Board, as well as necessary expenses incurred in planning and supervising work for the various mosquito control projects in operation during the year.

The extra demands of the State projects, in addition to the other projects other than State, gave very little opportunity to serve some of the municipalities which inquired for information and surveys. However, investigations and reports were made in most instances, and it is evident that this work of mosquito control will have the attention of many communities when conditions return to normal in the Commonwealth.

RECLAMATION LEGISLATION, 1931

Senate 4.—A report to the General Court in accordance with provisions of Chapter 379 of 1930, presenting the record of work accomplished on the Cape Cod Mosquito Control Project, together with recommendations of State Reclamation Board.

House 1310.—Special report of the State Reclamation Board relative to draining certain marsh lands in Lynn, Revere and Saugus for abatement of the mosquito nuisance.

Chapter 315.—Amendment to Chapter 379 of the Acts of 1930, creating Cape Cod Mosquito Control Project.

Chapter 112.—Appropriation of \$270,000 for mosquito control work as a measure of relief during unemployment emergency.

Chapter 465.—Appropriation of \$100,000 additional for purposes of continuing work under Chapter 112.

Chapter 181.—Providing for method of abatement of certain mosquito nuisances.

Chapter 182.—Amendment to Chapter 252, Section 11, of the General Laws, providing for collection of Reclamation District assessments by local tax collectors.

MOSQUITO PROJECTS AND PERSONNEL

Mosquito Control Projects

Commissioners

Cape Cod (constituted March 27, 1930)	Oscar C. Nickerson, Chatham, Chairman. Harry S. Dowden, Sandwich, Secretary. G. Webster Hallet, Osterville.
Nantucket (constituted April 8, 1930)	Thomas H. Ball, Chairman. Louis J. Praeger, Secretary. Elmer J. Blanchard, Horace G. Norcross, Irving A. Soverino, Edmund Z. Ryder, William Holland, Frederick P. Boynton.
Belmont-Cambridge-Watertown (constituted Dec. 8, 1930)	L. M. Hastings, Cambridge, Chairman. Arthur E. Burke, Watertown, Secretary. Fred E. Poor, Belmont.
Natick (constituted July 31, 1931)	Thomas W. Sheehan, Chairman. Francis J. Murphy, Secretary. Lyman A. Brown.

State Projects

Bristol-South Plymouth (constituted Mar. 18, 1931)	James T. Hennessey, Wareham, Chairman. Thomas W. Whitfield, Fairhaven, Secretary. Frederic A. Gower, Fall River.
South Shore (constituted Mar. 28, 1931)	James W. Turner, Scituate, Chairman. Charles S. Clark, Duxbury, Secretary. Hollis T. Gleason, Cohasset. Hon. Frank A. Manning, Brockton. Frank L. Sinnott, Marshfield.
North Shore (constituted Mar. 27, 1931)	Hon. Michael Cashman, Newburyport, Chairman. Howard N. Doughty, Ipswich, Secretary. Lawrence J. Hart, Gloucester.
South Essex (constituted May 19, 1931)	Charles F. Cotter, Lynn, Chairman. Henry A. B. Peckham, Saugus, Secretary. Edmund Talbot, Salem.

REGULATORY WORK OF THE DEPARTMENT

CHANGES IN APPLE GRADING LAW

The effect of the Massachusetts Apple Grading Law was changed by new legislation during the last session of the legislature. The law in operation during the past 15 years was a compulsory law that required a definite grade mark upon all closed packages of apples. Some of our producers who were not equipped with grading machines and other modern equipment have found it difficult in the past to pack and mark their apples in full compliance with the Apple Grading Law. Many of our fruit growers were desirous of packing their fruit in closed containers and marking the containers with three essential requirements:

1. The variety of fruit.
2. The minimum size or numerical count.
3. The name and address of the packer by whose authority the apples were packed.

There was, in fact, an increasing number of producers who considered that a greater leeway should be provided in the marking and branding of apples.

A committee of producers, marketing officials and others interested in the development of the fruit industry presented an apple grading law to the general court, and this law was passed by the legislature and became effective July 11, 1931. This new legislation provides for the establishment and promulgation of grades by the commissioner of agriculture and optional use of such grades upon closed packages of apples. It is no longer necessary to mark or brand closed packages with an official grade, but if such packages are marked and branded, it is essential that the requirements of the grade be met.

The regulatory phase of our work in connection with the enforcement of the Apple Grading Law consists of:

1. *Inspections.* All principal markets are inspected daily by qualified men and a representative number of packages of apples are inspected with reference to their compliance with the provisions of the law. A report of the inspector's findings are submitted to the department in each individual case.

2. *Hearings.* In the case of violations of the Apple Grading Law, a notice of an official hearing is sent to the parties concerned, stating the place, date and hour of the scheduled hearing and a brief description of the violation. Each case is heard separately and a brief is prepared for further consideration.

3. *Prosecutions.* All cases that cannot be settled to the full satisfaction of the commissioner at a hearing are prosecuted in the lower courts. During the past year, more than 125 persons were called into official hearings and only two cases were prosecuted in our courts. All persons who were heard by the regulatory section were followed up carefully through subsequent inspections, and it is our observation that the men called into hearings profited greatly by the admonition and advice that was given by the regulatory officers.

The new law apparently has created a more favorable situation with respect to violations, inasmuch as not more than 25 hearings have been conducted during the months of August, September, October and November on violations of the optional law.

Seventy-five per cent of all violations reported have been for overfacing the packages. This is a serious violation, inasmuch as the faced or shown surface of the package is better than the contents and the buyer is deceived. It is our policy to make every effort to eliminate this phase of misrepresentation and deceit, and the great majority of progressive fruit growers are in strict sympathy with our efforts along this line.

CORN BORER ENFORCEMENT

During the past season, the number of corn borer violators summoned to hearings at the State House and other designated points was appreciably decreased. A new system was introduced, wherein the person neglecting to take care of corn stubble in the home garden was given instructions by the inspector and was requested to return a post card to this department indicating that the corn stubble had either been destroyed or buried to a depth of six inches or more. This plan has apparently worked very well, inasmuch as we have received wholehearted co-operation from the small gardeners in carrying out the policy of the department. No prosecutions resulted from the hearings conducted in the cases of the large growers, inasmuch as all were first violations, and it has not been the policy of the Department in enforcing the provisions of the Corn Borer Law to bring first offences into court. None of the violations reported during the past season were for second offences.

There has been a considerable activity on the part of Federal and State agencies interested in the control of the corn borer to put into practical operation the use of low cutting devices that will cut the corn stalk at the ground leaving no appreciable stubble. The corn growers have been notified through the county extension offices that the corn borer law would be inoperative in cases where the low cutting machinery cut the corn stalk at the ground level, leaving no corn stubble. Several demonstrations of low cutting devices have been carried on in different counties during the past year, and it seems that considerable improvement is being made in these implements for better control work. The Department is in favor of a progressive development along this line.

THE SEED LAW

Approximately 500 seed samples were collected during the past year from communities in every county in the State, and it would appear that a cross section of the seed industry was truly represented in the type and kinds of seed samples collected. All of the samples were sent to the seed laboratory at the Massachusetts Agricultural Experiment Station and a report of their findings will be published in bulletin form during the winter months. Regulatory work in connection with the enforcement of the seed law for the first few years will be centered chiefly on the publishing of results and tests and analyses of the samples collected from the seed dealers. The seed law is a true labeling law and poor seed may be sold if correctly labeled. It is our purpose to teach the farmer the resulting benefits of buying good seed that is correctly labeled and to insist upon the dealer selling seed with due regard to the provisions of the seed law. Hearings on reported violations will be

held and prosecutions will follow when in the opinion of the commissioner such action is necessary to obtain a full compliance with the provisions of the seed law.

FARM PRODUCTS GRADING LAW

Several hearings have been held relative to the misuse of official grades or labels in the sale of graded farm products. The Farm Products Grading Law is an optional law and it has been our policy to guard carefully the uses of the New England label on graded farm commodities. The co-operation of the producers has been encouraging and the violations reported have not been of great consequence. Our inspectors have spent considerable time in checking the sale of eggs, asparagus, tomatoes and strawberries and baby chicks graded and labeled in accordance with the provisions of this law. There have been cases where it was necessary to insist upon grade designations and labels being removed, when, in fact, the farm product did not meet the requirements of the grade. There have been other cases wherein the producer has been directed to remove a sign or advertisement indicating that farm products of an official grade designation were for sale, when, in fact, such farm products meeting the requirements of grade could not be obtained on this particular farm.

Every precaution has been taken to properly police the grades established by the commissioner of agriculture in order that the progressive farmer using the grade designation and label might profit by the sale of his graded farm products through a sales premium.

OTHER REGULATORY WORK

The nurserymen appear to understand fully the provisions of the law under which they operate and are careful to keep within the provisions of the law. One violation was reported in connection with the enforcement of the apiary law. This was an instance where the inspector was refused admittance to the premises where bees are kept. A conference was arranged in this particular case and the matter was adjusted to the satisfaction of the apiary inspector. The premises were finally inspected and the colonies of bees were found to be free from disease.

The inspectors and other regulatory officials of the Department have made a special effort to carry on a constructive program in regard to the enforcement of all laws coming within the jurisdiction of the Department. The farmer, the consumer, the commission man, the nursery man, the seed dealer and all other persons associated in any way with the regulatory work of the Department have been given impartial consideration in our efforts to bring about a substantial compliance with the laws that we are entrusted to enforce. Some of our laws are comparatively new and a greater amount of education is necessary in developing an understanding of our regulatory procedure and a co-operative interest among all the parties concerned. We find that our farm units, in general, are scattered and operated in general upon an individualistic basis. Many of our farmers are busily engaged during the working hours of the day, far removed from legislative and law-making activities and we find, therefore, that many of them are not well informed regarding laws that pertain to their occupational life. In order to serve them effectively, it becomes necessary to enlighten them regarding the law that pertains to their farming operations and enlist their co-operation in obtaining a full compliance with that law. Our experience has shown in our dealings with farmers that they have merited any consideration that we may have shown to them in applying the exercise of our police power with understanding and judgment as to their local agricultural problem.

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The Commonwealth of Massachusetts

ANNUAL REPORT

OF THE

Commissioner of Agriculture

FOR THE

Year Ending November 30, 1932



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The Commonwealth of Massachusetts

DEPARTMENT OF AGRICULTURE

To the Honorable Senate and House of Representatives:—

In compliance with the provisions of Chapter 128 of the General Laws, I am herewith making my annual report for the year ending November 30, 1932, for the Department of Agriculture.

Respectfully submitted,

A. W. GILBERT, *Commissioner*.

PERSONNEL OF THE DEPARTMENT

COMMISSIONER OF AGRICULTURE—DR. ARTHUR W. GILBERT, BELMONT

ADVISORY BOARD APPOINTED BY THE GOVERNOR AND COUNCIL

GEORGE E. TAYLOR OF SHELBURNE, Term expires November 30, 1933.

JAMES O'BRIEN OF LEE, Term expires November 30, 1934.

JOHN T. GOGGIN, OF SEEKONK, Term expires November 30, 1934.

JOHN BURSLEY, OF BARNSTABLE (WEST), Term expires November 30, 1935.

STUART L. LITTLE OF NEWBURY, Term expires November 30, 1935.

DIVISIONS AND ORGANIZATIONS

DAIRYING AND ANIMAL HUSBANDRY—*Director*, JOSEPH C. CORT, READING.

MARKETS—*Director*, LAURENCE A. BEVAN, NEWTONVILLE.

ORNITHOLOGY—*Director*, DR. JOHN B. MAY, COHASSET.

PLANT PEST CONTROL—*Director*, R. HAROLD ALLEN, TAUNTON; *Assistant Director*, QUINCY S. LOWRY, CANTON.

RECLAMATION, SOIL SURVEY AND FAIRS—*Director*, L. B. BOSTON, AUBURDALE; *Assistant Director*, A. W. LOMBARD, ARLINGTON.

AGRICULTURIST—DANIEL J. CURRAN, MARLBOROUGH.

STATE RECLAMATION BOARD

Chairman, EDWARD WRIGHT, DEDHAM

L. B. BOSTON, AUBURDALE

GEN. RICHARD K. HALE, BROOKLINE

Secretary, GEORGE R. STRATTON, HOPKINTON

REPORT OF THE COMMISSIONER

The prices for farm products continued to decline during the past year, primarily because of the steady decline in the purchasing power of the consumer. In many instances, staple farm products such as apples, onions and market garden crops were sold on our local markets at a price below the cost of production. There is no question but what our farmers are beginning to understand the seriousness of the situation. They have practised strict economy in the many phases of production and marketing of their farm products, and are mindful of the fact that further cuts and elimination of expense must be put into operation if they are to continue in the business of farming for a livelihood. We share with them the hope that prices have reached the lowest level and that the year 1933 will be the turning point in an upward trend of prices that will give them some courage in continuing the business of farming. In some communities there has been a slight decrease in taxes on real estate, but the ever-present tax on our farms is a staggering burden to our farmers who are not able to sell the farm products at a profit. This department is stressing special economies in the matter of marketing our agricultural products, and every effort is being made to study the consumer demand for local farm products and correlate that demand with economic production.

There has been a slight back-to-the farm movement which usually takes place in a period of depression with many persons unemployed. This department has attempted to be helpful to those especially desirous of locating on a Massachusetts farm. It has been our policy to advise such people very definitely that experience

in farming is a very necessary qualification to successful accomplishment. The history of Massachusetts agriculture abounds with failures in farming ventures by persons who enter into the field of agriculture without adequate preparation. It has been necessary to call to the attention of those entering the field of agriculture, for the first time, that farming is a business and requires a certain amount of capital for a successful start and a definite program for a successful continuation. It is not now possible, and never has been possible, for the ordinary employee in our factories to attempt farming without experience and without capital and provide for himself and his family for any great length of time. It is especially difficult during these times of low prices for farm products for a person not well acquainted with farm practices and not equipped with the facilities for farming to enter upon an agricultural project with any great degree of success.

We have received many requests for financial assistance during the past year from those out of employment and desirous of settling upon small farms, and we have been obliged to explain that the commonwealth could not provide free land, free seeds or fertilizer, free machinery or money for the purpose of assisting needy persons in the development of agricultural projects. We are, however, prepared to advise qualified persons relative to the prospects and advantages of Massachusetts agriculture, and we have considerable literature on all phases of agricultural enterprises that we distribute free to persons who are interested in farming in this Commonwealth.

There seems to be a very definite trend in the state towards renewed activity on the part of our agricultural organizations. The attendance at our Union Meeting at Worcester was larger than ever before and the meetings of the different commodity groups indicated very plainly that the farmers were alive to the serious situation that confronted them and were working as a unit to bring about necessary changes. Constructive suggestions were in evidence at this annual meeting of the farmers of the state and their interest in bringing about better marketing conditions and more economic methods of production has been clearly shown at frequent gatherings and meetings during the year.

The market gardens have been busy on a development of their marketing problem that would eventually mean the establishment of a new market providing more space and better conditions for selling their products.

The fruit growers are engaged in a strenuous campaign to eliminate, insofar as possible, the apple maggot, plum curculio, coddling moth, and various other insects and diseases. Our progressive fruit growers are concerned with the very difficult competition which they must meet with reference to fruit infested with insects and diseases and offered for sale at very low prices on our local markets. An intensive campaign has been planned to control the situation insofar as possible. Fruit growers in all parts of the state, under the supervision of the State Department of Agriculture, the Extension Service and the Massachusetts State College, will participate in a program which includes three principal phases:

1. Cutting down of neglected trees or trees that are known to have been infested with the apple maggot, commonly known as the "railroad worm".
2. A spraying program that will definitely tend to control dangerous insect pests and diseases.
3. A clean-up of fruit that has fallen to the ground during the fall months.

It is expected that the cooperation of the fruit growers with reference to this program will relieve the situation with regard to the large amount of cull or poor grade apples that are being dumped each year onto our local markets.

The dairy farmers are attempting to organize their industry in the hope that the price that they receive for the milk product will enable them to maintain their dairy farms and provide a continuous supply of quality milk product to our consuming markets.

The most important legislation that was enacted during the past year was the dairy farm inspection bill which provided for the establishment of a Milk Regu-

lation Board, composed of the commissioner of agriculture, commissioner of public health and the attorney-general, with power and authority to establish and promulgate regulations including minimum requirements for the inspection of dairy farms providing Massachusetts markets with milk. The basic feature of this new law is the issuance of a certificate of registration by the director of the division of dairying and animal husbandry to each dairy farm supplying milk to our markets. Milk on such farms must be produced under conditions that satisfy the rules and regulations established by the Milk Regulation Board. The law provides for the designation of additional milk supply by the Milk Regulation Board, but in no way interferes with the powers and authority of local boards of health in establishing such rules and regulations as may be necessary to protect the local communities. In case of a shortage in our milk supply or serious emergency, milk may be brought in from uninspected territory subject to such conditions as the Milk Regulation Board may determine. It is expected that the operation of this law will have the effect of eliminating duplication of inspection, lack of uniformity in inspection practices and the development of a supply of uniform quality milk for all markets in the state.

FARMS FOR SALE

One of the most valuable services this department renders and one which has been carried on for almost twenty-five years is the listing of farms for sale and assisting prospective buyers. A considerable number of farms are being offered for sale for many reasons, among others advanced age of the owners, or to close estates. Some of these are attractive bargains to persons wishing to go into farming. Depression years often lead people in thickly settled urban centers to return to the land.

Those persons who succeed best have been farm born and bred, and for one reason or another have drifted into the city. They are much more likely to succeed back on the farm than a city man who has had no farm experience.

Farmers, particularly young men, from the West are being attracted to our eastern farms.

This department, therefore, through this channel and with its other activities is helping to rejuvenate eastern agriculture.

FARM LABOR

During the past year our activities in finding farm labor have been reduced to little or nothing as there is plenty of labor to be had without our looking for it. On the other hand, many men have come to us seeking employment, excellent farm hands many of them. Places for many of them cannot be found. It is pathetic to see men and their families who have had farm experience and apparently capable of doing a good day's work, and perhaps being supported from relief funds, unable to find employment in the country. At other times farmers would have been glad to employ them.

COUNTRY FACILITIES FOR TOURISTS

The use of farm homes by tourists is becoming more general and mutually satisfactory. The average tourist, first motivated perhaps to save a little money and avoid congestion, has found in many farm homes accommodations which are clean, attractive and inexpensive.

This department for the past nine years has listed many such homes and has sent this bulletin to thousands of persons looking for a quiet, wholesome place for a summer vacation or an overnight stop.

These places are being improved. Our assistant in charge of this work makes many helpful suggestions for their improvement. The County Extension Services are making a special study of ways to improve these facilities and their advice is helpful.

Tourists bring money to the farmer's wife and expand the market for fresh, high quality farm products. This arrangement also improves and increases the tourist industry of the Commonwealth.

RECIPIENTS OF AWARDS FOR AGRICULTURAL ACHIEVEMENT

Continuing a custom established by the Department in 1924 the Advisory Board selected the following named persons as worthy of public recognition for their respective outstanding contribution to Agriculture and Rural Life:

Charles S. Tenney, Northfield, Dairy Farming.
 Walter H. Mayo, Orleans, Duck Raising.
 Mrs. Addelene B. Floody, Worcester, Community Service.
 Archer L. Pierce, Peabody, Fruit Growing.
 Miss Harriet Wheeler, Shirley, Club Work.
 Veikko Merikanto, Hubbardston, Club Work.

REGULATORY WORK OF THE DEPARTMENT

The policy of the Department, during the past year, has been to enforce the laws coming under its jurisdiction strictly and impartially and on first violations to summons the parties concerned before a special board to be heard. At these hearings all the details relating to the case as reported by the inspector were presented to the violators, and they in turn were requested to present any circumstances in their opinion which might affect the case. The resulting effect of the hearings was most encouraging in that the parties concerned gave every indication of cooperating with the Department in a strict enforcement program of our agricultural laws. It has been our observation that those persons who attended the hearings and were fully instructed in the provisions of the law have made special effort to carry on their agricultural activities within the law.

The Seed Law

It has been our policy to acquaint seed dealers with the provisions of the seed law indicating to them that the enforcement of the law has a two-fold purpose.

1. The true labeling of seeds would enable our farmers to intelligently purchase the kind of seeds that they want, and in the event that our farmers saw fit to purchase a low grade seed, it would then be evident that the farmers should receive educational instruction along this line.

2. A uniform compliance with the provisions of the seed law relating to the testing, analyzing and sale of agricultural seeds would do away with unfair competition among seed dealers and place all dealers upon a more uniform basis relating to price schedules.

For the most part we received satisfactory cooperation from the dealers during the past year, and it is felt that the operations of the seed law have been instrumental in bringing about a more healthy condition regarding the sale of quality seeds in Massachusetts. Four hundred and fifty-three official seed samples were collected by our inspectors in 59 towns for the State, 36 of which have not been included in previous inspections. These samples were sent to the Seed Laboratory at Amherst for tests and analyses. A publication showing the results of such tests and analyses will be published under the supervision of the Department of Agriculture, and this publication in itself is a vital factor in our regulatory work, inasmuch as it shows to the seed trade the dealers who are selling a high quality of seed and those who are selling a poor quality of seed. It further gives an accurate statement of those dealers who are labeling the seed correctly and those who are not.

The Corn Borer Law

The entire State of Massachusetts is now under quarantine for the corn borer and our inspectors are operating in the four western counties as well as the eastern and central part of the State. It will be the policy of the Department to insist upon a strict compliance of the corn borer law in those counties that were recently quarantined, in order that they will suffer the least possible infestation. It will require an educational program in these counties to bring before the farmers the necessity of taking every precaution to control this dangerous insect. Demonstrations in the use of low-cutting devices will be continued and where the corn stubble can be cut at the ground level, a real advance has been made in control measures.

Many of our farmers are acquainted with the provisions of the law which require that corn stubble be plowed under or otherwise pulled up and destroyed on or before December 1st of the year of its growth, but are not so well acquainted with the provision that requires corn stalks to be disposed of before April 10th of the year following its growth. It has been a part of our program during the past year to bring to the attention of those persons growing corn the importance of this control measure.

The Apple Grading Law

The optional provisions of our present apple grading law have resulted in fewer violations. The apple packer is not required to put a grade designation on a closed package of apples. He is required to mark or brand the containers with the following statements only:

1. The name and address of the person by whose authority the apples are packed.
2. The variety name.
3. The minimum size and numerical count.

If a grade designation is used, it is necessary to comply fully with the requirements of that grade. The most prevalent violation during the past year, as in other years, has been "overfacing of the container" by putting the better fruit on the faced or shown surface, thereby causing a misrepresentation of the contents of the package.

Official hearings have been held as required by the apple grading law in approximately 50 cases. The persons violating the law have been watched carefully in further sales operations, and our observation clearly indicates that they profited greatly by the instruction and advice given to them at the hearing.

Milk Dealers' Financial Reports

Milk dealers purchasing milk from producers in Massachusetts are required to file annually, during the month of September, a financial statement and this provision of law has not been complied with in many cases. Hearings have been held in Fall River, New Bedford, Springfield, Haverhill, and Worcester, and dealers have been summoned to appear and show cause why their neglect should not be brought to the attention of the courts.

This law was enacted in 1930, and our findings based upon such hearings indicated that the neglect resulted primarily from ignorance of the law. Satisfactory financial statements were secured from the parties concerned within a reasonable time after the hearings.

Other Regulatory Work.

The enforcement of the oleomargarine law, the nursery inspection law, the apiary law and the farm products grading law has been carried on without any great difficulty. The nurserymen, the farmers and other persons coming within the regulatory provisions of these laws appear to be well acquainted with the legal requirements. These laws have been in operation for several years. Education programs have taught these men the necessity of carrying on their business with due consideration to the legal requirements. In cases where difficulty has arisen they have contacted the Department of Agriculture and received information and guidance that has been of great assistance to them in complying with the laws that relate to their special business.

The low price of butter has been an important factor in practically eliminating the sale of oleomargarine from the markets of our mill towns. Economic conditions have made it possible for the department to take inspectors from certain regulatory work wherein the services are not definitely needed and assign them to other phases of important regulatory work wherein the need is immediate. The policy of the department shall be to continue in effectively administering the laws given to the Department of Agriculture to enforce, paying particular attention to those regulatory services that are especially essential to the proper protection of the interests of producers, consumers and distributors of agricultural produce.

REPORT OF THE DIVISION OF DAIRYING AND HUSBANDRY

SPECIAL COMMISSION

The work of the Special Commission on Dairy Farm Inspection was completed when their report was submitted to the General Court in December, 1931. The report contained the following nine recommendations:

1. That a Milk Regulation Board be created with power to establish and promulgate rules and regulations and uniform minimum requirements for the inspection of dairy farms supplying milk and cream for Massachusetts markets.

2. That the Milk Regulation Board be empowered to act as an appeal board in cases of disagreement on the issuance, revocation, and suspension of certificates of registration to dairy farms, and permits to producers of milk to sell and deliver milk in towns and cities.

3. That the Director of Dairying and Animal Husbandry in the Department of Agriculture be authorized to make and cause to be made adequate inspection of dairy farms producing milk for sale in Massachusetts as the basis of uniform minimum requirements established by the Milk Regulation Board.

4. That the Director of Dairying and Animal Husbandry be given authority to issue certificates of registration to dairy farmers producing milk for sale in Massachusetts when such farms show a satisfactory compliance with uniform minimum requirements.

5. That the milk producers and dealers and distributors of milk and cream be required to submit definite information regarding the production, distribution and sale of milk, cream and milk products.

6. That the consumers of milk be guaranteed a safe, healthy, adequate supply of milk and of cream from sources that can be inspected most effectively and economically.

7. That a bond be required of milk dealers and distributors to properly protect a continuing supply of quality milk from the producer to the consumers. Dealers and distributors of known financial responsibility should be exempt from the bond requirement.

8. That the regulatory enforcement of the present law relative to the weighing and testing of milk or cream as a basis for payment in buying or selling should be placed in the Department of Agriculture.

9. That the present Grade A and Grade A Massachusetts laws be repealed, and a new legal grade be made for a high quality milk produced in Massachusetts.

Most of these recommendations were adopted by the Legislature and were enacted into law.

MILK REGULATION BOARD

The Milk Regulation Board, created by this law, is made up of the Commissioner of Agriculture, acting as chairman, the Commissioner of Public Health and the Attorney General. This Board is empowered with authority to establish and promulgate rules and regulations, including uniform minimum requirements for the inspection of dairy farms producing milk for distribution, sale or exchange in the Commonwealth. The enforcement of the act is placed with the Director of the Division under supervision and control of the Board.

Two public hearings and ten meetings were held with milk producers, milk inspectors and milk dealers to draw up a set of regulations for the production of milk. Information regarding milk regulations was secured from Providence, Rhode Island, Hartford, Connecticut, New York City, Philadelphia, Pennsylvania, Newark and Trenton, New Jersey.

MILK QUALITY IMPROVEMENT WORK

The problem of improving the quality of the milk produced on Massachusetts farms is one of the most important that the Division is now working on. During the year 844 milk dealers' plants were visited and samples of milk collected. These samples were tested for keeping quality by the methylene-blue test, and also by

the sediment test. These two tests give a clear idea of the care with which the producer has been handling his milk. In cases where the results are unsatisfactory the inspectors visit the farms and render assistance in determining and correcting the cause of the poor quality as shown by the tests. Most of the milk dealers cooperate in this work and have been a factor in effecting considerable improvement.

The work was carried on in seventeen cities and towns and samples were collected and tested of 3,647 producers' milk. In some markets a number of surveys were made with marked improvement shown. In one case four surveys were made with the following improvement shown:

	Passable	Unsatis- factory		Passable	Unsatis- factory
First Survey . . .	64%	36%	Third Survey . . .	84%	16%
Second Survey . . .	69%	31%	Fourth Survey . . .	83%	17%

USE OF OLEOMARGARINE ON DECREASE

The use of oleomargarine as a substitute for butter showed a marked decrease in the State, principally due to the low price of butter. Many stores are no longer offering oleomargarine for sale. For this reason less time has been spent on this type of inspection work. A total of 1,611 stores and restaurants were inspected.

USE OF HORSES INCREASING

There is increased interest in the use of horses, particularly by dealers who in some instances are replacing motor driven vehicles with horses. Assistance was given in conducting the dynamometer horse pulling contest at the Eastern States Exposition at Springfield where greater interest was shown in the contest. Commercial horse shows at both Springfield and Boston were successful from the standpoint of the number of entries and the quality of the animals shown.

MILK MARKET AND MILK CONSUMPTION SURVEYS

Milk market surveys were made in Springfield and Pittsfield at the request of milk producers and dealers. The purpose of these surveys was to gather information on the receipts, sales, producers' prices and wholesale and retail prices for use in the various conferences on the problem of stabilizing the markets. The Springfield survey was especially important as it covered the entire Connecticut Valley section, including the markets of Springfield, Chicopee, Holyoke and Northampton.

Milk consumption surveys were conducted in Holyoke and Framingham as a continuation of the project of the two previous years. The purpose of the surveys was to determine the trend in the consumption of milk in these communities. A survey was also made of the use of condensed and evaporated milk as compared to fresh milk. This was conducted in Metropolitan Boston in cooperation with the Division of Markets.

POULTRY CERTIFICATION

During the year the grade name "Massachusetts Certified" was changed to "Massachusetts Certified-Accredited". The purpose of this was to clarify the meaning of the grade as the word "Accredited" stands for freedom from Pullorum Disease.

For the 1932 season there were forty-three flocks certified with a total of 56,288 birds inspected. In the hatching season two visits were made to each farm and a check was made on all hatching eggs in the incubator and those ready to be set, making sure they met the grade requirements for size, shape and texture.

POULTRY RECORD OF PERFORMANCE

During the year the poultrymen of this state applied for a higher grade of supervised poultry inspection. Therefore, a new grade was established which is known as "Massachusetts Record of Performance-Accredited".

For the year there were 16 plants throughout the state under supervision. The birds on these plants were inspected and the trapnest work taken over by the poultry inspector at different times during the season to make sure that the Record of Performance work was correctly and properly done. The monthly trapnest sheets were checked over by the Department. Approximately 50% of the birds entered for Record of Performance inspection passed the grade requirements which are as follows: Birds must be owned by a Certified-Accredited Breeder, must meet the Certified-Accredited Grade and must produce 200 or more eggs averaging 24 ounces or more per dozen in 365 consecutive days. Males must be pedigreed from birds having laid at least 225 eggs and meeting the above requirements.

GAME BIRD CERTIFICATION

For the first year that the Department did any actual work with Game Bird Certification there were six game farms inspected. These game farms had quite a variety of stock with a majority of the different breeds of pheasant, quail, partridge and grouse represented.

There were 532 pheasants, 163 quail, 17 partridge and 5 grouse handled and leg banded, having met the breeding requirements of the Certified Game Bird grade.

A fee covering the cost of the inspection service is charged for all poultry work.

SHEEP BREEDERS REPORT GOOD YEAR

The sheep breeders of Massachusetts had a reasonably good year considering the general low prices of meat animals and wool. The wool pool served a larger number of farmers than in past years with a total of 40,000 lbs. of wool being pooled. Assistance was given in marketing early lambs and locating breeding ewes.

REPORT OF THE DIVISION OF MARKETS

The regular projects of market reporting, standardization, inspection and furnishing information about marketing of Massachusetts food products were carried on in 1932 by the Division of Markets and certain additional emergency tasks were undertaken.

Shipping point apple inspection, as one instance, became active early in the apple season and about 40,000 bushels of apples were inspected by the division; as high as 12 to 14 inspections were made at almost as many farms during the rush period.

Due to additional acreages of vegetables, weather conditions, and other causes, an enormous supply of perishable products came to Boston in the last of August and September and special news items were made by this division and furnished the radio station for evening broadcasts which called the attention of the consuming public to the plentiful supply of fresh native produce.

The inspection of roadside markets using the state sign was continued and the number increased from 50 in 1931 to 62 in 1932.

No legislation of importance dealing with marketing work of this division was passed during the legislative season.

GRADES AND STANDARDIZATION

No new grades were established during the year with the exception of a change in the egg grades. Formerly, only one grade had been established called "Massachusetts Specials" but due to the development of a different method of selling, another grade was drawn up called "Massachusetts Extra". This grade follows the United States Extra and denotes only a slightly lower quality than the Special. It is used primarily by a new egg organization formed in the southeastern portion of the state where a group of egg producers started an egg auction. This organization is using the state label on its eggs and inspection by this division has been carried on regularly.

Other inspections of eggs have been continued as in the past and a special effort was made to acquaint egg producers with the interpretation of grade terms as they apply to quality.

For the third successive year, inspection of strawberries was carried on at the request of the Falmouth Strawberry Growers' Association. Inspection work with

this group has been valuable in two ways at least. First, all growers are subject to the same check-up and a record of inspection of each shipment is available to the growers and the officers of the association. Second, the detailed information of defects shown by the records leads to a careful examination of the causes and when these defects can be corrected, better quality is assured.

The grade on asparagus was established several years ago and the quality factors used as a basis were the length of green, the size of stalks, uniformity, general appearance and freedom from certain blemishes. Price levels have since then dropped to about half their former level and the question as to whether the quality factors of 1932 have the same value as 1928 needed careful consideration. An analysis of about 150 sales in the spring of the year showed that while the actual premium for amount of green color was less, due to lower sale prices, the percentage premium for long green asparagus compared very favorably with former years. The real difference came in the lack of returns for asparagus carefully graded as to uniformity of size of stalks in the bunches; large and small stalks together brought about the same as bunches which were more carefully graded as to size.

Inspection of turkeys was carried on as in former years and in cooperation with the turkey growers, a survey is being made to find out present methods of sale by producers. Although prices were low, most of the turkey producers moved the crop into the market fairly easily.

ROADSIDE STAND INSPECTION

For the second year, the division works with farm roadside markets using the state sign under a lease agreement. Sixty-two such stands leased the sign during 1932, an increase of twelve stands over 1931. While the majority of such markets are located in Middlesex and Essex counties, the sign was displayed by some stands in Hampden, Worcester, Plymouth, and Bristol counties. Plans are being developed by interested individuals in the formation of an association which will further this work.

CITY FOOD MARKETING STUDIES

City food marketing studies were continued in the cities of North Adams and Fitchburg, and detailed reports of these studies were written and prepared for distribution. Briefly, the city food marketing studies were made to obtain a picture of the conditions—practices and problems—surrounding the supply and distribution of foodstuffs in the city, particularly local agricultural products. In order to understand the situation, a knowledge of the city's history is essential—its physical layout, nationalities, occupations and incomes of the people, transportation facilities, proximity to other markets and consuming centers, character of the local agriculture, types of stores and markets in the city, amount of peddling and farm roadside market business as well as various other kinds of information. Statistical data is usually obtained from official city and state records and occasionally from market accounts, but the bulk of the information is obtained from general observations and personal interviews with city officials, farmers, county agents, peddlers, wholesalers, retailers and consumers intimately acquainted with local conditions. Minor changes which the investigator believes might facilitate or improve food marketing and distribution or encourage greater use of the local products in a city are incorporated in the report of the study.

Study of conditions in one city suggest that it might prove advantageous to local producers, retailers and consumers if the concern handling the bulk of local vegetables made earlier deliveries to the retail stores. In the same city, improvement during the last five or ten years in grading of local products was admitted by most market men interviewed but they also stressed the necessity for more grading if local producers were to successfully meet competition of shipped-in products. Time and again, these city market men expressed the opinion that the entire apple business would benefit if producers would refrain from "dumping" poor apples in the local markets. Samples of local apples picked up from counters have convinced several that these opinions were well founded. In another city the increased popularity of western dressed poultry and the present almost negligible demand for native dressed poultry was explained by storekeepers to be due chiefly to the inferior killing and dressing of the native products. This condition would seem

to indicate that improvement in the local killing and dressing practices might lead to a better local market demand. The rather sudden increase in the traveling truck business has affected the regular distributing system. This seems to be particularly true in small cities and towns where the entrance of one load of a product may flood the market. In one city studied, this new and more or less irregular supply has occasionally upset the local market. For this and other reasons, it is the general opinion of retailers that if the traveling truck is to become a regular part of the distributing system, there should be some method of bonding or licensing the same in order to protect buyers. Present unemployment conditions have stimulated house-to-house peddling, particularly in certain sections. Naturally it affects trade in the neighborhood stores but many appreciate the reasons for the recent increase.

GREATER USE OF NATIVE PRODUCTS

At the instigation of the Secretary of the Massachusetts Farm Bureau, an investigation was made to determine the likelihood of need for special assistance and effort in the marketing of the 1932 local fruits and vegetables. Farmers, county agents, marketmen, market reporters, seed salesmen and others were questioned concerning the plantings, expected production and market supply and demand, extent of home canning and a report of the findings was submitted to the Board of Directors of the Boston Market Gardeners' Association. Ways and means for encouraging greater use and consumption of the 1932 crops were outlined, including newspaper "boxes", write-ups, radio talks and other similar means.

The survey of egg and potato marketing in Springfield made at the request of the Agricultural Committee of the Springfield Chamber of Commerce and started in the 1931 fiscal year was completed. The reports of interviews were tabulated and summarized in report form and the results presented to the committee. Information gathered during the survey indicated plainly that the Springfield market could use more local products. The survey revealed some important reasons why local products were not used more extensively. Many of these objections to greater use of the local product could be corrected. On the basis of quality, storekeepers generally favored local eggs, while one frequently repeated reason for preference of western eggs was that they were graded more carefully. On the basis of quality, the majority favored the native potatoes for such reasons as superior cooking quality and mealiness—but the grading of the native potatoes was criticised, particularly as concerned the variability of lots and the "habit" of local farmers to "tuck in" small potatoes. Aside from objections relating to grading, the principal objection to buying potatoes from local farmers was unreliability of the visits of the local producers to the stores and under modern housing and business conditions most stores buy only a week's supply at a time, and so must depend on frequent deliveries. The requirements of hotel and restaurant trade were investigated. The operation of auctions and other methods of marketing eggs were discussed and, although to date there has been no radical change in the marketing of local eggs, local poultrymen are studying further the situation and changes are contemplated. To learn first hand the status of native potatoes on the basis of federal grades, sample lots were purchased in Springfield markets and results of the local federal representative's inspection included as a supplementary report. It was found that one particular type of injury made up more than one-half the total percentage of defects. The inspector's findings also showed that retail price is not necessarily indicative of quality. Reports of the surveys and supplementary investigations were presented to groups of farmers. In the following potato season, one large Springfield concern used 80% native and 20% shipped-in potatoes, whereas in the previous season the use of native and shipped-in potatoes had been in the reverse ratio.

APPLE GRADING LAW

The second year of operation of the new apple grading law, which underwent a major revision in 1931, finds this law apparently meeting the needs of the industry. Only one minor change in the regulations was deemed necessary this season, this being a revision in the color requirements for Gravensteins in order that this variety might be shipped to export markets under the same advantages as are enjoyed by certain competing states.

The regular inspection work was carried on throughout most of the season at city markets, leading shipping points, and in cold storage warehouses.

MARKET REPORTS

Reports on the farmers' produce markets in Boston, Worcester, and Springfield have been issued daily throughout the year.

The Special Apple Market Report was issued through the winter and spring months on a weekly basis and was resumed in August when the new crop became ready for marketing. Extra reports placing this source on a twice-a-week schedule were maintained, as heretofore, during the peak of apple movement in the fall months.

SHIPPING POINT INSPECTION

The shipping point inspection service carried on under a federal-state cooperative agreement has had a very active season. Under the cooperative plan, inspectors of this department after passing the required examination, are authorized to issue federal-state certificates showing quality and condition of the commodity inspected. Most of the inspections are made at the farm or packing house. These certificates are prima-facie evidence in all courts of the United States. This service is in effect on apples, pears, onions, and is available for potatoes.

Favorable apple markets in Great Britain and to a less extent in other foreign countries resulted in a sharp increase in the demand for this inspection service on shipments of apples into the export trade during the fall months.

Upwards of 40,000 bushels of apples were inspected. Approximately 90% met the requirements of foreign governments and were consequently certified for export.

Fees are charged for these certificates at rates which are intended to make the service virtually self supporting. During the past season, it was necessary to draw on the Governor's emergency fund to the extent of \$437.61, but \$508.25 was returned to the state treasury so that the entire project was handled without any net increase in expense to the Commonwealth.

It is estimated that Massachusetts apple growers received an added income of \$15,000 through the assistance given them by these inspections and certifications. This amount represents the difference in net return received by growers for their exports in comparison with what the same grades of fruit netted on domestic markets. This export business was also very helpful indirectly in relieving local markets of a substantial volume of fruit which could have been absorbed only with great difficulty.

Prior to the inauguration of the shipping point inspection plan, most inspections of apples intended for export had to be made at the dock. This discouraged apple growers inasmuch as they ran a chance of having their apples rejected for shipment after the fruit had been transported to the ship.

The shipping point inspection service was available to onion growers through a resident inspector stationed in the Connecticut Valley throughout the active shipping season.

APPLE MAGGOT

Damage to apple orchards caused by the apple maggot became so serious during the past year that it was necessary to take further action toward the control of this pest.

This insect is responsible for the present restrictions on American apples which are now in effect in Great Britain and many other foreign countries. In fact many countries have threatened to invoke complete embargoes against apples grown in this country because of this pest—a serious threat indeed when it is realized that exports of apples from the United States have an average annual value of over \$15,000,000.

Because the need of suppression of this pest is so closely connected with the marketing of the crop, this division has participated in several control projects.

One of the principal obstacles in the way of adequate control is the fact that, regardless of how well an individual orchardist sprays his trees, his fruit is likely to be infested by the spread of the insect from adjoining or nearby properties containing less well cared for apple trees.

Many of our fruit growers are doing everything possible to protect their orchards from the maggot, but much of this work is nullified because of the presence in their neighborhood of pest breeding trees in various stages of neglect. These neglected trees are a menace to the future of our apple business.

In order to get the facts as to the location of these uncared for trees and also to secure definite information as to the number and infestibility of such trees in a representative apple town, this division made a thorough survey of the town of Littleton in Middlesex County. This survey was carried on during the summer months at the time when apple maggot flies were in full flight and continued into the fall in order to provide a check-up of some of the extent of infestation.

All the apple trees in the town were spotted on a map, with colored designations showing the extent of spraying in each orchard. Information was secured from each owner regarding spraying and cultural treatment of his orchard and samples of fruit from each orchard were inspected for the percentage of maggot injury.

We were assisted in this work by the Emergency Planning and Research Bureau who provided an engineer for the map work. We also are indebted to the Middlesex County Extension Service for valuable assistance in analyzing the results of the survey.

Startling proof of the injuries suffered by owners of well cared for orchards because of the presence of neglected trees on nearby farms was afforded by the results of our inspections. It was shown that in cases where well cared for orchards were isolated, with no maggot breeding trees nearby, the average percentage of infestation was less than 8%. Where there were neglected trees within two hundred yards, the well cared for orchards had an average infestation of nearly 30%. Where neglected trees adjoined the properly sprayed orchards, the latter had an average infestation of over 50%.

With the results of this survey as an actual basis for consideration of the problem, a committee of fruit growers and public officials have held several meetings and have evolved a plan for apple maggot control to be put into operation in 1933.

The committee realizes that legislation requiring spraying or removal of neglected trees should be urged only as a last resort and consequently has recommended for the coming year a combination educational and regulatory measure which will be carried on through the cooperative efforts of the county extension services, the Division of Moth Control of the Department of Conservation, and the Division of Plant Pest Control of this Department. This program will not be put into operation on a state wide basis, but will cover only those sections where neglected trees are a menace to commercial orchards.

It is hoped that this plan will be successful in remedying the situation and that the need of legislation for maggot control will be avoided.

STATISTICAL INFORMATION

The Bulletin "Receipts and Sources of Boston's Food Supply" has continued to fill a demand for detailed information regarding the food needs of the Boston area.

The publication is a compilation and tabulation of statistical data of amount and sources of foodstuffs coming to Boston and is supplemented by short reviews or summaries relating to and explaining the situation of many of the products or groups of products. The information for these summaries is obtained through personal interviews and study and analysis of past records. In connection with special investigations and studies conducted throughout the year, much statistical information was tabulated, particularly in the canned milk investigation. Retail and wholesale prices and amounts of production and market receipts were tabulated for various purposes—individual and organization inquiries, basis for talks and articles, preliminary work on minimum budgets such as informing the Department of Public Health of the market situation of local agricultural products in order that the maximum amounts of local agricultural products may be included in published budgets.

Included in our statistical information is a complete and detailed summary of the weekly receipts and average prices of the important vegetables sold on the local market. The information has been published as a guide to market gardeners in planning their crops each season.

COOPERATION WITH OTHER AGENCIES

Complete coverage of Massachusetts farms and homes by an agricultural radio news broadcast has been a regular service over WBZ station through the New England radio market news service. Daily there are features that enable listeners to understand what is happening to the consumption of food products, including information on crop and market reporting, shipments of goods, and the best ways of utilizing native products.

Information on the condition of crops in Massachusetts, their size and quality, is of fundamental value and this division works closely with and supports the New England Crop Reporting Service, which issues such timely information.

Sometimes emergencies arise in the selling of our local products when the Division of Markets is called upon to furnish specific information.

In cooperation with the Department of Public Works definite facts were furnished the Boston Market Gardeners' organization regarding the possibility of establishing a new market on land owned by the Commonwealth in South Boston, as well as information relative to enlarging the present site.

Other requests for assistance along more general lines were also received from farm groups such as the fruit growers, poultry organizations, and information and assistance were given.

REPORT OF THE DIVISION OF ORNITHOLOGY

As in previous years, field studies of the movements and habits of the birds of Massachusetts have been given considerable attention by the Director of Ornithology, and records of the same were submitted to the general public in the form of a monthly bulletin entitled "Items of Interest." The Division has been successful in interesting a large number of voluntary correspondents, who have furnished much helpful information from their observation of bird habits within their respective areas. The aggregate of such information covered the entire State and much surrounding country.

NEW PROBLEMS CONTINUALLY ARISING

There is a wide field of research in which the Division needs to be constantly alert in the collection of additional data on bird life as related to economic agriculture. This is evident from the many new problems that are constantly arising with the invasion of such insect pests as the Japanese beetle, the Mediterranean fruit fly, and others. Fortunately no serious outbreak of insect or animal pests detrimental to man's interests occurred within the Commonwealth during the year. Numerous complaints were received from various sources, of damage to the shell-fish industry from gulls and other water-fowl, and these were investigated. Additional progress was also made in furthering the study of the relations of birds to the cranberry industry. There were surprisingly few reports of damage by grouse to apple orchards, but all such reports were investigated in connection with other conditions affecting our orchardists. The disappearance of eel-grass along our coast, with its wide-spreading consequences to water-fowl, fish and shell-fish required considerable study and correspondence, but this study is still in its initial stage.

It has been claimed that predatory creatures, both feathered and furred, have increased in Massachusetts, but it is also very evident that there is a decrease in the numbers of certain beneficial hawks and owls. As a result of this there is a movement, by several conservation organizations within the Commonwealth, to secure legal protection for those species of hawks and owls that are beneficial to the farmer, and the Director has been frequently consulted in this matter.

INCREASING DEMANDS FOR ASSISTANCE

The Division has been in cooperation with other agencies working along similar lines in the study of birds, has made numerous laboratory examinations of specimens collected and has assembled much data for general distribution. Many requests have been received for advice regarding treatment of gardens, orchards and woodlots, as well as proposed or existing bird sanctuaries, and as far as possible personal visits have been made to such places and conditions studied at first hand before recommendations were made.

The Division has a voluminous correspondence with bird lovers, not only from every section of the State, but many states outside of the Commonwealth. The monthly bulletin "Items of Interest" is quite generally read and is well received, as indicated by quotations in newspapers, and from its ever-increasing list of readers and contributors. Several hundred illustrated lectures were given during the year by members of the Division. In the past numerous bulletins on economic ornithology have been prepared and published. Many of these bulletins are now unavailable, and a few need rewriting and publication. "The Utility of Birds", an eighty-four page pamphlet issued in 1921, is used by schools quite generally as a textbook on economic ornithology, but is now out of print and might well be revised in the light of present-day information, reprinted and sold at a nominal sum. The same statement is true in relation to the larger work on "Useful Birds and Their Protection".

NEW PUBLICATIONS IN DEMAND

The new book "Portraits of New England Birds" was published during the year. This is a collection of the ninety-two full color plates by Fuertes and Brooks, and one plate by Dr. May, Director of this Division, compiled from the three volumes of the "Birds of Massachusetts", and printed as a single volume, without descriptive text. Ten thousand copies were printed in September, and it is a testimonial to the popularity of the volume that a third of the issue was distributed within the first four months. The sale of this new book has stimulated the sale of the original three volumes to such an extent that in all probability these editions will be exhausted before very long.

EXHIBIT MATERIAL PREPARED

Bird exhibits illustrating the value of birds in the vegetable garden and on the cranberry bog were prepared and shown in the Department's exhibit in the State buildings at both Brockton and the Eastern States Exposition at West Springfield. These exhibits aroused much interest and were the means of furthering one of the main objectives of the work of the Division of Ornithology,—the dissemination of information about the economic relation of birds to the agriculture of the Commonwealth.

REPORT OF THE DIVISION OF PLANT PEST CONTROL

NURSERY INSPECTION

The duties in the Division of Plant Pest Control have increased greatly since the time when the inspection of the nurseries was the only major problem. At this time, besides double the number of nurseries to be inspected, we have in Massachusetts serious infestations of the White Pine Blister Rust; European Corn Borer; and Japanese Beetle.

Inspection of the nurseries began early in May and was completed in October. 349 certificates were issued to growers of nursery stock, and 525 agents' licenses granted to persons distributing and taking orders for stock. Agents for the sale of nursery stock are required by law to hold licenses issued by the department and good for one year. The object of this requirement is to keep an oversight of the sources from which they obtain their stock, and assure the purchase of receiving only clean, certified plants. The nurseries are much improved in their general conditions, as compared with only a few years ago. Both San José and Oyster-shell scale are only occasionally found, and gypsy moths, which a few years ago were quite prevalent, caused very little concern this year to the nurserymen. We undoubtedly will, from time to time, have outbreaks of this phase in our nurseries, but our practice of maintaining a clean area around each nursery will greatly assist in keeping this, as well as other pests in check.

Interstate shipments of nursery stock have decreased during the past few years. Quite likely a considerable part of this business has been absorbed by our own nurseries.

EUROPEAN CORN BORER

Infestations of the European Corn Borer have now been found in every county in the State, and the entire State has been placed under quarantine. The Federal

quarantine against this pest has been removed, and corn, beans, beets with tops, rhubarb, asters, chrysanthemums, dahlias, and gladiolus, can be shipped freely without inspection or certification. The Massachusetts Corn Borer law is being rigidly enforced, and the results of the required control are very encouraging. The statute requires that all corn stubble shall be destroyed by December 1, and all corn stalks by April 10. A corps of inspectors were placed in the field on December 1 to report all violations of this law. It was very noticeable that the violations were fewer than in previous years, and most of the delinquents were persons having small gardens and were probably not familiar with the regulations. Farmers and persons in rural districts were found to have cooperated nearly 100 per cent. Persons who were reported as not complying with the regulations, were summonsed into hearings where the law and the benefits to be derived therefrom were explained.

JAPANESE BEETLE

This pest has been known to be present in Massachusetts for five years, and judging from the intensity of the Springfield infestation where it was first found, one would be inclined to believe that it had been present there for at least two or three years, before being discovered. The insect is easily controlled either by spraying for the adult or by treating the soil for the grubs. To date, however, the insect has caused no serious damage in this State. The area infested is determined by the use of traps into which is placed an attractive bait. It is difficult to judge how effective these traps are, but unquestionably they are more efficient than scouting. The trapping in Massachusetts was carried on with the cooperation of the United States Department of Agriculture, and beetles were collected in Arlington, Brockton, Brookline, Cambridge, East Braintree, Fitchburg, Framingham, Franklin, Greenfield, Hyannis, Lawrence, Lowell, Lynn, Natick, Needham, Newburyport, North Adams, Northampton, Palmer, Pittsfield, Salem, Sharon, Southbridge, Turners Falls, Waltham, Webster, Westborough, Westfield, and Worcester. Had funds permitted the securing of additional traps, there is little question but what many additional towns would have been found infested. In view of the findings, and especially the widely scattered infestations, it was thought advisable by the Federal Government to quarantine all of Massachusetts. The Federal quarantine now includes all of New Jersey, Delaware, Connecticut, Rhode Island, Massachusetts and part of New Hampshire, Vermont, New York, Pennsylvania, Maryland, and Virginia. Fruits and vegetables, nursery and greenhouse stock, and all other plants (including parts of plants and cut flowers) and sand, soil, earth, peat, compost and manure, if consigned to points outside the quarantined area must be inspected or certified. Not a single Japanese Beetle has been found in or near a Massachusetts nursery, and until this occurs the nursery stock can be shipped out of the area by certification and without actual inspection. This will, however, involve some clerical work on the part of the nurseryman and the inconvenience of attaching Federal tags. Nursery conditions, especially where good cultivation is practiced, are not especially favorable to Japanese Beetle infestation, and it is hoped that our nurseries might always be free from this pest.

INSPECTION OF APIARIES

The extensive use by orchardists of package-bees from the South, as mentioned in the annual reports of the last several years, appears to have become more definitely established. As has been anticipated, a technique for the use of these bees is gradually being developed. That package-bees will supplant the use of colony-bees is improbable. In fact, there is a growing tendency of beekeepers in various parts of the State to increase their holdings of colony-bees, either for rental or for sale to orchardists. It is impossible that as yet the full requirements of fruit orchardists have been met, in the use of package-bees and colony-bees. Hence, it appears that there is opportunity in Massachusetts for expansion, particularly in colony-bees. The Extension Service in the several counties is active in assisting orchardists to procure their requirements of either package or colony-bees.

In 1931, Middlesex and Essex Counties were given an intensive inspection. This resulted, it was found throughout the area in 1932, in a vastly improved condition. Thorough reinspection in 1932 brought the territory under control. Its

present condition approaches that of the western part of the State as heretofore reported. The chief disease encountered is American foulbrood, European foulbrood having been nearly wiped out, some factors being mentioned below. More than ever before, it is apparent that American foulbrood is a bee disease with which the beekeeper should not experiment. Beekeepers are warned accordingly, and are given a sheet of directions as prepared by the United States Department of Agriculture with recommendation for the proper disposal, usually by burning of American foulbrood. It is learned by experience throughout the country, that it is not only safer, but frequently more economical, in the average apiary, to kill and burn colonies diseased with American foulbrood. To an extent, varying according to circumstances, hives and some other materials may be salvaged and disinfected.

With European foulbrood, the experience of the last several years was borne out in 1932, very few cases having been found in the State. This disease in this State may now be considered negligible. Presumably, the bettered condition is due in part to the more general use of Italian stock. Italians, especially certain strains of this race, are relatively immune to European foulbrood. Beekeepers have been urged for some years to use the improved Italian strains.

With the bettered conditions found in the major part of the State, more intensive inspection has become possible south of Boston. In this area the rigid inspection methods outlined in the report of 1930 were used. No particularly infected area was discovered, the disease being more or less general throughout the region. This area will be reinspected in 1933 in an effort to further suppress the disease. It is also hoped that funds will be available, whereby inspection can be extended beyond the southern boundaries reached this year. Cooperation in inspection was obtained with Connecticut in an effort to control conditions along the State boundary. A similar arrangement will be desirable with New Hampshire, the proposal having been made in 1932 to the Commissioner of Agriculture of that State.

As heretofore reported, improved conditions in Worcester County and west, appear to have been maintained. No serious outbreaks of disease occurred. The few foci were quite local. With the funds available, it was possible to do a limited amount of work in the central and western part of the State, with the more intensive work confined to the eastern part. The policy which has been previously stated, of gradually extending the inspection, from the west toward the east and south, leaves an area in southern Bristol and Plymouth counties, and in Barnstable county, where only limited recent inspections have been done. It is here that new and intensive inspection should be undertaken in 1933.

Inspector of Apiaries: Burton Noble Gates, Worcester.

Deputy Apiary Inspectors:

Fred E. Challet, Northampton

Howell Shuman, Billerica

B. A. Hildreth, Sherborn

John Van de Poele, Abington

Ivan Rawson, Pittsfield

WHITE PINE BLISTER RUST CONTROL

In the spring examination of the white pine stock in the nurseries in Massachusetts, the blister rust disease was found in only one nursery. In furtherance of the departmental policy to assist in assuring the production of rust-free white pine nursery stock, the environs of two commercial nurseries were rechecked, for the purpose of eliminating any *Ribes* (currant or gooseberry bushes) in these areas. In these examinations, only one *Ribes* bush, an escaped red currant, was reported. One nursery made application for the issuance of a pine shipping permit prescribed by Federal Plant Quarantine No. 63. The surroundings of this nursery were checked and finally certified for such a permit. Control area permits for the shipment of *Ribes* and white pines into Massachusetts, under the provisions of the Federal quarantine, were issued to 62 individuals for the entry of *Ribes* fruit stock, and to 16 persons for the entry of white pines.

The Division was seriously handicapped during the 1932 season, by a 37% reduction in the appropriation available for the cooperative control of the rust in the white pine regions in the State. In spite of this reduction, the loyal efforts of the personnel and the continued cooperation on the part of local property owners

made it possible to carry on and accomplish commendable results in locating and eliminating Ribes from areas where they might be a menace to nearby white pines. The blister rust had become evident on white pines in 341 of the 355 cities and towns in Massachusetts, according to the records of the division compiled to November 30, 1932.

In the 1932 work assistance was rendered to 800 property owners in the examination of 161,606 acres of white pine lands and areas immediately adjacent thereto. On this total land area 334,353 wild Ribes were found and uprooted. In a few instances, it was necessary to destroy cultivated Ribes, because of their location within infecting distance of valuable white pines. In this phase of regular control work, 3,071 bushes were destroyed.

The special control project involving the complete elimination of European black currants in Massachusetts, because of the unusual susceptibility of this variety of Ribes, was continued in 31 townships. The canvass involved the careful search of 33,599 properties. In 386 locations, patches of black currants totalling 2,147 bushes were found and eliminated. In this special control work, 239 owners cooperated in the actual elimination of these susceptible bushes without the assistance of this division.

The experiences of the year indicate conclusively that the wild Ribes population will surely persist through the germination of seed in the soil, and the development of seedlings, and, therefore, continued vigilance will be needed to eliminate such regrowth of Ribes before the individual bushes reach a menacing size. Experience has also demonstrated that a small percentage, perhaps 10%, of the white pine owners in the State will, of their own accord, make such periodic searches for Ribes as are necessary. The remaining 90% of the owners will require the leadership, advice, and assistance of this Department in meeting the problem of preventing damage to the white pine forests of the Commonwealth by this serious fungous disease.

Messrs. Earle M. Brockway, William Clave, G. Stanley Doore, William T. Roop, and Ralph E. Wheeler, planned and directed the 1932 informational, service, and control work, under the guidance of C. C. Perry, Federal blister rust control leader, assigned to this cooperative project in Massachusetts.

REPORT OF THE DIVISION OF RECLAMATION, SOIL SURVEY AND FAIRS

MASSACHUSETTS FAIRS IN 1932

Agricultural fairs in Massachusetts, as elsewhere, during the past few years have felt the constantly increased burden of operating costs and the lack of increased patronage and income to offset the same. However in spite of this, together with the reduced spending power of the general public and inclement weather, in some instances, our agricultural fairs in Massachusetts present a very creditable showing.

During the year there were nineteen major, twenty-four community, eleven poultry and rabbit shows and forty-three granges holding agricultural fairs in which this Department cooperated. This is practically the same number held the previous year in spite of the fact that four of our largest fairs cancelled their dates. The increase of small community fairs is very noticeable.

NOTICEABLE IMPROVEMENTS IN EXHIBITS

One of the most satisfactory and encouraging aspects of agricultural fairs in the Commonwealth is the very creditable improvement in the number, quality and arrangement of the agricultural exhibits. The Department has for years been working on this project by actual demonstrations, group meetings with fair officials, illustrated lectures, conferences and otherwise. The response by those in charge of exhibits at the various fairs has been most gratifying, resulting in a greater interest in display arrangement, labelling, color schemes, decorations, etc.

SPECIAL EXHIBITIONS BY THE DEPARTMENT

It has been the custom of the Department for a number of years to hold special agricultural exhibitions in various sections of the Commonwealth. This year the

Department had the opportunity to present an additional educational exhibit at the State Building on the grounds of the Brockton Agricultural Society. This exhibit as well as the one in the State Building on the grounds of the Eastern States Exposition portrayed work of the various divisions of the Department. Suitable and timely exhibits were also installed at both the North and South Station terminals. In cooperation with other organizations and commercial concerns the Department set up a rather extensive exhibit at both the New England Prosperity Show and the New England Food Show in Mechanics Hall, Boston. Mechanical exhibits have been used from time to time in cooperation with the State College at numerous fairs and elsewhere. The Department truck has transported exhibits for demonstration purposes to various schools, window displays have been set up and at the Union Agricultural and other group meetings displays and exhibits have been installed.

MASSACHUSETTS FAIR STATISTICS FOR 1932

Not including Brockton Fair, the Eastern States Exposition and such other fairs in which the Department has not rendered financial assistance there were approximately a quarter of a million people in attendance during the year. At these fairs more than 65,000 agricultural exhibits were on display for which an excess of \$40,000 was paid in premiums. In comparison with the previous year this was a decrease of 16.3% in attendance, .9% increase in agricultural exhibits and 13% less premiums paid. In tabulating the returns it is found that the Department paid 47.8% of all the agricultural premiums. When it comes to expenditures of agricultural fairs we find that of the nineteen major fairs in which the Department cooperated \$114,217.35 was expended during the year which is 28% less than the previous year showing that fair officials are reducing expenditures and holding them more closely to a budget.

ALLOTMENT AND PAYMENTS OF AGRICULTURAL PRIZE MONEY

The Department received 115 applications for agricultural prize money, made 100 allotments and paid premiums to exhibitors of 97 organizations. Amount of allotments ranged from \$15 to \$1,800, and was distributed through 19 major fairs, 24 community fairs, 11 poultry and rabbit organizations and 43 grange exhibits. In addition to the above, agricultural prize money was used in financing the exhibits at the Massachusetts State Buildings, special exhibitions at the Union Agricultural Meeting, egg exhibits, fruit shows and similar displays sponsored by the Department during the year.

19 Agricultural and Horticultural Societies

(Brockton and Eastern States not included)

Acton Agricultural Association, \$752; Blackstone Valley Agricultural Society, \$500; Bristol County Young Farmers' Fair, \$450; Deerfield Valley Agricultural Society, \$799.50; Essex Agricultural Society, \$1,800.60; Franklin County Agricultural Society, \$1,800; Groton Farmers' and Mechanics' Club, \$600; Hampshire, Franklin and Hampden Agricultural Society, \$1,800; Highland Agricultural Society, \$950; Hillside Agricultural Society, \$1,000.50; Housatonic Agricultural Society, \$1,800; Littleville Community Fair, \$400; Marshfield Agricultural and Horticultural Society, \$800; Martha's Vineyard Agricultural Society, \$500; Nantucket Agricultural Society, \$197.75; Plymouth County Agricultural Society, \$650; Sturbridge Agricultural Association, \$700; Union Agricultural and Horticultural Society, \$750; Weymouth Agricultural Society, \$550; total, \$16,800.35.

24 Community Fairs and Local Exhibitions

Ashby Community Fair, \$75; Barre Junior Fair, \$98.50; Bolton Farmers' and Mechanics' Club, \$50; Cape Cod Horticultural Society, \$100; Chester Junior Fair, \$43; Connecticut Valley Onion Show, \$51; East Longmeadow Community Fair Association, \$60; East Bridgewater Community Fair, \$75; Granville Community Fair, \$75; Hampden County Improvement League, \$100; Heath Agricultural Society, \$155; Hingham Agricultural and Horticultural Society, \$100; Monson Community Fair, \$100; Orange Boys' and Girls' Club, \$75; Southwick Community Fair, \$24.50; South Amherst Fruit Show, \$98.25; Sterling Farmers' Club, \$125;

Truro Agricultural Society, \$15; Upton Farmers' Club, \$100; Westboro Woman's Club, \$15; Wales Community Fair, \$25; Westfield Young People's Agricultural Society, \$50; White Oaks Community Fair, \$25; Worcester Junior Fair, \$131; total, \$1,766.25.

43 Subordinate Granges

Acushnet, \$15; Bedford, \$44.50; Boylston, \$15; Brimfield, \$20; Cheshire, \$14; Coahituate, \$15; Dedham, \$20; Dunstable, \$50; Eastham, \$15; East Freetown, \$15; Fairhaven, \$15; Granby, \$14; Halifax, \$15; Hilltop, \$25; Holliston, \$20; Hopkinton, \$15; Leicester, \$13; Ludlow, \$25; Mansfield, \$35; Merrimac, \$29; Natick, \$35; Needham, \$15; New Salem, \$15; Norton, \$35; North Seekonk, \$15; Palmer, \$17; Plainville, \$20; Ponkapoag, \$15; Princeton, \$14; Randolph, \$25; Richmond, \$15; Rochester, \$15; Seekonk, \$9; Swansea, \$8; South Middleborough, \$11.50; Stockbridge, \$39; Thrifty, \$29; Upton, \$15; Warren, \$35; Wendell, \$20; Westford, \$19; Weymouth, \$15; West Stockbridge, \$24; total, \$890.

11 Poultry and Rabbit Shows

Angora Wool Producers' Association, \$25; Athol Poultry and Pet Stock Association, \$181.50; Boston Poultry Show, Inc., \$240; Essex County Rabbit Breeders' Association, \$50; Fitchburg Poultry Fanciers' Association, \$183; Metropolitan Reading Poultry Association, \$143.50; New England Rabbit, Cavy and Fur Breeders' Association, \$99.70; Norfolk County Poultry Association, \$37; New England Poultry Association, Inc., \$245.50; Springfield Poultry Club, \$175; United Rabbit and Cavy Club, \$50; total, \$1,430.20.

SUMMARY OF STATE PRIZE MONEY

Agricultural and Horticultural Societies	\$16,800.35
Community Fairs and Local Exhibitions	1,766.25
Poultry and Rabbit Shows	1,430.20
Subordinate Granges	890.00
Junior Activities	1,968.04
Badges, medals, cups, ribbons, trophies	862.52
Special Exhibitions	6,601.25
Miscellaneous expenses	1,070.73
	<hr/>
	\$31,389.34

REPORT OF THE STATE RECLAMATION BOARD

Mosquito control work continued to be the principal activity of the State Reclamation Board during the fiscal year 1932, although some work was undertaken on the part of the Belle Isle Reclamation District and efforts were made to smooth out some of the difficulties in the Assabet River and the Green Harbor Reclamation Districts.

COMMENTS AND STATUS OF MOSQUITO CONTROL WORK

On mosquito control, the appropriation of \$100,000 which was granted at the special session of the General Court of November, 1931, was spent largely in the early months of the fiscal year 1932. It was found that on the salt-marsh areas south of Boston, work could be carried on during the open winter of 1931-2; and even in the Saugus-Revere marshes, attempts were made to keep men working, in the endeavor to relieve the distressing situation due to unemployment. In most of the projects, work was continued into February, and in some cases until April, 1932, when all construction work on state projects ceased, owing to lack of funds.

On the private projects, Cape Cod and Nantucket carried on as usual, maintaining their ditches and going on with further construction work. In the Belmont-Cambridge-Watertown Project, the town of Belmont appropriated \$750 to continue its program of work, while Cambridge did some oiling of catch-basins, using funds contributed locally for the purpose of aiding the unemployed. The town of Watertown did not make any appropriation for 1932. The town of Natick again appropriated \$500 for work during 1932.

Chapter 112 of 1931, which was the original act appropriating state funds for

mosquito control work, provided that towns and cities wherein said work was performed must appropriate funds for the maintenance of same. In accordance with this provision, the State Reclamation Board, December 14, 1931, certified to the respective towns and cities the amounts required for maintenance during 1932. Most of the towns appropriated in accordance with the assessment, although several of them were slow in taking action and in sending in the funds, so that in certain districts maintenance work was delayed. Wherever possible, work of maintenance was started not later than May 15, and in every case men were employed from the towns in which the work was to be done, and the welfare or similar board was consulted in securing this labor.

Before the work of maintenance was completed, the supplementary budget of 1932 was enacted, which provided an additional appropriation for mosquito control emergency work amounting to \$130,000. The Board at once made allotments of this new appropriation, and work was started in the former state projects, and later in the three new state projects.

Due to surveys made by the engineer and entomologist, the Board was able to decide just where worth-while work could be done that would meet, in some degree, the demand for employment, and still prove effective in the way of mosquito control.

Accordingly allotments were made to the South Essex Project (including former North Shore Project), South Shore Project, and Bristol-South Plymouth Project; and three new projects were created, one in the town of Mashpee, which was particularly hard hit by unemployment, one in Martha's Vineyard, and one in Nantucket. The allotments for these three projects were \$5,000 each, and they were of genuine service in relieving unemployment, and also produced excellent results in the work of mosquito control.

The total expenditures for mosquito control work in state projects as distinct from private projects was \$221,122.91 in 1932. Of these expenditures, 91% was paid direct to labor. In addition to these expenditures, there was spent in 1932 from funds appropriated and sent in by the towns assessed for maintenance work, in accordance with Chapter 112 of the Acts of 1931, the sum of \$16,875.85. In 1932, under the emergency appropriation, there were employed in mosquito control work 1,771 citizens of the Commonwealth, all of whom were taken from the ranks of the unemployed.

The summer of 1932 gave gratifying evidence of the effectiveness of the mosquito control work that had been done on the salt marshes of the state. Many localities where the summer season had regularly brought hordes of mosquitoes that infested beaches, golf courses, hotels and summer homes, were completely free of mosquitoes this year. This improvement of conditions has been shown by much favorable comment in newspapers as well as several letters to the Reclamation Board and the Commissioners of the various projects, and by word of mouth. While it is true that the rainfall in the early summer was abnormally small, it is also true that in that portion of the state where there are still large areas of unditched salt marshes, mosquitoes were present in the usual numbers. Mosquito breeding is greatly influenced by the amount of rainfall during the season; yet the breeding on the salt marshes is affected to a much greater extent by the periodic flooding of the marshes by the tides, which occur independent of rainfall. Previous to the large-scale drainage of the salt marshes accomplished by the mosquito control work, mosquitoes were present in abundance regardless of conditions of rainfall. Work on the salt marshes has resulted in a very marked diminution in the annoyance from mosquitoes along the entire coastline in the state, particularly from Gloucester to the Rhode Island line. That portion of the state north of Gloucester still contains too much unditched salt marsh to feel the favorable effects that have resulted where a larger portion of marsh has been brought under control. Improved conditions have already favorably affected summer resorts by practically eliminating this principal handicap to the popularity of these seashore colonies. The effects of salt marsh mosquito control have also extended to localities several miles inland which were formerly infested by migrations of salt marsh mosquitoes. In several cases there has been an actual check which proved that in 1931 certain towns were infested by salt marsh mosquitoes, and after the ditching of the salt marshes several miles distant in 1931, no infestations of salt marsh mosquitoes occurred in these towns in 1932.

FINANCIAL STATEMENTS

Appended are tables of the allotments and expenditures for the various projects, and the assessments made for maintenance work in the different projects for the year 1932.

Allotments From Appropriations for Mosquito Control Work

1. \$270,000—Chapter 112, Acts of 1931
2. 100,000—Chapter 465, Acts of 1931
3. 130,000—Item 245-b, Supplementary Budget, 1932

Appropriation	Bristol-South Plymouth	South Shore	North Shore	South Essex	Cape Cod	Martha's Vineyard and Nan- tucket	Total
First	\$90,000	\$70,000	\$90,000	\$20,000			\$270,000
Second	25,000	40,000	5,000	30,000			100,000
Third	4,500	57,500	23,000	30,000	5,000	10,000	130,000
	\$119,500	\$167,500	\$118,000	\$80,000	\$5,000	\$10,000	\$500,000
Local Appropriations and Contributions	\$3,350	\$18,200	\$150				\$21,700
Total	\$122,850	\$185,700	\$118,150	\$80,000	\$5,000	\$10,000	\$521,700

Expenditures—Mosquito Control—State Projects: Fiscal Year 1932

<i>Project</i>	<i>Total</i>
Bristol-South Plymouth	\$29,298.39
South Shore	99,047.09
South Essex	80,595.15
Mashpee	4,795.32
Nantucket State	3,911.98
Martha's Vineyard	3,474.98
Total Expenditures 1932	\$221,122.91
Total Expenditures 1931	292,487.25
Grand Total	\$513,610.16

Maintenance of State Projects:—1932

<i>Project</i>	<i>Total Assess. for 1932</i>
Bristol-South Plymouth	\$10,599.00
South Shore	9,636.00
South Essex-Southern Area	1,410.00
-Northern Area	6,114.00
	\$27,759.00

Expenditures—Mosquito Control—Other than State Projects

<i>Project</i>	<i>Previous to 1932</i>	<i>Fiscal Year 1932</i>	<i>Total</i>
Cape Cod	\$150,250.34	\$42,355.71	\$192,606.05
Nantucket	25,438.17	2,645.82	28,083.99
Belmont-Cambridge-Watertown	3,262.02	477.98	3,740.00
Natick	142.25	315.92	458.17
	\$179,092.78	\$45,795.43	\$224,888.21

Summary

Total—Other than State Projects	\$224,888.21
Total—State Projects	513,610.16
Grand Total	\$738,498.37

The Commonwealth of Massachusetts

ANNUAL REPORT

OF THE

Commissioner of Agriculture

FOR THE

Year Ending November 30, 1933



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The Commonwealth of Massachusetts

DEPARTMENT OF AGRICULTURE

To the Honorable Senate and House of Representatives:—

In compliance with the provisions of Chapter 128 of the General Laws, I am herewith making my annual report for the year ending November 30, 1933, for the Department of Agriculture.

Respectfully submitted,

ARTHUR W. GILBERT, *Commissioner*.

PERSONNEL OF THE DEPARTMENT

COMMISSIONER OF AGRICULTURE—DR. ARTHUR W. GILBERT, BELMONT.

ADVISORY BOARD APPOINTED BY THE GOVERNOR AND COUNCIL

JAMES O'BRIEN, LEE, Term expires November 30, 1934.

JOHN T. GOGGIN, SEEKONK, Term expires November 30, 1934.

JOHN BURSLEY, BARNSTABLE (WEST), Term expires November 30, 1935.

STUART L. LITTLE, NEWBURY, Term expires November 30, 1935.

WILLIAM CASEY, SPENCER, Term expires November 30, 1936.

GEORGE E. TAYLOR, SHELBURNE, Term expires November 30, 1936.

DIVISIONS AND ORGANIZATIONS

DAIRYING AND ANIMAL HUSBANDRY—*Director*, JOSEPH C. CORT, READING.

MARKETS—*Director*, LAURENCE A. BEVAN, NEWTONVILLE.

PLANT PEST CONTROL—*Director*, R. HAROLD ALLEN, TAUNTON; *Assistant Director*, QUINCY S. LOWRY, CANTON.

RECLAMATION, SOIL SURVEY AND FAIRS—*Director*, L. B. BOSTON, AUBURNDALE; *Assistant Director*, A. W. LOMBARD, ARLINGTON.

AGRICULTURIST—DANIEL J. CURRAN, MARLBOROUGH.

STATE RECLAMATION BOARD

Chairman, EDWARD WRIGHT, DEDHAM

GEN. RICHARD K. HALE, BROOKLINE

L. B. BOSTON, AUBURNDALE

Secretary, GEORGE R. STRATTON, HOPKINTON

REPORT OF THE COMMISSIONER

There existed, during the past year, a tremendous disparity between the prices that the farmer received for his produce and the prices that the farmer paid for the goods that he purchased. Farm commodity prices dropped steadily until they reached a point approximately 50 per cent below the pre-war level, whereas, in 1928 they averaged nearly 50 per cent above. The prices that the farmer paid for other goods dropped to a certain extent also, but in most cases, not below the pre-war level. It is evident that the purchasing power of the farmer has been materially decreased, and until that purchasing power is increased relatively to a pre-war level, the general return of prosperity will be handicapped.

Farm products in great volume continue to be shipped into our Massachusetts markets from other states long before the native products are available for sale and distribution. When the native products are ready for market, the price to the consumer has reached such a low level that it is difficult for the local farmer to market his farm product at a price that would yield any return above the cost of production, and it has happened in a great many cases during the past year that the Massachusetts farmer has been obliged to sell farm products at a price that is less than the cost of production. Every effort is being made to put into operation the most economical methods of production, in order to compete with the shipped-in products from every section of the United States.

In spite of their nearness to market, our market gardeners have been obliged to take rather severe losses in the marketing of their farm products, and while the

fruit growers found some little financial relief during 1933, the prices that they received for their apples did not provide a very ample leeway to take care of increased costs for equipment, materials and labor in caring for the fruit crop.

The strawberry growers have had very disastrous years during the depression when they found it necessary to sell their berries at unusually low prices following the influx of a tremendous volume of strawberries from the southern and southwestern states. Our poultrymen have found it rather impossible to make much progress in the way of securing a higher price for their eggs and dressed poultry. These men were in a position to carry on, by the practice of strict economy, when the prices of grain were relatively low, but the problem of maintaining a poultry farm with the prices of grain steadily rising is a most difficult one. The cost of labor and equipment has increased for all farm enterprises, and the prices for farm products have not increased to a level that will compensate the additional costs of production.

The dairy farmer has continued under most trying conditions to produce quality milk for our local markets. The Milk Regulation Board and local boards of health have insisted upon strict compliance with rules, regulations and inspection requirements pertaining to the dairy farm, and in many cases, the dairy farmer has been obliged to incur additional expenses for repairs and alterations that could not be paid out of the milk check. In many cases, it became necessary for dairy farmers to decrease the number of milking cows, and thereby decrease production in order that the financial loss might be proportionately less.

This Department has emphasized the importance of producing quality farm products to meet the competition of shipped-in products from other states. We have attempted to encourage in every way the use of the New England label to identify a fresh quality farm product from our local farms; and through the inspection of roadside stands, we have attempted to provide proper facilities for handling these native farm products under strict requirements for cleanliness, sanitation, location and display. Roadside markets that are able to comply with our requirements are furnished an attractive roadside sign under a lease agreement. This Department has also assisted in the organization of groups of producers into cooperative organizations, in order that their overhead cost might be decreased and that these producers might work together more economically in the production, sale and distribution of their farm products. Every possible assistance is being accorded the producer, during these trying years, to meet competition from other production areas and to carry on their agricultural enterprises which constitute a most important basic industry in this Commonwealth.

Numerous conferences and meetings have been held in the past year to formulate plans and obtain a definite understanding relating to the provisions of the milk control bill that would bring about some relief to dairy farmers. These conferences and meetings have resulted in uniting the dairy farmers on a common program, and we have gone ahead at the request of the Massachusetts State Dairymen's Association to draft a milk control bill that will provide for:

1. The appointment by the Governor, with the advice and consent of the council, of a Milk Control Board.

2. The vesting of power in this board to investigate all phases of the milk industry and to regulate the production, sale and distribution of milk.

3. The appointment of a milk administrator and such technical assistants and clerks as may be necessary to administer the milk control act.

4. The licensing of all milk dealers with power in the board to exempt certain stores and producer-distributors when such exemption does not adversely affect market conditions.

5. The fixing of the price to the producer for his milk.

6. The fixing of a resale price for milk sold to the consumer.

7. The "lost leader" clause to prevent the sale of milk at a price less than the cost of such milk, plus all handling charges.

8. A guarantee to members of cooperative dairy associations for payment of milk on the basis of the price fixed by the board.

9. The exercise of the police power of the Commonwealth in requiring all milk dealers to pay the price fixed by the board for all milk purchased outside of the Commonwealth.

10. The operation of this law as emergency legislation to continue so long as the Governor felt that the emergency existed.

This Department will endeavor to bring to the attention of the legislature the advantages that will accrue to the dairy farmer under the provisions of this milk control act, and it is expected that all agricultural organizations will unite in furthering the passage of this legislation.

During the closing months of 1933, the Federal government put into operation a milk marketing license and agreement in the Boston area that included in addition to suburban Boston cities and towns on the north shore as far as Gloucester and along the south shore including the Cape. This code attempted to fix the price paid to the producer for his milk and to fix the prices which the consumer paid for milk in its various grades and classes. There was considerable dissatisfaction in the practical operation of this marketing license and agreement, in view of the fact that many of our local dairy farmers had never received any surplus price for milk and were unwilling to equalize sales with shipped-in milk from the northern states. The protest from the local farmers was so vigorous that the first marketing agreement and license was cancelled by the Federal government and all parties at interest were invited to attend a hearing to ascertain the causes that affected adversely the successful operation of the license, and to adjust, if possible, the differences in the market, so that a new marketing agreement and license might be forthcoming.

During the last few months of 1933, several important projects were started under the supervision of this Department, for the relief of the unemployed and Federal funds approximating \$1,000,000 were used for this purpose and the expenditure of these funds was administered by a State board. The following projects had an important relation to agriculture and were supervised by the Department of Agriculture:

- | | |
|--------------------------------|------------------------------------|
| 1. Sanitary milk project | 4. White pine blister rust project |
| 2. Apple pest control project | 5. Fire protection project |
| 3. European corn borer project | 6. Knitting project |
| | 7. Mosquito control project |

The sanitary milk production project gave employment to approximately nine hundred men for a period of five months and the work consisted of cleaning, disinfecting and white-washing cow barns and advising dairy farmers in proper and inexpensive methods of producing milk under sanitary conditions. This project brought about a much needed relief to dairy farmers who had been receiving such a low price for their milk during a considerable period of time that it was a financial impossibility for them to hire help for this purpose.

Our inspection program required that the barns be cleaned and disinfected and the opportunity to provide a thorough cleaning with Federal funds assisted in no small measure to the successful accomplishment of our inspection program. Out of a possible 355 cities and towns, 322 were visited, and work was done on 8,615 dairy farms with a cow population of 93,306. The total cost of labor, trucking, materials and other costs was \$263,064.

Under the Apple Pest Control project, work was done in 296 cities and towns and 1,725 persons were employed at a total expenditure of \$392,837 for labor and materials. The objects to be accomplished under this project were the cutting down of old apple trees and cleaning up of such other trees and under-brush that were infested or likely to be infested with insect pests and diseases. The apple trees that were cut down were commercially valueless as fruit trees, and in most cases, were positively a menace to neighboring commercial orchards. About half of the trees cut down were wild cherry trees that were infested with insects. Fifty per cent of the commercial orchards in the Commonwealth were cleaned up and protected under this project and approximately fifteen per cent of the smaller orchards. Due to the closing down of this type of Federal relief project all of the commercial orchards could not be properly protected, but the entire project received

such favorable commendations that it is hoped that some way will be provided for the continuance of this insect and disease eradication program. Most of the work to be done was accomplished on private property and releases were obtained from the owners to permit the employees to enter upon the owners' premises and to release the government and State from liability for damage.

One hundred and seventy-six cities and towns were visited under the European Corn Borer project and 516 persons were employed with a total expenditure of slightly more than \$80,000. The work involved under this project consisted of digging up the corn stubble and standing stalks and disposing of such stubble and stalks by burning. The sections of the State where the corn borer has done the greatest damage were selected as the territory within which to carry on this work, and it is expected that the work accomplished will assist to a great extent in furthering the control of the corn borer which the Department has fostered for the past fifteen years.

Under the White Pine Blister Rust project 43 towns were visited in infested areas and 136 men were employed at a total expenditure of approximately \$30,000. More than 4,000 acres of pine trees were examined and approximately 18,000 stem-cankered trees were removed, and about 13,000 pines were treated for branch cankers. In the 174,701 places inspected for black currants, about 6,000 currant bushes were found. The work accomplished under this project was of considerable importance in the program of control work mapped out by the Department for white pine blister rust control.

Six hundred men were employed in the Fire Protection project which was carried on in 65 cities and towns of Plymouth, Bristol, Barnstable, Dukes and Nantucket counties. Four hundred and ninety-eight water holes were constructed which protect nearly 11,000 dwellings—that with forest lands are valued at \$40,000,000. The total cost of the project was \$115,279.16 and 99½ per cent of this amount went to labor, as tools and equipment, for the most part, were furnished by the various communities where the work was being done. Before the project was completed more than \$210,000 worth of property is known to have been saved by the use of these water holes by local fire departments.

The State Knitting project which was administered by the Department was organized through the County Extension Services and gave employment to 1,090 women. There were 75 separate knitting groups organized and every county in the State with the exception of the Island counties was represented. The project cost \$202,075.26 and the value of the materials made was appraised at \$104,615. The knitted articles were turned over to the various welfare boards for distribution to the needy.

Through the State Reclamation Board there were several mosquito control projects, part as regular CWA projects and part Federal projects. In all 1,038 men were employed. The amount of money spent was \$151,796.41 and was furnished by the State Civil Works Administration, the Commonwealth of Massachusetts and the U. S. Department of Agriculture. A more detailed account of this project is recorded under the report of the State Reclamation Board found in another section of this bulletin.

All of the relief work accomplished under these Civil Works projects will react to the benefit of Massachusetts agriculture, and many of the persons employed were farmers who were having considerable difficulty in carrying on their farm enterprises under the circumstances that the depression had brought about. The work was widespread and had a definite educational value, in that the persons employed under the different projects contacted many persons who had not previously been reached by Department representatives. The entire program was carried out with a measure of efficiency and effectiveness that bespeaks a seriousness of purpose and a conscientious effort of each person employed either in a supervisory or laboring capacity.

MASSACHUSETTS FARMS FOR SALE

For more than fifty years the Massachusetts Department of Agriculture has listed farms for sale in this Commonwealth. This publication has been the means of finding buyers from all over the United States to purchase our farms which for one reason or another are offered for sale. This list has been particularly valuable

during the past two or three years when there has been a considerable movement of population from other areas to this State. Since the World War the price of western land and the cost of producing farm products there has been so inflated that many good farmers have found it necessary to sell out their properties and go elsewhere. Some of these have come East to buy our farms which are much nearer markets, and offer in many instances a greater opportunity for success than the lands which they have left.

There is a definite tendency for decentralization of our industrial population in Massachusetts. Many persons living in urban centers have sold or rented their properties and moved into the suburbs, where they find it possible partially to maintain themselves and their families by raising a limited amount of food in their own back yards. This movement has called for an unusual demand for the location of properties which are for sale, and many of them have changed hands during the last five or ten years.

The properties which change hands quickest are, of course, the smaller and less expensive ones, but our records would indicate that a considerable number of large farms have also been sold through the medium of this bulletin.

FARM LABOR

Farm labor activities in this Department have been little called for during the past year because unemployment has provided ample labor for farmers in their own localities. A large number of persons have applied to the Department for work, but it has been very difficult to place them in positions because of this abundance of local labor. The price of labor has dropped very noticeably, first, because of the inability of the farmer to pay the customary higher wages; and second, the desirability of the former to work at any price which may be secured. However, some employers have succeeded in procuring excellent managers and other assistance through us, as usual.

SUMMER VACATIONS

This Department has continued to publish its bulletin "Vacation in the Country," which lists farm homes which are available for summer vacations for people living in urban centers. This bulletin has been in greater demand than ever. During this depression, a considerable number of persons have found it impossible, because of the cost, to spend their vacations on the sea shore and at other similar resorts. They have, therefore, turned to farm homes. Here they have found increasingly good facilities, to the extent, apparently, that many of them have decided that the greatest satisfaction for a real summer vacation can be secured in the country where fresh food is abundant and opportunities for recreation and rest are always present.

The increased use of our excellent highways has also stimulated the development of overnight facilities by farmers who live along these roads.

Through the helpfulness of this Department, the Massachusetts State College and other agencies, as well as the impetus of the owners themselves, there has been a marked tendency to improve these country facilities during the last two or three years. They have been modernized, made more sanitary and attractive.

This bulletin has been sent to thousands of persons in various parts of the country, particularly in the cities of the East. Many school teachers have taken advantage of information contained in it to procure a suitable place for a summer vacation. Families with children have found farm homes to be well adapted to their requirements.

Several talks over the radio have tended to increase interest in this type of summer vacation, and have resulted in an increased number of inquiries to this Department concerning it. We believe that the use of farm homes for city dwellers has great possibilities in this Commonwealth.

AWARDS RECOMMENDED FOR AGRICULTURAL ACHIEVEMENT

The following were recommended for special recognition at the time of the Union Agricultural Meeting in Worcester to be held on January 4, 1934:

John G. Ellis, Lee, For the Improvement of Animal Husbandry.

Edward Dwyer, Weymouth, For Creditable Accomplishments in Dairying.

Clarice Jones, Stoneham, For Accomplishments in 4-H Club Work.

Chester Pilch, Feeding Hills, For Accomplishments in 4-H Club Work.

REGULATORY WORK OF THE DEPARTMENT

The result of an intensive education program coupled with numerous hearings on violations of agricultural laws and some necessary prosecutions appear to have brought about a satisfactory situation insofar as the enforcement of our agricultural laws is concerned.

The Apple Grading Law

The optional provisions of our Massachusetts Apple Grading Law, which was amended two years ago, and now permits the fruit farmer to pack apples in closed containers without a grade mark, has had a tendency to relieve the burdensome aspects of the old compulsory grading and packing law. If the fruit farmer voluntarily packs apples under an official grade, it is naturally expected that he will comply fully with the provisions of such grade, and our experience rather indicates that this compliance is forthcoming. Fruit growers have practised in general a thorough system of spraying that has resulted in cleaner fruit, and we have found that in consequence of this general improvement in the production of apples there is less overfacing on the market. The instances of our inspectors finding packages of apples that were overfaced, and wherein the top layer did not represent the contents, have become much less frequent than in other years. Our prosecutions of violations of the Apple Grading Law during the past year have been practically negligible, due to the cooperation that we have received from the fruit growers and others in the grading, packing and marketing of their apples.

Corn Borer Control

It has been the policy of the Department of Agriculture, during the past several years, to hold hearings on corn borer violations and acquaint the violator with the provisions of the law and the damaging results of corn borer infestations, and further instruct all parties concerned with the control measures that must be practised under the law. This policy has worked to good advantage and there have been very few repetitions of neglect or failure to comply with the law. All second violations have been prosecuted in the courts. A corn borer control project was established under the Civil Works Administration of the federal government, and this project had for its objective the digging up and destruction of corn stubble and corn stalks. More than 500 persons were employed in 176 cities and towns for the purpose of destroying all corn stubble or stalks that could be located. This project started in November and the regular inspectors were not employed as usual to report violations of the corn borer law in the territory that had been assigned to them. Many persons were contacted under the federal program and the destructive influence of the corn borer brought to their attention, and it is expected that the educational aspects of the corn borer control project will be of considerable regulatory value.

The Seed Law

Five hundred and seven official seed samples were collected and submitted to the seed laboratory at Amherst, Massachusetts. These seed samples were tested and analyzed and an official bulletin was issued by the Massachusetts Agricultural Experiment Station with a complete statement of the findings of the seed analyst.

The official seed samples submitted would indicate that a better quality of seed was sold on our Massachusetts markets. There is, however, room for improvement in several respects. The seed law is in effect a labeling law and requires certain definite information on the label that is attached to each container of agricultural seed. It has been impossible in some cases for the inspectors to obtain adequate information, because the labels on the seed container were lacking in required information. Vegetable seeds in general were labeled in accordance with the provisions of the law, but the per cent of germination as determined by the seed laboratory, indicated in many cases, a germination that was much too low to insure a satisfactory crop for the farmer.

Our seed dealers should insist upon adequate information on the label and should insist upon a vegetable seed of high germinating qualities. The farmer is burdened with the expense of the same preparation of the soil and the same amount of fer-

tilizer and spray material for poor seed as well as good seed, and it has been the purpose of this department to call to the attention of the seed dealer that he should furnish the purchaser with the quality of seed that will reasonably guarantee a satisfactory crop.

It will be the policy of the department to hold official hearings on violations that appear of record from the seed testing laboratory and definitely instruct the dealer regarding the provisions of the seed law and the way that the law should operate. A second violation by the seed dealer of any provision of the seed law will necessitate that case being brought to the attention of the courts.

REPORT OF THE DIVISION OF DAIRYING AND ANIMAL HUSBANDRY

MILK REGULATION BOARD

By authority granted the Milk Regulation Board in 1932, the following regulations for the inspection of dairy farms producing milk for distribution, sale or exchange in the Commonwealth were established:

1. *Employees*.—No person having a communicable disease listed below or who shall care for any person having any such disease shall handle milk or milk utensils. No dealer or distributor shall knowingly sell or distribute milk shipped from a dairy farm where there is a case of such communicable disease.*
2. *Cows*.—All diseased cows shall be removed from the milking herd. No producer shall sell milk obtained from any diseased animals.
3. *Dairy Barn*.—The construction and maintenance of the place where milking cows are kept shall be based upon the following items:
 - (a) Adequate light shall be provided. Windows shall be kept clean.
 - (b) Sufficient ventilation shall be provided.
 - (c) The floor and gutters shall be tight, clean and in good repair.
 - (d) Walls and ceiling shall be tight, clean, and in good repair. They shall be whitewashed at least once a year, unless finished with a surface that can be easily cleaned.
 - (e) Milk stools shall be kept clean and be stored in a clean place.
 - (f) All cow yards shall be kept reasonably clean and dry.
 - (g) All manure shall be removed or stored or disposed of so as to prevent the breeding of flies therein, or the access of cows thereto.
 - (h) No fowls or animals other than dairy cattle shall be kept in parts of the barn used for dairy purposes.
4. *Milking*.—The udders and teats of all milking cows shall be kept clean and the flanks, bellies and tails shall be free from manure and loose dirt at the time of milking. The hands of the milkers shall be washed clean immediately before milking and kept clean and dry during the process of milking.
5. *Milk House or Room*.—A properly constructed milk house or milk room shall be provided for the handling of milk and the storage of milk containers and utensils.
 - (a) The floor shall be tight and graded to provide proper drainage.
 - (b) The walls and ceiling shall be of such construction as to permit of easy cleaning.
 - (c) Sufficient light and ventilation shall be provided.
 - (d) It shall be kept in a sanitary condition and as free as possible from flies.
 - (e) The door shall not open directly into a place where milking cows or other animals are kept or into any room used for domestic purposes.
 - (f) A properly constructed cooling tank of sufficient size and depth, or other approved cooling facilities shall be provided in the milk house, milk room or other approved location.
 - (g) The cooling facilities shall be used for no other purposes than the cooling and storage of milk. They shall be protected from contamination and maintained in a sanitary condition.
 - (h) Non-rusting metal racks for the draining and storage of containers and other utensils shall be provided.

* Among the diseases known to be spread by milk are tuberculosis, typhoid fever, scarlet fever, diphtheria, septic sore throat, foot-and-mouth disease, dysentery and other intestinal infections.

6. *Straining and Cooling.*—Milk shall be strained in the milk house or milk room as soon as drawn from the cow. The cooling of milk shall begin immediately after straining. Within two hours, its temperature shall be 50 degrees Fahrenheit and maintained at that temperature until delivery or collection is made.
7. *Utensils.*—All containers and utensils used in the handling or storage of milk shall be made of metal or glass constructed so as to be easily washed and shall be in good repair. Joints and seams shall be soldered flush. Metal containers and utensils which are rusted on the inside surface shall not be used in the handling or storage of milk. Single service filter pads or strainer cloths shall be used.
8. *Care of Utensils.*—All containers and utensils used in the handling or storage of milk shall be washed and sterilized after each use, and stored so as to prevent contamination. The sterilizing may be done with boiling water, dry heat, live steam or sodium hypochlorite.
9. *Water Supply.*—The water supply shall be easily accessible, adequate, and of a safe, sanitary quality.
10. *Toilets.*—Every dairy farm shall be provided with a sanitary toilet or privy, properly located, well constructed and maintained in good condition.

Further authority was granted the Milk Regulation Board to establish rules and regulations for grades of milk. Two public hearings and one meeting were held with milk producers, milk inspectors and milk dealers to draw up a set of regulations establishing grades of milk. The act giving further authority to the Milk Regulation Board relative to grades of milk also repealed Sections 13, 14, 14a and 15 of Chapter 94, General Laws.

DAIRY FARM INSPECTION

On August 1, 1933, and under the direction of the Milk Regulation Board, six dairy farm inspectors were appointed and started farm inspections. Previous to starting work, the dairy farm inspectors were given a course of instructions, including a few days at the Massachusetts State College and also a few days actually inspecting farms under the supervision of Ernest T. Kelly of the Dairy Division, United States Department of Agriculture. Several meetings with local milk inspectors were also held and instructions given to both state and local inspectors relative to the use of the new score card and interpretation of the regulations.

The following is a summary of the farms which were inspected from August 1, to November 30, 1933:

	FIRST INSPECTIONS					REINSPECTIONS		
	Aug.	Sept.	Oct.	Nov.	Total	Oct.	Nov.	Total
Massachusetts.....	430	87	123	39	679	59	64	123
Maine.....	73	19	0	1	93	0	20	20
New Hampshire.....	188	88	38	13	327	0	1	1
Vermont.....	102	751	502	471	1,826	14	94	108
New York.....	17	235	60	0	312	0	132	132
					3,237			384

NOTE.—In addition to the inspection by state inspectors, 3,460 inspections were made by city and town inspectors, making a total of 7,081 inspections during this period.

CERTIFICATES OF REGISTRATION

The procedure for issuing certificates of registration is as follows:

1. Annual application for dairy farm registration, Form D-1 (9973) will be made on forms provided by the Director and shall contain certain information. This will require mailing thirty to forty thousand blanks during the year. Applications will be received, checked and filed by states and then alphabetically by towns and names. All producers not responding to notice of expiration within thirty days shall be sent a second or final notice, Form D-2. The name and address of the applicant will be placed in metal file directory by states and alphabetically. This file will give quick access to the producers who have applied for registration.
2. Inspection of dairy farms on score cards, Form D-3 (8609) will be made by department inspectors or by city and town inspectors that continue to do farm

inspection. A copy of all score cards will be sent to this office. These score cards will be filed by states and alphabetically by towns and names. Each producer will have an individual folder containing his score card; in cases of reinspections, several score cards will be in the folder. This folder will also contain a carbon copy of the certificate, Form D-4 (9640), when issued.

3. When the application, Form D-1 (9973) and score card, Form D-3 (8609) are approved, a certificate, Form D-4 (9640) will be made out in duplicate, original mailed to producer and duplicate placed in producer's file. Applications, Form D-5, should be addressed and expiration date typed to be sent out four weeks in advance of expiration of certificate (1935). These addressed blank applications should be filed away according to date of expiration, which is June 30th, for farms located within the Commonwealth, or for farms outside the Commonwealth at a date determined by Milk Regulation Board.
4. In the case of a producer's farm not being approved, reinspection will be made in sixty to ninety days. If approved at that time, the same procedure as in Paragraph 3 will be followed. If not approved on reinspection and the certificate is to be refused, suspended, or revoked for failure to comply to dairy farm regulations, a Notice of Hearing, Form D-5, must be sent to the producer. Thirty days after the hearing (1) Notice of Refusal, Form D-6, (2) Notice of Suspension, Form D-7, (3) Notice of Revocation, Form D-8, or (4) the issuance of a certificate, Form D-4 (9640), must be sent to the producer.
5. A notice, Form D-9, must be sent to dealers and Boards of Health that certain producers cannot sell their milk if certificate is refused, suspended or revoked.
6. On the application, Form D-1 (9973), the Director may ask for certain information: i.e., number of cows and heifers, amount of milk produced and sold, etc. These statistics will be compiled from time to time.
7. In addition to the requirements on the annual application, Form D-1 (9973) the Director may request a complete statement of the producers' statistics including milk sales, milk production, number of cows and heifers, etc., for any month of the year and will be made out on Form D-10. Statistics such as can be compiled from these statements have never been available and will be valuable information to the dairy industry.

MILK QUALITY IMPROVEMENT WORK AND CHECK TESTING

Improving the quality of the milk produced on Massachusetts farms continues to be one of the problems of the division. The quality work was done as in the past by using the methylene-blue test and the sediment test. In cases where the tests showed poor quality, the inspectors have followed up the work by making visits to the farms and offering suggestions for correcting the causes of the poor milk.

Section 29-A of Chapter 94 of the General Laws was amended this year giving the department authority to determine whether or not the rules and regulations pertaining to the methods and frequency of making certain tests of milk and cream are being complied with. The following is a summary of this work:

Pasteurizing milk dealers	318	Producers interviewed	1,017
Raw milk dealers	223	Farms visited	402
Producer milk dealers	746	Butter fat tests made	1,998
Reductase tests made	2,650	Lactometer tests made	435
Sediment tests made	4,550	Total solids computed	129
Temperatures taken	1,727	Milk plants visited	490
Producers Milk tested	5,374		

Check testing was done at the following milk plants:

H. P. Hood & Sons	Shelburne Falls
F. B. Mallory	Springfield
H. P. Hood & Sons	"
General Ice Cream Corp.	"
United Dairy System	"
United Dairy System	Northampton
Brookside Dairy	"
Producers Dairy Co.	Brockton
H. F. Soderholm	West Bridgewater

Quality milk work was performed in the following towns and cities:

North Attleborough	Westminster*	Dartmouth
Taunton*	Leominster*	Wareham
Easthampton*	Gardner*	Gloucester*
Chicopee	Webster	Middleton
Southbridge	Dudley	Attleboro
Westfield	Reading	Greenfield*
Braintree	North Andover	Milford*
Brockton*	Methuen*	Mendon*
Stoneham	Lawrence	Rockport
Wakefield	Clinton	Essex
E. Bridgewater	Berlin	Ipswich
W. Bridgewater	Newburyport*	Amesbury
Marlborough	Newbury*	Haverhill
Hudson	W. Newbury*	Athol
Pittsfield	Salisbury	Orange
Fitchburg*	New Bedford	Northampton
Lunenburg	Fairhaven	

*Towns worked in more than once.

The results of the reductase test were as follows:

Class 1. (Excellent)	1,832 = 64.6	%
2. (Good)	596 = 21.	
3. (Poor)	278 = 9.9	
4. (Very poor)	129 = 4.5	
	<hr/>	
	2,835	100%

BONDING LAW AND FINANCIAL REPORTS

The law requiring milk dealers to submit a financial report was repealed, and a section covering a bonding law was inserted in its place. Preliminary work under the bonding law was started but will not become effective until March 1, 1934.

MILK MARKETING AND SURVEYS

The division assisted in organizing the Milk Dealers' Association in Chicopee and the local Dairymen's Association of Hampden and Hampshire counties, and in the stabilization of milk prices in Chicopee, Springfield, and Holyoke. A milk consumption survey was made in the city of Springfield.

OLEOMARGARINE

Due to the low price of butter, oleomargarine is not being offered for sale in many stores. Very little of this type of inspection work has been done. A total of 650 stores and restaurants was inspected.

HORSES

The increased interest in horses still continues and the usual assistance was given in conducting the dynamometer horse pulling contest at the Eastern States Exposition at Springfield. The Boston Horse Show, in which a good deal of interest in commercial horses is usually shown, was not held this year due to the depression.

SHEEP

Wool, amounting to 25,000 pounds, was collected to be made into virgin wool blankets, netting 248 farmers considerably more than the market price of wool. Assistance was given to farmers in buying and selling over 300 sheep and also in disposing of over 350 lambs, mostly for the Easter market.

POULTRY

Record of Performance.—For this year the grade known as "Massachusetts Record of Performance Accredited" was carried on with very good results. There were sixteen poultry plants under the supervision of the division, and unannounced

visits to these plants were made, taking over the trap nesting work for the day and checking the trap sheets for accuracy. For the coming year, applications have been received from twenty breeders, showing an increased interest in the work.

At various times throughout the year, articles were written for magazines and Sunday papers, giving the meaning of R. O. P. work in this state, the results our R. O. P. breeders had in comparison with other states and the splendid record our R. O. P. breeders made at egg laying contests. Every Massachusetts R. O. P. breeder who entered birds in egg laying contests throughout the country made a record to be proud of.

On the work that this division supervised, there were 5,717 birds entered which were trap nested and records kept on, and of this number 1,862 met the grade requirements by laying at least 200 eggs in 365 consecutive days which averaged to weigh at least 24 ounces per dozen from February 1st to September 1st.

All birds entered for R. O. P. inspection must first meet the certification requirements.

Certification.—For the past year under the "Massachusetts Certified Accredited" grade there were 36 poultry breeders under our supervision with a total of 42,311 birds inspected.

Each bird was inspected and legbanded, providing it met the grade requirements for Pullorum disease freedom, health and vigor, productive capacity and reasonable freedom from standard disqualifications.

During the hatching season two visits were made to check on the size of all hatching eggs set and to make sure that the grade requirements were lived up to by the various breeders.

Miscellaneous.—During the year the department was called upon to assist the poultrymen of the state with many problems. Some of the matters in which assistance was given are as follows:

1. Preparing fresh egg and poultry thieving laws.
2. Establishing a New England Export Association to promote the sale of breeding stock in other countries.
3. Preparing and explaining a proposed Breeder-Hatching Code.
4. Interviewing some poultrymen who were advertising falsely.
5. Control of infectious Laryngotracheitis Vaccine in this state.
6. Started the plans for a Pullorum Accredited grade of poultry.

REPORT OF THE DIVISION OF MARKETS

Activities of the Division of Markets during the past year have included numerous emergency measures in addition to the regular service and promotional work.

Prominent in this respect has been the increased amount of shipping point inspection of apples resulting from the fact that our state apple crop was larger than usual while many of the middle western states experienced comparative shortages.

Shipments of Massachusetts apples to the middle west were the largest on record. The corresponding increase in the demand for shipping point inspection and certification made it necessary to expand this service to handle not only a larger volume of apples, but also to cover a greater number of producing areas.

The temporary establishment of the Civil Works Administration provided a fine opportunity for the furtherance of the apple maggot control program. Several control projects covering the entire state, but concentrating on the principal fruit growing regions, were set up under the supervision of this division. Fact finding work carried on by the division over the past four years was used as a basis for the conduct of the Civil Works projects.

Encouragement of increased consumer use of native products has featured the retail market news service. Radio talks, news articles, charts and other material of similar nature have been used in this work of bringing to the attention of consumers timely information regarding the availability of locally produced food supplies.

The regular services, including market news, standardization of grades, inspection work, etc., have been maintained on regular seasonal schedules.

MARKET NEWS SERVICE

Reports on Farmers' Produce Markets in Boston, Worcester, and Springfield have been continued daily throughout the year.

A Special Apple Market Report has been issued regularly during the apple season. Extra reports were published during the height of the apple movement in order to keep growers in timely touch with market developments. An important addition was made to this service during the past year in the form of monthly reports on cold storage holdings of apples in country towns. Heretofore the cold storage information has been confined to the large city warehouses. The rapid growth of country cold storage facilities, however, has placed this phase of the industry in a highly important position, resulting in a need for timely information as to the volume of apples stored outside of the large city markets. This need has been met by a monthly publication of reports from country points.

RETAIL MARKET REPORTS

The Boston Retail Price Report has been issued regularly the first Tuesday of each month. The report, headed by a market news paragraph directing attention to native products available in market and particularly plentiful or low priced products, gives the range of commonly prevailing retail prices on fruits, vegetables, meats, fish and dairy products. Besides use in statistical studies, the report is used by homemakers and others buying on a retail basis, and during the past few years has been used increasingly by welfare agencies preparing menu and budget guides. During the year the division took active part in outlining weekly market budgets and menus on a graduated cost basis.

SHIPPING POINT INSPECTION

Shipping point inspection of apples during the year has established a new record both as to amounts of apples inspected and scope of activity. This service which has been in operation for three years has heretofore been confined practically entirely to the inspection and certification of apples intended for shipment to export markets. This year, however, there has been an increasing demand for the use of inspection and certification of apples shipped to domestic markets from New York and large middle western cities.

Approximately 70,000 bushels of apples were inspected. Fees collected for the certificates and paid into the state treasury totalled about \$850.

This shipping point inspection service is carried on under a cooperative agreement with the United States Department of Agriculture. In addition to apples, a small number of inspections were also made on pears, with service available on onions and potatoes, but there is only a nominal demand for use on these latter commodities this season.

STRAWBERRIES

The strawberry inspection service at Falmouth carried on at the request of and under an agreement with the Falmouth Strawberry Growers' Cooperative Association was continued during the past year. Approximately 20,000 crates were inspected.

The cooperative movement among Falmouth strawberry growers is showing gratifying progress. The two active farmers' associations in that section have recently combined under one organization which will bring into the new association more than half the growers on the Cape and which is expected to result in an increase of more than 100 per cent in the output of graded and inspected strawberries.

APPLE GRADING LAW

Regular inspection work was carried on throughout the season at city markets, leading shipping points, and in cold storage warehouses. The past season's experience has given further evidence of proof that the revisions of the law as promulgated in 1931 are meeting the requirements of the industry.

APPLE MAGGOT

Apple maggot control during the last year centered largely around the development of maggot free areas in several of the important apple producing sections.

This work has been carried on in cooperation with the county extension services. In addition to this, inspectors of this department have examined numerous samples of apples for the purpose of assisting growers in checking up on the effect of control measures.

The apple maggot control program now in its fourth year of operation under a special legislative appropriation and having as its aim the control of this most serious apple pest, has seen partial fruition of its goal during the past year in the apple pest control program conducted by the Civil Works Administration under the supervision of this department.

The investigational work, the mapping of badly infested areas, and the other fact finding activities carried on by this department were used as a basis for the control program approved by the civil works board.

The elimination of neglected trees under the Civil Works project has been of great assistance in checking the spread of the maggot. However, large work yet remains to be done. The Civil Works project was carried on only with the permission of land owners. While in general the owners of land containing pest breeding trees were very cooperative, there were some instances where such land owners would not permit the removal of apple trees. The present seems a strategic time in which to capitalize on the favorable results of the Civil Works project by an intensive check up in the sections which were not completely covered. There is also considerable agitation among growers for more stringent compulsory spray legislation in order to control the spread of the maggot as well as some of our other apple insects and diseases.

STANDARDIZATION WORK

Egg inspection work was continued throughout the year under the Farm Products Grading Law. Records were kept of inspections made at both the Springfield Egg Auction and the Brockton Egg Auction. These reports were later analyzed for the purpose of checking or determining the practicability of the present state grades. This information was later presented to the directors of the Brockton Auction for discussion.

Educational material was collected and disseminated on the various methods of retaining egg quality. A bulletin was also compiled which included such information as was available on egg marketing, standards and grades, laws and regulations and other valuable data pertaining particularly to Massachusetts poultrymen.

The department also cooperated with the Farm Bureau, Egg and Poultry Committee, on egg and poultry legislation. Proposed Fresh Egg Laws and Poultry Selling and Transportation Laws were drafted.

Inspection work on turkeys was done during the Thanksgiving and Christmas marketing periods. Two special reports were issued on turkey market information, including Worcester, Springfield, and Boston. A turkey crop survey report, as well as a survey on distribution or method of sale was released.

Market information on asparagus was collected regularly throughout the season for analyses. This type of information has been gathered in years of high prices and low prices in order to determine the effect of certain quality factors on price.

Inspections of graded Massachusetts asparagus were made three nights a week. Inspections of graded strawberries were also made in season. In all inspection work it is the purpose of the department to promote improvements in methods of marketing. Suggestions for improvements are offered whenever possible. Any new information which is available is passed along to producers so as to keep them in touch with changes in methods which are taking place.

Roadside stands which carry a state shield were also inspected frequently. The purpose of this work is for the benefit of producers and consumers alike. These stands are inspected for cleanliness, quality of produce, and quality of display. Again all available information regarding new methods of marketing or advertising are offered.

FARM ROADSIDE MARKETS

The inspection service of farm roadside markets leasing the state sign was maintained throughout the season. A new metal sign of the same design but more durable than the original and with colors reversed—a background yellow and markings

blue—was displayed by 47 stands under the 1933 lease agreement. Users of the sign formed an association principally for advertising and publicity purposes and the group plans greater activity in the future.

STATISTICAL INFORMATION

Growing interest for information on Boston food supply, the principal sources, seasons and sources of competition for native produce is manifest in the increasing demands for the mimeographed annual bulletin "Receipts and Sources of Boston Food Supply." Requests for the publication represent varied interests including farmers, farmer organizations, marketmen, retail store concerns, homemakers, research workers, economists, transportation agencies, students, teachers and welfare agencies. "Receipts and Sources of Boston Food Supply" is a compilation and tabulation of amounts and sources of the principal foodstuffs coming to Boston. Terse, supplementary reviews relating to and explaining the situation of many of the products accompany the statistical data. Information gleaned from personal interviews and study and analysis of past records produces the information for these summaries. The publication presenting much detailed information in concise form, easy for reference, is used repeatedly in connection with department activities, such as fairs, farmer market plans, special market investigations, department talks and general publicity.

A complete, detailed summary of the weekly receipts and average prices of important locally produced vegetables sold in Boston market was prepared for the 1932-33 season as in previous years and published as a guide to market gardeners in planning their crop operations.

In connection with special investigations and studies conducted during the year and in response to requests for particular information much statistical information was tabulated, such as crop production, market receipts, retail and wholesale prices, seasonal and sectional trends and comparisons in amounts and prices.

GREATER USE OF NATIVE PRODUCTS

The division continued to encourage increased use of native products by various means. Lectures and radio talks were prepared and given, newspaper and magazine articles on such subjects as canning, fish in the diet, roadside markets, and individual native products were written and information for more articles given newspaper representatives. Also, a native season chart was arranged showing periods during which market supplies of local products are most liberal, quality best, and prices moderate. Mimeographed copies of the chart were distributed to familiarize consumers with the native fruit and vegetable seasons and to guide budget planners in taking complete advantage of the native seasons.

A brief study of canned milk business with relation to fresh milk with special reference to use of both by city welfare clients was made in Worcester at the request of the Worcester County Extension Service, prompted by the Worcester County dairymen.

COOPERATIVE RELATIONS

The division has enjoyed a continuance of pleasant cooperative relations with public agencies and with trade organizations.

Through cooperation with the United States Department of Agriculture radio market news has been broadcast daily over Station WBZ. This has provided timely information for producers, distributors, and consumers. The wide coverage provided by the radio service is very helpful in facilitating the distribution of farm products by keeping growers in close touch with market conditions and by keeping housewives informed as to the kinds and varieties of locally grown products available.

Crop reports, valuable sources of basic information, have been continued in cooperation with the New England Crop Reporting Service.

The work of the division with groups of farmers during the past year has further emphasized the value of joint action on the part of farmers. Such organized effort provides excellent opportunities for thorough discussion of mutual problems and makes possible a much more effective expression of opinion than can be secured through individual action.

FISH PROMOTION

The legislature passed a bill authorizing the department to carry on a program for the promotion and development of the commercial fishing industry.

This Department immediately took the opportunity of arranging an exhibit showing fish products and some of the picturesque gear used by our fishing boats. This display occupied a large space at a fair in Boston where many consumers became interested in the articles shown. Fine cooperation was given by the fishing industry in furnishing material.

Other work already started deals with information being given out to consumers, by radio and pamphlets, about the different varieties of fish available by season, and methods of preparing them for the table.

REPORT OF THE DIVISION OF PLANT PEST CONTROL

The Division of Plant Pest Control inspects stock growing in the nurseries of the State and all similar stock brought in from other States and imported from other countries. Clean plants and trees for fruit growing and landscape work are thus assured. The control of pests that may be injurious to agricultural crops while growing or in storage or in the manufactured form is facilitated thru advice and assistance given by this division. The division is also responsible for the enforcement of laws, regulations, and quarantines to prevent the spread of new and injurious crop pests. Field surveys and investigations are made by the personnel of the division for the purpose of controlling such pests as the Satin Moth; Oriental Moth, Japanese Beetle; European Corn Borer; Scale Insects; White Pine Blister Rust; Cedar Rust, etc. In the control of pests that have a national importance, because of the danger of spread to other States, the division actively cooperates with the Federal Government.

Prior to 1900 there were very few nurseries in the State, and these were small. At the present time, however, there are 339 which have been certified by this division, totaling over 3,000 acres of growing stock. Most of these nurseries are located in the more thickly populated eastern part of the State, but some large nurseries are in the central and western sections of the Commonwealth.

In addition to the certification of nurseries, the law requires that all persons engaged in selling nursery stock must be licensed. During the last fiscal year, the division issued licenses to 487 such agents.

The division keeps in close touch with all of the nurseries, inspecting them several times a year for different insects and plant diseases. This past season an inspection of the growing stock showed it to be apparently free from injurious pests. The property surrounding the nurseries was also given careful examination in order to make sure that pests would not enter the nurseries from this source. This inspection showed that this property was also apparently clean. The sales of nursery stock in Massachusetts amount to more than a million dollars a year, and while it is difficult to place the value of our inspections in dollars and cents, it is absolutely essential that stock sent out from the nurseries be absolutely clean; otherwise, it would not thrive and there would also be danger of spreading pests which might cause inconceivable damage. The nurseries must be kept up to the standards set by other States, or the business which is now here would be lost. The development of the nurseries also increases the value of land which might otherwise be unproductive. In this way a large revenue is brought into the treasury of the local communities.

EUROPEAN CORN BORER

The European Corn Borer which was first found in the vicinity of Boston in 1917, has gradually spread until at the present time most of New England is infested, as well as New York and some of the western States. Its ravages were so serious in Massachusetts ten years ago, that most of the market gardeners in the vicinity of Boston were obliged to give up the practice of growing sweet corn for market. The experiments that the Federal Government have carried on, demonstrate that a partial control can be obtained by plowing the corn fields before the cold weather sets in. In addition to controlling the corn borer, this is a good farm practice. In 1923 the Legislature passed an act requiring that corn stubble be either plowed or destroyed by December 1. This pest is still causing considerable damage, and if

the above practice were eliminated, there is little doubt but that it would be almost impossible to grow sweet corn in Massachusetts. Canada and several States that are not infested with this insect prohibit the importation of plant products from Massachusetts unless they are accompanied by a certificate of inspection. It is, therefore, necessary for this department to examine these plants and certify them.

JAPANESE BEETLE

The Japanese Beetle is another imported pest which is now firmly established in Massachusetts and is capable of doing considerable damage to all branches of agriculture. It is a serious pest to the fruit grower, farmer, and nurseryman. The adult which is a beetle, attacks both shade and fruit trees. A considerable part of this insect's life is passed within the ground as a grub, and in that stage feeds on the roots of trees and grasses. In this form, if the beetle population is heavy it may be injurious to golf courses and especially troublesome to nurserymen.

A careful inspection was made in the nurseries and the property surrounding them, to determine whether or not this insect was present. The findings were one beetle. However, this was not found on nursery stock. This pest has been found in all the New England States, and in order for nurserymen to make shipments of stock from the infested area to points outside or for farmers and florists to ship corn, beans, berries, or cut flowers, they must have the stock certified. At the present time this insect is causing very little damage in Massachusetts, but, if the degree of infestation increases, it is possible that injury to some crops and trees will be manifested. This pest, however, is easy to control; the adult by spraying with arsenate of lead, and as a grub by treating the soil either with arsenate of lead or carbon bisulphide.

WHITE PINE BLISTER RUST CONTROL

The Division continued to enlist the cooperation of property owners in protecting the white pine forests of the Commonwealth from further damage by the white pine blister rust. This fungous disease of white pine trees and Ribes (currant and gooseberry bushes) is now (November 30, 1933) known to have attacked white pines in 343 of the 355 cities and towns in the State, and continued vigilance will be needed for some time to come to keep the disease in check.

The attempt to continue so far as possible, the policy of securing the eradication of Ribes through the cooperation of local pine and Ribes owners was not an easy task during 1933. Economic conditions had depressed pine values and had also reduced the incomes of many owners to the point where expenditures for other than the necessities of life were not possible. However, 567 pine and Ribes owners were willing to cooperate and participated in the examination of 81,980 acres of land. From this area 252,611 wild Ribes were cleared and it was found necessary to destroy 2,820 cultivated Ribes.

Early in the field season, we were called upon to assist in the Emergency Conservation Work (E. C. W.) activities by the assignment of trained men to ten of the Civilian Conservation Corps (C. C. C.) camps in Massachusetts. Six experienced foremen were selected from our temporary personnel. At each camp, one or two crews of five men and a sub-foreman were selected from the enrolled personnel and then trained in control methods. Much might be recorded regarding this work, but suffice it to say that the work actually accomplished was well and thoroughly done. State Forest areas aggravating 11,807 acres were covered by these C. C. C. crews and 176,755 wild and 49 cultivated Ribes eliminated.

In August, funds were allocated to the U. S. Department of Agriculture from the appropriations provided by the National Industrial Recovery Act (N. R. A.) and a small appropriation was made available for blister rust control work in Massachusetts through this Division. Obviously, it was too late in the season to expect to accomplish very effective work due to the defoliation of Ribes. It was possible, however, to select areas where the Ribes were holding their leaves and very good results were obtained. In any event, the real need was to put men to work and this was accomplished in a minor way, in that we were able to give part-time employment to eighty-three previously unemployed laborers for a total of 7,258½ man-hours. Control work was performed on 3,320 acres of land and 124,407 wild Ribes destroyed.

In Barnstable, Essex, Middlesex and Worcester Counties, work of canvassing properties for the purpose of locating and eliminating plants of the European black currant was continued. It has been deemed necessary to eliminate these plants on a State-wide basis, because of their exceptional susceptibility to the rust. The owners of such plants have given the Division almost unanimous cooperation in this special control work. The canvass during the 1933 field season involved 58,666 inspections in 37 townships where black currants numbering 2,181 plants were found in 552 locations.

As a result of inspections made during the year, it is quite apparent that continued and more effective work is needed in maintaining suitable Ribes-free protection zones in the surroundings of those commercial nurseries in the State where white pines are being produced. In other words, funds have not been sufficient to adequately establish control conditions and increased efforts will be needed.

During the last week in November, the Division was called upon to prepare a plan for a blister rust control project under the Civil Works Administration (C.W.A.) an emergency activity created under the National Industrial Recovery Act. In spite of the fact that the winter is not the time of year when large numbers of men can be employed on blister rust control work, a three-fold project was prepared and approved and the first crews started work on November 27. This emergency work involved the elimination of diseased pine branches or entire trees where infected with a trunk canker, the mapping of prospective control areas, and the continuance of the canvass to locate specimens of European Black Currants. Details of this activity will be recorded in the report for the next fiscal year.

APIARY INSPECTION

Activities in apiary inspection have continued without change of policy, although they were somewhat restricted by the reduced appropriation. Five deputy inspectors were employed; one less than the previous year. These men carry out the field work, being assigned respectively to Berkshire County, the Connecticut Valley, Worcester and western Middlesex Counties, northern Middlesex and Essex Counties, and the counties south of Boston.

Thus the entire State is kept under observation, although the major part of the inspection has been conducted east and southeast of Worcester County. The end in view has been to gradually extend the areas now under control.

American foulbrood has been encountered principally. Being the more tenacious brood disease, sterner measures are required for its control, than those for European foulbrood, now seldom encountered. Wherever intensive inspection has been possible, improvement in apiary conditions is apparent. It is becoming increasingly obvious, however, that the time is close at hand, when it will be necessary to reinspect areas already brought under control, for the purpose of maintaining this control. Reoccurrences of disease and new foci, restricted at first, appear to be inevitable. It is of the utmost importance to be enabled to inspect and discover these at their inception, so as to prevent their extension in the already cleaned areas.

The demand for bees in orchard practice is maintained; perhaps it is even greater. There is a noticeable swing toward the use of colony bees, instead of package bees, although vast quantities of the latter are used, being shipped each May from apiaries in the south. The situation suggests a fortunate opportunity for the Massachusetts beekeeper to perfect means of supplying ample colony bees for Massachusetts fruit growers.

REPORT OF THE DIVISION OF RECLAMATION, SOIL SURVEY AND FAIRS

MASSACHUSETTS FAIRS IN 1933

The agricultural fairs in Massachusetts showed a marked improvement this year over last, both from an attendance and financial standpoint. Most fairs not only paid their operating expenses but also showed a small profit. This most satisfactory result was due to two reasons; first, a reduction in operating expenses and second, a small increase in receipts from gate and grandstand. Figures compiled on a State-wide basis indicate that receipts increased approximately 8 per cent in 1933 over 1932 while operating expenses were reduced approximately 10 per cent.

The managements of the agricultural fairs have shown an unusual ability in being able to put their houses in order, to lay out a budget based on the fairs' financial standing and then insisting that their department heads keep within the budget estimate.

The Department of Agriculture cooperated with 20 major, 43 community, 41 granges and 9 poultry and rabbit associations holding fairs and shows, making a total of 113 societies, associations and organizations receiving either an allotment of State prize money or special trophies, medals and ribbons. This number is slightly less than last year owing largely to business conditions in the localities where some of these fairs have previously been held.

IMPROVEMENT IN EXHIBITS CONTINUES

There has been a noticeable improvement during the last few years in the appearance and set-up of the agricultural halls and buildings in which the exhibits of fruits, vegetables, flowers, canned goods and home department are housed. More artistry has been displayed in arranging the exhibits and the quality of the products has been constantly improving. Exhibitors have improved in their ability to select, as well as to prepare, farm products for exhibiting. Another noticeable improvement has been in the arrangement of flowers in vases and other containers. Canned goods are much more attractively displayed and handiwork has improved both in quality and type.

SPECIAL EXHIBITIONS

The exhibits in the Massachusetts Building on the Brockton Fair grounds put on by the Department showed the work of five State Departments, namely, Department of Public Works, Department of Public Safety, Department of Mental Diseases, Department of Conservation (Division of Forestry and Fisheries and Game) and the Department of Agriculture. The exhibit showed in a most attractive and graphic manner many of the activities of these several departments and proved to be of great interest to the patrons of the fair.

In the Massachusetts Building on the Eastern States Exposition grounds, West Springfield, the exhibit took an entirely different line and showed the interdependence of agriculture and industry. Many of the leading industries of Massachusetts were represented in exhibit cases about the building and the products of the farms were shown in conjunction with the industrial exhibits. The whole exhibit was educational as well as artistically displayed and received very favorable comment.

In connection with the New England Prosperity Exposition and Home Makers Exhibit in Mechanics Building, Boston, the Department installed a very elaborate commercial fisheries exhibit in addition to an agricultural and industrial display covering 200 running feet of space.

The Union Agricultural Meeting was also managed, exhibits installed and premiums offered by the Department. Several smaller exhibits were set up during the year in connection with poultry shows and other organizations.

JUNIOR WORK OUTSTANDING

The interest in fairs on the part of boys and girls is still on the increase and the number of exhibits by young people was 5 per cent greater in 1933 than in the previous year. In this connection it is an interesting fact that boys' and girls' exhibits have made an annual gain for the past eight or ten years and that fairs are giving more space and attention to the junior departments each year. The educational features of the junior department cover a wide variety of activities and are included in practically every department of the fair. The result of this effort on the part of fairs to encourage young people is already beginning to show by the constantly increasing number of young people who are engaged in 4-H club work, vocational work and other young people's activities.

PRIZE MONEY ALLOTMENTS

Applications for an allotment of agricultural prize money were received from 109 organizations and premiums were paid direct to exhibitors at 96 of this number. The amount of the allotments made varied from a minimum of \$15 to a maximum of \$1,800 and the distribution was made to 18 major fairs, 31 community fairs, 7 poultry and rabbit associations and 37 grange fairs. The exhibits in the Massachusetts Buildings at Brockton and Springfield were paid for out of prize money as were also the 4-H Club Camp at Amherst, all special exhibitions, trophies, ribbons

and medals, and the premiums in the fruit show held at Worcester in connection with the Union Agricultural Meeting and all other special awards made during the year.

18 Agricultural and Horticultural Societies
(Brockton and Eastern States not included)

Acton Agricultural Association, \$671; Blackstone Valley Agricultural Society, \$494; Bristol County Young Farmers' Fair, \$450; Deerfield Valley Agricultural Society, \$689.75; Essex Agricultural Society, \$1,800.10; Franklin County Agricultural Society, \$1,800; Groton Farmers' and Mechanics' Club, \$600; Hampshire, Franklin, and Hampden Agricultural Society, \$1,799.50; Highland Agricultural Society, \$950; Hillside Agricultural Society, \$1,000; Housatonic Agricultural Society, \$1,264.55; Littleville Community Fair, \$400; Marshfield Agricultural and Horticultural Society, \$850; Martha's Vineyard Agricultural Society, \$500; Nantucket Agricultural Society, \$201; Plymouth County Agricultural Society, \$650; Sturbridge Agricultural Association, \$700; Union Agricultural Society, \$750; total, \$15,569.90.

31 Community Fairs and Local Exhibitions

Ashby Community Fair, \$69.75; Barre Junior Fair, \$193; Bolton Farmers' and Mechanics Club, \$50; Cape Cod Horticultural Society, \$100; Chester Junior Fair, \$35.75; Chicopee Junior Exhibit, \$15; Connecticut Valley Onion Show, \$110.50; Connecticut Valley Potato Show, \$80.50; Dalton Community Fair, \$16; East Longmeadow Community Fair Association, \$61; East Bridgewater Community Fair, \$75; Granville Community Fair, \$75; Hampden County Improvement League, \$115; Heath Agricultural Society, \$175; Hingham Agricultural and Horticultural Society, \$100; Montgomery Junior Fair, \$15.50; Natick Community Fair, \$50; Norfolk County Junior Fair, \$49.75; Orange Boys' and Girls' Club, \$75; Southwick Community Fair, \$61.50; South Amherst Fruit Show, \$100; Sterling Farmers Club, \$125; Union Agricultural Meeting Fruit Show, \$175; Union Agricultural Meeting Potato Show, \$18; Upton Farmers' Club, \$100; Westborough Woman's Club, \$15; Wales Community Fair, \$19.80; Westfield Young People's Agricultural Society, \$50; White Oaks Community Fair, \$25; Winthrop Garden Club, \$15; total, \$2,166.05.

37 Subordinate Grange Exhibits

Abington, \$13; Acushnet, \$15; Ashburnham, \$15; Bedford, \$25; Brimfield, \$18.50; Chatham, \$15; Dedham, \$19.50; Dunstable, \$50; Fairhaven, \$9; Hilltop, \$5.25; Holden, \$13; Leicester, \$15; Ludlow, \$30; Mansfield, \$34.50; Merrimac, \$23; Milford, \$15; Nemasket, \$15.25; New Salem, \$13; Norfolk Pomona, \$9; North Seekonk, \$15; Oak Hill, \$14.20; Palmer, \$15; Pittsfield, \$15; Randolph, \$25; Richmond, \$15; Rockland, \$4.50; Rochester, \$15; Rutland, \$15; Swansea, \$15; South Middleborough, \$15; Thrifty, \$27.50; Upton, \$15; Waltham, \$15; Warren, \$35; Westford, \$20; Weston, \$15; West Stockbridge, \$24; total, \$668.20.

7 Poultry and Rabbit Associations

Athol Poultry and Pet Stock Association, \$162; Boston Poultry Show, Inc., \$296; Essex County Poultry Association, \$50; Essex County Rabbit Breeders' Association, \$70; Fitchburg Poultry Fanciers' Association, \$199.50; Metropolitan Reading Poultry Association, \$150; New England Poultry Association, Inc., \$250; total, \$1,177.50.

SUMMARY OF STATE PRIZE MONEY

Agricultural and Horticultural Societies	\$15,569.90
Community Fairs and Local Exhibitions	2,166.05
Poultry and Rabbit Associations	1,177.50
Subordinate Granges	668.20
Junior Activities	1,800.00
Badges, medals, cups, etc.	1,067.39
Special Exhibitions	6,978.76
Miscellaneous expenses	825.93
	\$30,253.73

REPORT OF THE STATE RECLAMATION BOARD

During the fiscal year 1933, the Commonwealth of Massachusetts continued the policy in force during 1931 and 1932, namely that of appropriating money for mosquito control work under the State Reclamation Board as a means of emergency relief for unemployment. It had been very clearly demonstrated in 1931 and 1932 that in mosquito control work over 91 per cent of the money went direct to labor, and that the work was accomplishing real results. During the fiscal year, the state appropriated, in all, \$100,000 for relief work on this mosquito control:—\$75,000 in Chapter 89 of 1933, and an additional \$25,000 in the supplementary budget, Chapter 371, Item 241-b. This, with appropriations made in previous years, brought the state total for mosquito control work to \$600,000.

Of this \$100,000 appropriated in 1933, allotments were made to the various state projects; namely, Bristol-South Plymouth, South Shore, North Shore, Martha's Vineyard, Nantucket and Mashpee, and a small allotment was made for a new project in the Town of Wenham, to which the state allotted \$750 on the appropriation of a like amount on the part of the town. In these several projects, work was carried on as formerly, continuing the ditching of breeding places almost entirely on salt marsh areas. In the Bristol-South Plymouth, Nantucket, and Martha's Vineyard areas, some work was carried forward during the winter months, and even on the areas north of Boston, it was found possible to do some work in the way of removal of sods on areas where salt hay was harvested.

The total expenditures for construction work on State projects during the fiscal year 1933 was \$104,677.86. In addition to these expenditures, there was spent in 1933, from funds appropriated and sent in by towns assessed for maintenance work in accordance with Chapter 112 of 1931, the sum of \$22,361.63. In 1933 there were employed in mosquito control work over 1,140 citizens of the Commonwealth, all of whom were taken from the ranks of the unemployed.

The budget for administrative work of the Board called for \$9,140 which was increased by \$2,000 in the supplementary budget, making the total for the year \$11,140, which covered services of permanent and part-time employees of the Board, as well as necessary expenses incurred in planning and supervising work for the various mosquito control projects in operation during the year. At the close of fiscal year 1933, the investment in mosquito control work, including that performed under state appropriations as well as local appropriations and contributed funds, totaled \$898,288, all spent since April 1, 1930. The supervision of the maintenance of 2,900 miles of ditches is in itself no slight undertaking.

Gratifying reports of the success attending efforts on mosquito control work continued to come in unsolicited from both organizations and individuals. These reports give evidence of the effectiveness of ditching and draining breeding places on salt marsh areas of the state.

Of the various reclamation and drainage districts organized in previous years by the State Reclamation Board, the Belle Isle Reclamation District did certain construction work in the way of further ditching and filling. There were also several questions that arose in other districts where construction work has come to a halt.

FINANCIAL STATEMENTS

Appended are tables of the allotments and expenditures for the various state and private projects on mosquito control, and also tables showing the assessments made for maintenance work in the different projects for the year 1933.

Allotment of Funds from Appropriations of 1931-1932-1933

1. \$270,000—Chapter 112, Acts of 1931
2. 100,000—Chapter 465, Acts of 1931
3. 130,000—Chapter 307, Item 245-b, Acts of 1932
4. 75,000—Chapter 89, Acts of 1933
5. 25,000—Chapter 371, Item 241-b, Acts of 1933
6. 22,767—Local Appropriations and Contributions

Project	1.	2.	3.	4.	5.	6.	Total
Bristol-South Plymouth	\$90,000	\$25,000	\$4,500	\$5,000	\$450	\$3,350	\$128,300
South Shore	70,000	40,000	57,500	17,000	7,500	18,450	210,450
North Shore	90,000	5,000	23,000	41,000	12,000	150	171,150
South Essex	20,000	30,000	30,000	—	—	—	80,000
Maashpee	—	—	5,000	3,000	—	—	8,000
Martha's Vineyard	—	—	5,000	5,250	825	67	11,142
Nantucket	—	—	5,000	3,000	—	—	8,000
Wenham	—	—	—	750	—	750	1,500
Unallotted Funds	—	—	—	—	4,225	—	4,225
Total	\$270,000	\$100,000	\$130,000	\$75,000	\$25,000	\$22,767	\$622,767

*Expenditures—Mosquito Control—State Projects
(not including maintenance)*

Project	Previous to 1933	Fiscal Year 1933	Total
Bristol-South Plymouth	\$120,420.30	\$7,845.55	\$128,265.85
South Shore	185,551.55	24,843.34	210,394.89
North Shore (including South Essex)	195,456.03	55,639.78	251,095.81
Maashpee	4,795.32	3,202.62	7,997.94
Nantucket State	3,911.98	4,015.00	7,926.98
Martha's Vineyard	3,474.98	7,642.03	11,117.01
Wenham	—	1,489.54	1,489.54
Total	\$513,610.16	\$104,677.86	\$618,288.02

Maintenance of State Projects—1933

Project	Total Assess. for 1933
Bristol-South Plymouth	\$7,495.00
South Shore	11,800.00
North Shore (formerly South Essex)	6,165.00
Nantucket State	400.00
Martha's Vineyard	400.00
Total	\$26,260.00

Expenditures—Mosquito Control—Other Than State Projects

Project	Previous to 1933	Fiscal Year 1933	Total
Cape Cod	\$192,606.05	\$32,275.17	\$224,881.22
Nantucket	28,083.99	1,834.15	29,918.14
Belmont-Cambridge-Watertown	3,740.00	913.79	4,653.79
Natick	458.17	88.72	546.89
Total	\$224,888.21	\$35,111.83	\$260,000.04

Summary of Expenditures

Totals	Previous to 1933	Fiscal Year 1933	Total
Other than State Projects	\$224,888.21	\$35,111.83	\$260,000.04
State Projects	513,610.16	104,677.86	618,288.02

Grand Total **\$738,498.37** **\$139,789.69** **\$878,288.06**

To the total should be added the amount spent under Chapter 426, Item 708a, of the Acts of 1930, for the construction of dike on the Province Lands, owned by the Commonwealth at Provincetown 20,000.00

Grand Total **\$898,288.06**



The Commonwealth of Massachusetts

ANNUAL REPORT

OF THE

Commissioner of Agriculture

FOR THE

Year Ending November 30, 1934



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The Commonwealth of Massachusetts

DEPARTMENT OF AGRICULTURE

To the Honorable Senate and House of Representatives:—

In compliance with the provisions of Chapter 128 of the General Laws, I am herewith making my annual report for the year ending November 30, 1934, for the Department of Agriculture.

Respectfully submitted,

ARTHUR W. GILBERT, *Commissioner*

PERSONNEL OF THE DEPARTMENT

COMMISSIONER OF AGRICULTURE—DR. ARTHUR W. GILBERT, BELMONT

ADVISORY BOARD APPOINTED BY THE GOVERNOR AND COUNCIL

JOHN BURSLEY, BARNSTABLE (WEST), Term expires November 30, 1935

STUART L. LITTLE, NEWBURY, Term expires November 30, 1935

WILLIAM CASEY, SPENCER, Term expires November 30, 1936

GEORGE E. TAYLOR, SHELburnE, Term expires November 30, 1936

JAMES O'BRIEN, LEE, Term expires November 30, 1937

JOHN T. GOGGIN, SEEKONK, Term expires November 30, 1937

DIVISIONS AND ORGANIZATIONS

DAIRYING AND ANIMAL HUSBANDRY—*Director*, JOSEPH C. CORT, READING

MARKETS—*Director*, LAURENCE A. BEVAN, NEWTONVILLE

PLANT PEST CONTROL—*Director*, R. HAROLD ALLEN, TAUNTON; *Assistant Director*, QUINCY S. LOWRY, CANTON

RECLAMATION, SOIL SURVEY AND FAIRS—*Director*, L. B. BOSTON, FRAMINGHAM; *Assistant Director*, A. W. LOMBARD, ARLINGTON

AGRICULTURIST—DANIEL J. CURRAN, MARLBOROUGH

STATE RECLAMATION BOARD

Chairman, EDWARD WRIGHT, DEDHAM

GEN. RICHARD K. HALE, BROOKLINE

L. B. BOSTON, FRAMINGHAM

Secretary, GEORGE R. STRATTON, HOPKINTON

REPORT OF THE COMMISSIONER

FARMS FOR SALE BULLETIN

For over half a century the department has issued an annual bulletin describing farms which are for sale in the Commonwealth. This has been a real service to the farm owners who for one reason or another find it necessary or desirable to dispose of their farms and to the public who may wish to purchase a farm home.

The department is constantly receiving calls for information regarding farm property available for purchase. Through this medium many thousands of farmers have changed ownership over the years. This bulletin has been requested from many thousands of persons not only nearby but by those who live in distant states. It is believed a considerable number of farmers living perhaps thousands of miles away have moved their families to Massachusetts and found pleasant homes here. This information was brought to them by this bulletin.

This bulletin contains farms of all sorts, large and small; some of the small partially sustaining type and others large commercial farms; also a few estates with lavish outlay. Obviously most of the farms which have been sold are of the smaller, less expensive type.

With the gradual rise in the prices of farm products this bulletin is becoming more and more valuable as an increasing number of persons are now seeking to become partially supporting at least from the land.

SUMMER VACATION BULLETIN

Another bulletin prepared annually by the department is called "Vacation in the Country."

The object of this bulletin is to bring to the attention of city residents and vacationists, the excellent facilities which are offered to them in the country. A large number of farmers have come to the conclusion that taking of a limited number of "summer boarders" brings a fair return to them and is a real contribution to city people. Advantages of low rates, excellent food and comfortable country living make a real appeal to many persons looking for a few weeks stay during the summer months.

It is not the policy of the department to advertise all recreational retreats in the Commonwealth, nor is it their intention or desire to injure in any way the larger hotels and other similar places of abode or recreation. Its purpose is merely to point out to the general public the advantages of spending a few weeks in rural Massachusetts. Not a few parents have discovered that their children are safe under such conditions. Here the boys and girls may become acquainted with different domestic animals which previously they may have known only through their school books. An abundance of fresh farm products and wholesome tramping of the fields gives them a rugged strength for their winter school work.

The department has given a considerable number of radio talks concerning this work and thus has been the medium of disposing of considerable numbers of these bulletins which in turn have given to people here and there a new conception of the country as a place to spend a vacation.

RECOGNITION FOR AGRICULTURAL LEADERSHIP

For a number of years it has been the custom of the Massachusetts Department of Agriculture to honor certain persons for outstanding Agricultural Achievement at the time of the Union Agricultural Meeting.

The method of selecting candidates for this honor, as well as the type of award given, has been modified so that in place of the medals a suitably engraved and mounted certificate will be awarded on January 10, 1935.

Certificates to be awarded will be presented to the Presidents of our leading state-wide agricultural organizations, as follows: Massachusetts Dairymen's Association; Massachusetts Milk Inspectors' Association; Massachusetts Fruit Growers' Association; Massachusetts State Vegetable Growers' Association; Massachusetts Veterinary Association; Massachusetts Federation of Poultry Associations; Massachusetts Jersey Cattle Club, Massachusetts Holstein-Friesian Association; Massachusetts Farmers' Roadside Stand Association; Massachusetts Arborists' Association; Massachusetts Federation of Beekeepers; Massachusetts State Home Economics Association; Federated Rabbit Clubs of Massachusetts; Massachusetts State Grange; Massachusetts Association of Certified Poultry Breeders; Massachusetts Council, New England Milk Producers' Association; Massachusetts Farm Bureau Federation; Massachusetts Duck Growers' Association; Massachusetts Turkey Growers' Association; Massachusetts Agricultural Club; Associated Fruit Growers of Massachusetts.

In addition to the above, special recognition will be given to Ralph M. Brown of Brimfield, a graduate of a Vocational Agricultural Department, for creditable accomplishments in poultry raising and to Miss Ida Davis of East Taunton and Stanley Chittenden of Williamstown for Outstanding Accomplishments in 4H Club Work.

REPORT OF THE DIVISION OF DAIRYING AND ANIMAL HUSBANDRY

IMPROVEMENT IN THE QUALITY OF MILK ON MASSACHUSETTS DAIRY FARMS

There have been several important factors relating to the production of quality milk in Massachusetts that have been given serious consideration by the Department of Agriculture during the past year.

Our program calls for the inspection of all dairy farms in Massachusetts that are supplying our consuming public with fluid milk. Our law provides that all dairy farms producing milk for sale in this Commonwealth will satisfy the rules and regulations of the Milk Regulation Board pertaining to the production of milk. Our regulations in effect today are reasonable, yet they are sufficiently exacting to require of all dairy farmers the adequate facilities and proper management to the end that a safe quality supply of milk will be available in all of our markets.

The dairy farm inspection law that was passed by the Legislature in 1932 provided that certificates of registration shall be issued by the Department on the basis of an inspection report from a local milk inspector, when such report indicated clearly that our rules and regulations had been substantially complied with. We have received valuable cooperation from many of our local boards of health and while we cannot definitely state, at this time, that every dairy farm in Massachusetts has been inspected either by our inspector or by agents of local boards of health, we are prepared to state that considerable progress has been made and we expect that within another year our objective will be reached, that is, the inspection of every dairy farm in Massachusetts producing milk for sale.

Surveys of the production and distribution of milk would indicate that we produce less than one-half of the milk consumed in Massachusetts. We recognize, therefore, that a great volume of milk comes in from outside the State and we have a program which calls for the inspection of all dairy farms outside our state, producing milk for sale in this Commonwealth. Our appropriations, however, have not been adequate for the employment of enough inspectors to complete the inspection work outside of the Commonwealth. Some of our larger cities carry on a very extensive program of out-of-state dairy farms and we are satisfied that such communities receive proper protection. However, in some cases, economies have cut into their appropriations and they have not been able to complete the program outlined by the local boards of health. In some instances, we have not received reports from them indicating that they would be unable to complete their inspection program until it was too late for our small group of inspectors to take over these late assignments and carry out the full intent of the law.

Our inspection program during the past year called for the inspection of all dairy farms in Massachusetts, and the production of quality milk on such farms, in order that we might reasonably impose upon those producing milk outside of the State the same high requirements which we impose upon our own farmers. We are prepared to require of all dairy farms within or without the State, producing milk for sale within the Commonwealth, a full compliance with the rules and regulations established by the Milk Regulation Board, and unless these requirements are met, a certificate of registration will not be issued. We anticipate very little difficulty in impressing upon our Massachusetts farmers the necessity of complying with these rules and regulations in order that all of our Massachusetts dairy farms may have a certificate of registration.

During the past year, the Department conducted 173 hearings in Massachusetts relating to a failure on the part of certain dairy farmers to comply with our rules and regulations, and outside of the State of Massachusetts we conducted 615 hearings relating to the same causes. We found in many cases, both within and without the Commonwealth, that we were confronted with a situation that called for courageous action. It was very apparent that some of the farmers called into these hearings did not intend to comply with the rules and regulations and were not the type of farmer that could produce a quality milk for Massachusetts consumers. The only action that could be taken by the Department in a case of this kind would be the exclusion of such milk from our Massachusetts markets, and that recommendation was made in several cases, when in our best judgment no amount of instruction would bring about a change in existing conditions.

The Department has received a high degree of cooperation from most of the

local boards of health and it has been our purpose to point out that the work we are doing and the work that we intend to do runs parallel with the meritorious program that the health officials have in mind. The Massachusetts State College, the Extension Service, the Farm Bureau and other agencies that are interested in the production of quality milk have continued to give the same character of cooperation that has met with our approval in past years. We believe that the continuation of this program is worth while; that infant mortality has decreased, that milk borne diseases are not at this time the great concern to the parents of children that they were in past years, and while there is a small additional cost that must be borne by the consumer relating to the inspection of milk, this cost is more than offset by the benefits that reach every household in the Commonwealth.

PROTECTING THE FARMER'S MILK CHECK

Our dairy farmers are scattered in every nook and corner of this State. They know very little about Court procedure; they know very little about credit risk; their contacts with the business world are very limited; in fact ninety per cent of them are content to work many long hours each day producing milk for the many consumers in our cities and towns, delivering that milk to the dealer, with the understanding that they will be paid either monthly or bi-monthly, and risking their livelihood upon the ability or decision of the milk dealer to pay promptly or otherwise, for that fluid milk. Many of our dairy farmers have waited long, anxiously and sometimes in vain for the milk check that was to pay the taxes or the grain bill, or enable the parents to buy food and clothing for a growing family. Our Legislature, realizing the many instances wherein the farmer had not been paid for his milk, passed the license and bonding law in 1933, which required all persons operating a milk plant and purchasing milk from Massachusetts farmers to be bonded in an amount equal to the purchase of milk by them from Massachusetts farmers, during one payment period, plus ten per cent.

During the past year approximately eight hundred milk dealers have filed with the Commissioner of Agriculture, security to an amount of nearly \$600,000.00, and these securities have been deposited with the State Treasurer, and in the case of default, the amount of security filed by any particular milk dealer may be reached and applied to the amounts due the dairy farmer. We have found it necessary, in five or six cases, to use the collateral that had been deposited by the dealers to pay the farmers, when we had reason to feel that the dairy farmer's milk check was in jeopardy.

It is not the purpose of this law to work any particular hardship upon a milk dealer who is financially responsible. It is the purpose of this law to be very exacting in the case of the unscrupulous milk dealer whose apparent purpose is to buy on credit and neglect his payments to the dairy farmer who has trusted him over a considerable period of time with his fluid milk.

This Department has been very reasonable in accepting certain types of mortgage security, when it seemed apparent that the milk dealer could offer no liquid type of security and would be forced out of business if the mortgage was not accepted. Our law leaves with the Commissioner of Agriculture the discretion to accept mortgages, but our experience would point out that only the best type of mortgage should be accepted and the fewer mortgages that are filed with the Department, the better the protection to the dairy farmer. It might well be said that, as the year 1934 closes, considerable advance has been made in perfecting our organization, relating to the licensing and bonding of milk dealers, and we approach the new year with greater courage in planning a program that will more adequately protect the dairy farmer's milk check.

INSPECTION OF DAIRY PLANTS

During the past year a law requiring the milk dealers to notify the producers, daily, relative to the weight of their milk was put into operation and inspectors from this Department have visited most of the milk plants in the State in an

effort to determine the methods used by milk dealers in complying with this law. We have found that many of our milk dealers were not familiar with the provisions of the law and instructions have been given to them with a rather definite understanding that the Department would expect a full compliance with the law in the future.

Our inspectors have also visited the various milk plants in the State and tested samples of milk in order to check on the dealers' records relating to butter fat content. Our purpose is to check the dealers' tests in order that we may know definitely that the producers are receiving correct payment.

The following table gives a resume of the work done in connection with these tests.

Cities and towns visited . . .	168	Stores inspected	24
Milk Inspectors visited . . .	51	Butter fat tests made . . .	5,468
Milk plants visited	478	Sediment tests made . . .	415
Complaints investigated . . .	8	Reductase tests made . . .	415
Producers interviewed	265	Temperature tests made . .	402
Dealers' samples tested	55	Farms visited	74
Producers' milk tested	4,592	Dealers interviewed	160

POULTRY WORK EXPANDED

During the past year a new law has been given to the Department to enforce, relating to the transportation of live poultry, and it becomes necessary for any person transporting live poultry that he has purchased from another to have a bill of sale with him, showing the ownership and describing such poultry and further indicating that he has a legal right to transport such poultry. During the three months of 1934 during which this law was in effect, more than 300 persons were licensed, and it is expected that a far greater number are eligible to become licensed under the provisions of this law. The license applies to the purchase, sale and transportation of poultry, with the provision that producers and merchants are exempted, and a merchant is designated as one who has an established place of business.

This law was passed in an attempt to deal more harshly with any person stealing poultry. Our records indicate that poultry thieving has been a very serious menace to the development of our poultry industry of Massachusetts, and all of our poultry associations and other agencies interested in the poultry business have been solidly behind any law that would tend to control poultry thieving.

Our poultry specialist officially supervises and identifies four classes of poultry flocks. The first class is the "Massachusetts Record of Performance Accredited" flocks, and this group must meet the requirements of both the Pullorum Accredited and the Certified Accredited grades. The breeders carrying on R. O. P. work enter their trapnested birds under R. O. P. inspection and during the year a state inspector makes unannounced visits to these plants, taking over the trap nesting for the day. The monthly records of these breeders are also checked over throughout the year. At the end of the year any bird that lays at least 200 eggs in 365 consecutive days which average to weigh 24 ounces or more per dozen from February 1 to September 1, qualifies as an R. O. P. bird. R. O. P. breeders then receive a certificate giving the numbers and records of their R. O. P. birds.

"Massachusetts Certified Accredited" poultry flocks is another class under our supervision. The flocks in this grade must first meet the requirements of "Massachusetts Pullorum Accredited" birds. Then all the birds to be used for breeding are inspected and those which meet the requirements of this grade are leg banded and left in the breeding pens. To pass, these birds must meet the grade standard for (a) health and vigor; (b) productive capacity and (c) reasonable freedom from standard disqualifications.

The "Massachusetts Pullorum Accredited" poultry flocks, with the requirements of this grade calling for 100% freedom from pullorum disease for at least

the past two consecutive years, has been an important class in the further development of healthy breeding stock.

The "Massachusetts Pullorum Passed" poultry flocks, with the main requirement of this grade being 100% freedom from pullorum disease for one year is a comparatively new grade classification established to assist a greater number of poultry breeders.

Three Year Summary of Record Performance Accredited Work

	1932	1933	1934
Total number of R.O.P. breeders	15	16	19
Number of Rhode Island Red flocks entered	14	12	14
Number of Barred Plymouth Rock flocks	2	4	4
Number of White Plymouth Rock flocks	0	1	2
Number of Single Comb White Leghorn flocks	1	1	1
Total number of pullets kept by R.O.P. breeders	18,740	20,905	30,751
Number of birds entered in R.O.P.	3,122	5,717	6,003
Number of birds that passed R.O.P. requirements	1,422	1,863	2,434
Per cent of birds entered that passed R.O.P. requirements	45.5	32.5	40.55
Average yearly egg production of all birds that passed R.O.P. requirements	235.67	238.81	241.22
Average yearly egg weight of all birds passing R.O.P. requirements—oz. per dozen		25.49	25.70

We have further been interested in working with other State agencies to secure uniformity of breed improvement grades and to formulate these grades on a basis that will improve poultry breeding stock. Careful consideration has been given by the Department to the provisions of Codes that tend to develop more uniform practices in the sale of hatching eggs, baby chicks and breeding stock, and further tend to eliminate many of the unethical trade practices that have crept into the poultry industry.

The Department centers its activities along regulatory lines, that is, the proper inspection and policing of grades that have been officially set up, and protecting the law abiding poultry farmer against violations of any of our laws pertaining to the poultry industry. We do attempt, however, to keep pace with the development of this great industry and to aid in promoting the production, sale and distribution of poultry and poultry products so that our poultry farmers may properly expand and secure for themselves an equitable share of the poultry business in our many lucrative markets.

SHEEP RAISING MORE SATISFACTORY

A continuing interest was evidenced in the wool pool which was officially sponsored by this Department. Collections of wool are made periodically at the pooling centers, and this wool is made into virgin wool blankets which are returned to the wool producers in payment for their deliveries. The overhead of organizing this work and the cost of manufacturing the blankets has been cut to the smallest figure possible so that the wool grower receives one and a half or more for his wool than he would receive under ordinary market conditions. Our Sheep Specialist has been fairly successful in developing a market for spring lambs and in offering advice and suggestions relative to the replacement of breeding stock. There is still room for the development of our sheep industry in Massachusetts. Two or three times as many sheep as we now have could be economically raised in connection with our dairy herds or other stock farm projects, and the additional income that would be derived from raising sheep could be used to advantage in bringing many of our modern improvements to the farmer's home.

RAISING HORSES WORTH CONSIDERATION

The fact that the horse has not completely been eliminated from our farming operations is well evidenced at the dynamometer contests at many of our

leading fairs during the past year. There is still a place for the horse on many of our farms and it would appear that more thought and consideration should be given to the breeding of draft horses in this State.

The hours of labor are being substantially reduced in most fields of employment and a greater amount of time is proposed for healthful recreation. The saddle horse has always been a boon companion to man, and it would appear that a part of our recreational program will give consideration to more bridle paths and more horseback riding. Our farms that are equipped and have facilities for breeding saddle horses will have an opportunity, probably during the next few years, to enter into this field of stock production with prospects of a fair financial return.

REPORT OF THE DIVISION OF MARKETS

SHIPPING POINT INSPECTION

The shipping point inspection work during the past year has been concentrated principally upon onions and strawberries. The short crop of apples, particularly the shortage of exportable varieties, made it unnecessary for the Department to do as much inspection of apples as in a normal year.

The onion work was carried on as shipping point service in the Connecticut Valley under a cooperative agreement with the Department. A resident inspector was stationed at Northampton and was thereby made available for service to all parts of the valley upon short notice. Because of the comparatively large crop of Massachusetts onions in contrast with the light volume in the drought stricken middle west, there was a substantial demand for shipment of Massachusetts onions into the middle western market, as well as to New York City and other eastern centers. This created an unusual demand for inspection and certification of the shipments going to those outside markets. Onion inspections total approximately 50,000 bags.

Strawberry inspection service was conducted purely as a state project and was carried on at the request of and under an agreement with the Falmouth Farmers' Sales Cooperative Association. This is a new organization representing a combination of the Falmouth Strawberry Growers Cooperative Association and a large number of producers who formerly marketed independently. This new association has about 225 members, representing nearly a 400% increase over the membership in the old organization. The work was done under an agreement whereby the association paid a per crate fee for their entire production. A large increase in membership consisting, as it did, of many growers who were not familiar with the grades and packing requirements, made it necessary to employ extra inspectors who worked in the fields with the pickers in order to instruct them regarding the requirements of the grades.

APPLE GRADING LAW

Inspectors of the Department covered the city markets shipping points, and cold storage warehouses during the major part of the apple marketing year. The policy of holding hearings has been continued in cases of violations. The purpose of such hearings is not only to call to the attention of packers the fact that they have violated the law, but also to make helpful suggestions which will aid them in future packing operations.

MARKET NEWS SERVICE

Reports on the Farmers' Produce Markets in Boston, Worcester, and Springfield are issued throughout the year, daily except Saturday. The Worcester and Springfield reports were supplemented by weekly market letters containing high lights of the market and other related economic facts.

The Special Apple Market Report has been issued regularly throughout the apple season. The weekly releases, containing information on all the important eastern markets, shipping point information, cold storage reports, and other facts of timely interest were supplemented by extra reports during the height of the apple season.

APPLE PEST CONTROL

An inspector of the Department worked through a large part of the growing season with the county agents for the purpose of checking the areas which it is hoped eventually to develop into maggot free districts. Much of this work consisted of checking of samples for the purpose of determining the extent of the maggot control and thereby assisting growers in determining the effects of their control measures.

Another and very important feature of this work has been the cooperation of our inspectors with State College specialists in promoting the clean apple project. This was a state-wide educational campaign which took the place of the activity of a somewhat similar nature formerly carried on as "90% Clean Apple Club". Under this new plan the apples were inspected more on the commercial basis than under the former program, the idea being to see what percentages of the various official grades were contained in the samples submitted for examination. An inspector of the Department assisted in this work in practically all the counties, in many cases making tests and in others instructing the county agents as to grade interpretations in order that the project could be conducted on a uniform basis in all parts of the state. In many instances the results of this service demonstrated specific reasons why growers were not securing adequate pest control, such as lack of proper equipment and proper timing, and incomplete coverage. For this reason, as well as others, this type of service demonstrated that it is of valuable assistance to apple producers.

STANDARDIZATION WORK

Work on the standardization and grading program was continued during the past year. Inspections as required by the farm products grading law were made at farms where the Massachusetts grades and standards were used. Markets were also visited for the purpose of inspections and for the gathering of information useful in the marketing of farm products. Poultry farms were visited, particularly those farms where grades and standards were used for the first time. Regular inspections were made at the Brockton and Springfield egg auctions and records kept of the findings. Instructions were given when needed in candling, candling equipment, care of eggs, grading eggs, advertising, and market outlets. Grading and candling demonstrations were given at various poultry meetings. Exhibits were also set up at fairs and poultry shows for instructive purposes for the benefit of the producer and for the purpose of educating the consumer to the value of eggs as a food.

A study was carried on, in cooperation with the Food and Drugs Division of the Massachusetts Department of Health, for the purpose of obtaining data which could be used at public hearings before a legislative committee which was considering a bill "Relative to the Sale and Distribution of Eggs" and commonly known as the "Fresh Egg Bill". The eggs were chemically analyzed by a chemist from Food and Drugs Division and candled by an investigator from the Department of Agriculture. Eggs were collected from many sources. The number of milligrams of ammonia in 100 grams of egg was a measure of quality in the chemical test. The United States standards for eggs were used in determining quality by the candling method. Two hundred and nineteen analyses were made. The following table indicates the relation between the two methods:

Grade	Specials	Extras	Standards	Trades	Total
No. samples	57	88	60	14	219
High (mg)	1.98	2.36	2.90	2.80	
Low (mg)96	1.04	1.08	1.48	
Average (mg)	1.35	1.15	1.71	1.90	

Turkeys—Turkey inspections were made at farms and at Faneuil Hall market just previous to the holidays. Tags distributed in 1934 totalled 4,250.

Two turkey market reports were issued for the purpose of familiarizing turkey raisers with market conditions such as prices, supply, competition, quality, size, and demand. These reports were issued as a result of a previous request of the

Massachusetts Turkey Growers' Association because of the fact that market information is scarce one month or more previous to the beginning of November. After that time newspapers usually carry the desired information.

Asparagus—Three nights a week inspections were made of asparagus from the Middlesex Asparagus Growers' Association at the warehouse of the First National Stores. Records were kept of these, as well as of the inspections made in the field. A special committee of the association made inspections of each member's asparagus, which resulted in a more uniform product and a better feeling between members since each knew how the other was packing his product. Valuable information was gained by the members through such contacts. A summary of the information collected was presented to members of the association.

Farmers' Roadside Stands—Fifty shields were distributed to roadside stands which complied with official regulations for fresh produce of high quality mainly locally grown and honestly packed. The stand must be clean and the parking space adequate. A charge was made to cover part of the costs of signs and inspections. The Department assisted the Massachusetts Farmers' Roadside Stand Association in its reorganization, arranged for its speakers' program at its annual meeting, and for a radio address. News releases were sent to all of the dailies and weeklies in Massachusetts. Certificates which explained the meaning and which were an aid in advertising the sign or shield were awarded members.

Home Cannery—The Department cooperated with the Massachusetts Home Cannery Association in formulating grades and standards for home canned fruits and vegetables. Arrangements were also made for exhibit space at the South Station and assistance given in setting up the display.

STATISTICAL INFORMATION

Prevailing economic conditions provoked unusual interest in and demand for the annual mimeographed report "Receipts and Sources of Boston Food Supply". The statistical data, basis of the report, is obtained from various agencies, tabulated, and summarized. Feeding a city the size of Boston is a titanic proposition for not only is Boston the nucleus of a large consuming area, but it also serves as a distributing center of many foodstuffs for a large part of New England. Trends and changes in food supply and distribution, while barely perceptible, to market people frequently prove of vital importance in judging probable future trends and making plans practicable and feasible for operation. This publication and the detailed summary of weekly receipts and average prices of locally produced vegetables sold on the Boston market were of particular use in the Boston Market Study.

Summaries of receipts of native products in Boston market and the average prices, with the carlot supplies of corresponding and similar shipped in products were prepared weekly for the Farmers' Market Report.

A summary of monthly retail prices on certain food products was compiled from Boston Retail Price Reports 1928-1934.

In addition to regular statistical tabulations, various other statistical information was prepared on milk price data, cold storage holdings, market receipts of apples, and farm mortgage holdings.

INVESTIGATIONS

In the summer a brief study of the cheese market situation was made for the Milk Control Board, the primary purpose being to study the practicability of cheese manufacture as a use for sectional seasonal milk surpluses.

Boston market, hotels, and restaurants were approached in a preliminary survey conducted by the Department on the demand and use for fish.

RETAIL MARKET REPORT AND CONSUMER INFORMATION

Weekly issuance of the Boston Retail Price Report was resumed in October, due chiefly to the greatly increasing demand for more than monthly retail market

data from various interests, consumers, welfare and social service agencies, producers, and distributors. Besides the listing of prevailing retail prices on most fresh foodstuffs, a market news paragraph heads the report, directing attention to products in season, in plentiful supply, and low priced.

While the retail report fills the needs for research workers, nutritionists, radio program directors and others serving in more or less professional or leadership capacity, further retail news and publicity has been urged by producers and consumers. The request and cooperation of the Middlesex County Consumers' Council resulted in the weekly news release for the county papers, "Fresh Food Facts"—market news in popular style to prompt consumers to take advantage of supplies and prices and incidentally aid the market in general by helping move "surplus" products. Although originally intended for newspapers, a wide spread demand for copies developed.

The other Consumer Councils were aided also in an advisory capacity as well as by providing materials and exhibits for lectures and radio talks and writing articles. Consumer buying talks were given welfare workers, teachers, students, and consumers. Special market price and supply information was provided in certain instances for welfare departments and agencies. The Department cooperated with the New England Home Economics Association in preparing a Consumer Information Guide.

COMMERCIAL FISHERIES PROMOTIONAL WORK

Market News—Daily market news on the retail offerings of fish were collected from a representative group of retail stores. These news reports were broadcast over Stations WBZ, WHDH, and WEEL.

Radio Broadcasts—A program "Fish Stories" sponsored by this Department was broadcast over the N.E.C. network through WBZ and WBZA, each Wednesday from 11:00 to 11:15 a.m. Fish Cook Books and "List of Massachusetts Fish" were distributed to consumers through this program. Requests for more than 9,000 books have been received from consumers during the past six months.

A similar program, sponsored by the Massachusetts Fisheries Association was broadcast daily over WHDH from 10:50 to 11:00 a.m. The department is cooperating with the association in these programs.

Retail Store Exhibits—Many requests have come to the department throughout the year for display material relative to the fishing industry. The department has placed displays in many stores. One of the most attractive exhibits has been the live salt water fish display in their natural habitats.

Smaller exhibits have been placed in other stores of such a nature as to attract consumers and educate them as to factors relating to the industry.

Public Exhibits—Fishing Exhibits were placed in the State Building at Brockton and Springfield during the past year as part of the annual exhibits at these buildings.

During the Food Fair at the Mechanics Building last fall a 30 foot showcase was placed on display, exhibiting all the varieties of fresh fish landed in Massachusetts during the year. At this exhibit cook books were given to the consumer as part of the educational work.

MARKET SURVEY AND STATISTICAL ANALYSIS

A survey was made of the distribution of fish throughout Massachusetts, the purpose of the survey was to get an accurate picture of the handling of fish within the State with the idea in mind of definitely establishing methods and procedures that should benefit the retailer in his work. At the same time accurate analyses of production figures were made to aid in completing a well rounded distribution survey.

Retail Schools—Plans were formulated, from the results of the survey, to establish a series of fish retail schools throughout the state for all handlers of salt water fish. The material of the schools is so drawn up that it should aid the retailer in the better merchandising of sea food products. Twenty such schools are to be held throughout the state in centrally located cities.

A Fish Retailers' Handbook has been written to be distributed at these schools. Certificates will be given each man attending the school for display in the store.

REPORT OF THE DIVISION OF PLANT PEST CONTROL

Insect pests and plant diseases have been a continued hindrance to agriculture from the earliest times and have levied a heavy toll upon our agricultural crops during recent years. Our native long established pests are not nearly as destructive as foreign insects and diseases which have found their way into this country. Here, in their new environment and without their natural enemies, which usually keep them in check in their native country, they frequently increase at an alarming rate and do enormous damage before nature establishes a balance or before efficient control measures are known.

The stock in the nurseries during the past season was found to be in good condition, and with very few exceptions the insects and diseases were kept well under control by the nurserymen.

There has been the usual number of shipments of nursery stock by individuals which required inspection and certification. Many insects and plant diseases were also brought into the office for identification and requests made for control measures. Most of these related to insects attacking garden crops and information relating to household pests.

The Federal quarantines continue to cause some inconvenience to the nurserymen, but the quarantined areas have increased to such size within the past few years that now the majority of the shipments are consigned to points that are within the areas.

Scouting for the Japanese Beetle both in and around the nurseries failed to disclose even a single specimen of this pest. It is expected, however, that as this insect is firmly established in Massachusetts that the infestation will build up gradually. Control measures such as spraying and soil treatment are very effective in keeping it under control.

The department has cooperated with the United States Department of Agriculture in the administration of the Corn Borer and Japanese Beetle regulations, both in the vegetable and flower markets. The European Corn Borer law which has been in force since 1923 has proved very helpful in reducing the degree of infestation of this insect. The law requires that all corn stubble shall be destroyed or buried by December 1. It has been the policy of this department to enforce this law and summons violators into hearings. This practice was omitted this past season and a clean-up campaign of corn fields was carried on as a CWA project during December, January, and February. The results were not particularly satisfactory for it can readily be seen that work of such a nature cannot be done efficiently or economically when snow is on the ground or the ground is frozen.

SCOUTING FOR DUTCH ELM DISEASE

The Department inspectors did considerable scouting this past summer for the Dutch elm disease without finding any trees infected. The Dutch elm disease is so called because it was first found in Holland and was discovered in this country in 1930 in Cleveland and Cincinnati, Ohio. Since then it has been found in northern New Jersey, New York, Maryland, Connecticut, Indiana, and Virginia, and is now firmly established over an area 40 miles from New York City. It is believed that this disease was brought in on elm logs which were to be used for veneer, and it is not unlikely that later it will be found along the Atlantic seaboard near ports where elm logs have been landed. The first sign of this disease is the wilting of leaves after which the foliage usually turns yellow or brown before falling. The entire tree may die in one season or may live for some time, but in all probability it will eventually succumb to the disease.

This disease is carried by a small bark beetle which is widely distributed in northeastern United States. The economic importance of this beetle has been completely changed with the finding of the Dutch elm disease in America and

thru the identification of this insect as the probable chief carrier. It is known to occur from northeastern Massachusetts along southern New England, southern New York, northern New Jersey and into Pennsylvania, and is probably even more widely distributed than the records show. The beetle is one-eighth to one-tenth of an inch long, pitchy red in color. A full grown grub is one-eighth of an inch long and whitish in color. The first brood of beetles in New England are in flight and deposit their eggs the last of May and in June. The second brood lay their eggs the last of August and early in September. Spraying with arsenate of lead to protect the elms from various leaf feeders is beneficial in controlling this pest in that certain leaf feeders which would weaken a tree are destroyed by feeding on poison foliage. This spray if properly timed may also kill some of the bark beetles.

The fungus causes a ring-like or spotted brownish discoloration in the outer ring of the sapwood. This disease cannot positively be identified without a microscopic examination. Diseased elms should be destroyed at once since early destruction of such trees may be the means of killing millions of beetles before they have an opportunity to carry the disease to other elms. The wood from the infected trees should be handled in such a manner as to prevent the spores of the disease being carried to other trees. The fungus must not be allowed to fruit or the beetles to escape. Cutting the trees six inches below the ground and promptly burning all wood is advocated. Infected trees should be cut down even though the infection appears only on a single limb. This point was illustrated in the case of an infected tree in New Jersey where the disease showed only on a small branch. This branch was removed. Two weeks later several additional branches showed the disease and before the season was over, the tree died. It is known that this insect breeds normally in sickly and dying wood and by taking advantage of this tendency and the early cutting and burning of the same, it is possible to accomplish practical eradication of this carrier. Naturally the beetles are more apt to attack nearby trees, but under favorable conditions a greater spread may be expected. Work should be extended to a distance of five miles from any place where diseased elms have been located. The best time to scout for this disease is through the months of June and July, for during this period the wilted and dying leaves are very noticeable.

APIARY INSPECTION WORK

Active apiary inspection began in May, intensive work being carried on until the middle of August. Thereafter, the work was largely a "follow-up" of difficult cases encountered earlier in the season. The reduced appropriation made it impossible to extend inspection as was desired. No inspection was possible in some parts of southeastern Massachusetts, Cape Cod and in Essex County. In other parts of the State, the area covered depended upon the conditions prevailing, less work being required in certain areas west of Middlesex County than in many of the towns east and south of that point. There were insistent demands from the beekeepers for more inspection, which, with the limitations of the inspection, due to lack of funds were considered with the Commissioner of Agriculture. It was determined to request an additional \$500 in the budget for 1935.

Bee disease conditions may be considered to be well under control in all areas of the Commonwealth where active inspection has been possible. There have been occasional outbreaks which might be expected, but these have been local and have been readily brought under control as soon as they were discovered. Were funds available, however, to enable the desired surveillance of areas previously freed from disease, these sporadic occurrences of American foulbrood would be fewer and of very limited distribution. It was American foulbrood with which the inspectors dealt almost exclusively, European foulbrood continuing to be almost entirely absent from the State. Sacbrood, which is not considered to be particularly disastrous to beekeeping and which is usually limited to an occasional colony, was found to a small extent. The condition was entirely normal.

There is a widespread interest in the Caucasian race of bees, particularly for orchard purposes. Many claims, often unsupported by experimental evidence, are made for the superiority of this race. The question is raised,—is it resistant to European foulbrood? This is as yet unanswerable from experimentation. Formerly, in Massachusetts, European foulbrood thrived in colonies of the old-time, so-called "Native", black, German bee and in colonies of the "hybrid" Italian bee. The success with which European foulbrood has been stamped out in this State, is attributed to the Department's recommendation that beekeepers improve their stock by using disease-resistant, Italian strains. Certainly, the introduction of another race of bees susceptible to European foulbrood is to be avoided. Beekeepers are being urged to use due caution until the Caucasian race can be tested and proven to resist the disease.

WHITE PINE BLISTER RUST WORK

The white pine blister rust disease in Massachusetts continues to be a major plant pest control problem. The prosecution of an intensive although non-specular informational and service campaign since 1922 has resulted in the stimulation of an active location interest in the problem and the Department has assisted thousands of owners in protecting their white pine holdings by the elimination of wild and cultivated Ribes (currant and gooseberry bushes), the alternate host plants of this fungus disease. This cooperative effort has virtually accomplished the initial protection of the white pine areas in the State and has been the means of reducing the damage that might otherwise have resulted. The problem now is to make such re-examinations within control areas as may be needed to eliminate recurring Ribes before further damage results. Experience has shown that in many woodland areas seedling currant and gooseberry bushes develop so that in from five to seven years after initial control work, re-examination of control areas is imperative. The persisting plants by that time have developed into larger and menacing bushes.

The State appropriation for control work during the fiscal year 1934 was drastically reduced, but through the allotment of a sizeable appropriation from the National Industrial Recovery Administration (NIRA) for Public Works activities, the work was continued on about the same basis as in 1933. With the combined funds available 802,548 wild Ribes were eliminated from 115,031 acres. It was also necessary to destroy 1,581 cultivated bushes.

In addition to the activities under the State and NRA appropriations, the Department cooperated with the Federal Emergency Conservation Work (ECW) authorities in connection with the Civilian Conservation Corps (CCC) camps. Control work was under way at 9 camps and resulted in clearing 288,542 wild and 1,591 cultivated Ribes from 8,101 acres of land in our State forests.

The special work in connection with the plan to eliminate all European black currant bushes in Massachusetts was continued in 32 townships. In these cities and towns 218,129 properties were inspected and 1,712 plantings of black currants found. The work was not completed in two towns, but 8,838 bushes were destroyed in the 30 towns completed. As evidence of the cooperation which the Department is receiving in this particular phase of blister rust control work, it is interesting to note that 85% of the owners involved removed their black currant bushes without assistance from the field personnel.

Mention should be made of the work performed in connection with the Civil Works Administration (CWA) activities during the winter of 1933-34. A special blister rust control project was approved on November 23, 1933. On April 1, 1934 all activities were transferred to the Emergency Relief Administration (ERA) and work was officially concluded on April 26. Briefly the program provided for three sub-projects; namely, (1) Canker Elimination; (2) Black Currant Canvassing; (3) Control Area Mapping. The work provided employment for approximately 100 laborers, 30 foremen, and State Supervisor.

In the canker elimination sub-project, white pines on State or municipally owned lands and principally in plantations, were examined for possible blister

rust cankers. Branches bearing cankers were carefully pruned off and pines with a trunk canker were cut down and disposed of by burning. More than 17,000 stem-cankered trees were removed and over 12,000 trees were treated for the elimination of branch cankers only. In excess of 35,000 cankers in various stages of development were eliminated through work on this sub-project.

The black currant canvass was carried on in 15 cities and towns in Metropolitan Boston. A crew of 8 trained men inspected 174,701 properties and located 6,908 black currants in 1,282 gardens. The plants were eradicated later in the year as mentioned in a previous paragraph.

The purpose of the third sub-project (Control Area Mapping) was to procure a series of field maps showing the location of white pine areas in the several towns selected for such work. Several crews of three men each, 1 compassman and 2 laborers, were employed. These men mapped a total of 39,317 acres.

This CWA blister rust control work was handled under a great many handicaps, but on the whole much that was worth while was accomplished. The severity of the weather seriously impaired the efficiency of the canker elimination work. The black currant canvass, however, was well executed in spite of the bitter cold weather that was endured by the field men and the results compared very favorably with similar work performed during the usual summer season. The work of the mapping crews was unusually well done, particularly so when it is appreciated that in most instances, the mappers had absolutely no previous experience in this type of work.

Under the provisions of Federal Plant Quarantine No. 63 which governs the interstate shipment of white pine, currant and gooseberry nursery stock, the Department issued 55 permits for the entry of 578 currant and 154 gooseberry bushes from other States. Three permits were granted for the shipment into the State of 3,062 white pine seedlings or transplants.

The temporary field personnel during 1934 included 19 foremen or scouts and 24 laborers paid from Federal funds; 6 foremen or scouts paid from State funds; and 816 per diem laborers (including owners) representing local cooperators. An average of 112 enlisted men and 9 technical foremen or checkers were employed on ECW activities on State forests.

REPORT OF THE DIVISION OF RECLAMATION, SOIL SURVEY AND FAIRS

SMALL FAIRS ON INCREASE

There is a noticeable increase in the number of one or two day fairs throughout the Commonwealth. Horticultural exhibits in particular are commanding favorable consideration by a large number of communities. Flower shows have become extremely popular, many being held by local organizations including garden clubs, women's clubs and other civic groups. These exhibits in practically all cases are receiving excellent patronage. The Department has cooperated as far as possible with these groups, in some cases supplying State award ribbons as honor prizes for outstanding entries, and in other cases recommending speakers for educational programs.

There were the same number of major fairs this year as last; however, while the total number is less than a few years ago there have been several new local associations formed, which to a certain extent are supplanting the work of these old time societies.

The Department of Agriculture cooperated with eighteen major, twenty-eight community, fifty granges and eleven poultry and rabbit associations holding fairs and exhibits during the year. This is a total of 107 societies, associations or organizations receiving from the Commonwealth an allotment of State agricultural prize money or some form of special trophies, medals, ribbons or certificates. This was a total increase of fourteen organizations holding agricultural fairs in the Commonwealth in which the Department cooperated over the preceding year.

For the most part the small community fairs operated at a profit while the

larger organizations ran about equal in profit and loss. This is undoubtedly due to the small fair having less overhead expenses and especially little if any labor charges as in nearly all cases the work of setting up the exhibits and other details are accomplished by members and friends of the organization without charge. Practically all fairs today are operating on a well planned budget and the cause for those fairs which incurred a financial loss can be attributed to inclement weather.

EXHIBITS IN STATE BUILDINGS

The Department is responsible for all exhibits installed within the two buildings which are under its jurisdiction. The building on the Grounds of the Brockton Agricultural Society was used in the Spring by the Brockton Garden Club who put on a very fine flower show. At the time of the Brockton Fair the Department in cooperation with the Massachusetts State College and the Massachusetts Department of Correction used the building for setting forth the activities of their Departments. The other building on the Grounds of the Eastern States Exposition was used by this Department and the Department of Conservation. The Department's exhibit in both buildings was somewhat different in character than formerly, being more of a modernistic type—showing the products of our Agricultural industries by means of not only the products themselves but supported by transparencies, paintings, and the use of indirect lights all of which assisted in setting off the display in a colorful manner which seemed to be well received by the two hundred thousand or more persons who visited the buildings.

SPECIAL EXHIBITIONS

At various times throughout the year the Department has cooperated with numerous organizations on matters connected with their fairs and exhibitions. A few of these special exhibitions include a fish display by the Division of Markets at the Food Show in Mechanics Hall and also at the Sportsmen's Show in the Boston Garden. In Worcester the Department cooperated with the poultry interests in a Baby Chick Show and also the 16th annual Union Agricultural Meetings were arranged, exhibits installed and premiums offered. The Department cooperated in putting on poultry exhibits at Topsfield, Sturbridge, Greenfield, Cummington and the Eastern States Exposition. It also cooperated with the annual meeting of the Fairs Association and special and regular meetings of the various local agricultural societies.

For the past few years the Department, with the State College and the Massachusetts Agricultural Fairs Association has had constructed and exhibited from time to time, some special mechanical exhibit. One year it was a mechanical hen, then later a mechanical cow and the past year a mechanical apple. This type of exhibit is very popular with the general public as well as with various commercial and agricultural organizations.

AGRICULTURAL PRIZE MONEY PAYMENTS

(18 Agricultural and Horticultural Societies)

Franklin County Agricultural Society, \$1,900; Housatonic Agricultural Society, \$1,588.80; Hampshire, Franklin and Hampden Agricultural Society, \$1,799.75; Essex Agricultural Society, \$1,800.40; Hillside Agricultural Society, \$999.95; Highland Agricultural Society, \$1,000; Marshfield Agricultural and Horticultural Society, \$999.25; Sturbridge Agricultural Association, \$800; Acton Agricultural Association, Inc. \$740.25; Union Agricultural and Horticultural Society, \$750; Deerfield Valley Agricultural Society, \$650; Plymouth County Agricultural Society, \$650; Groton Farmers' and Mechanics' Club, \$481; Martha's Vineyard Agricultural Society, \$500; Blackstone Valley Agricultural Society, \$500; Bristol County Young Farmers' Fair, \$500; Littleville Community Fair, \$500; Nantucket Agricultural Society, \$181; total \$16,340.40.

(28 Community Fairs and Local Exhibitions)

Heath Agricultural Society, \$152.50; Sterling Farmers' Club, \$150; Connecticut Valley Onion and Potato Show, \$191; Cape Cod Horticultural Society, \$150;

Hampden County Improvement League, \$112.50; Upton Farmers' Club, \$100; South Amherst Fruit Show, \$100; Natick Community Fair, \$100; Hingham Agricultural and Horticultural Society, \$100; Monson Community Fair, \$99.94; Southwick Community Fair, \$75; East Bridgewater Community Fair, \$75; Granville Community Fair, \$76.50; Orange Boys and Girls' Club, \$75; Amesbury and Salisbury Agricultural and Horticultural Society, \$73; Ashby Community Fair, \$74.20; Norfolk Junior Fair, \$22.25; Bolton Farmers' and Mechanic's Club, \$50; Barre Junior Fair, \$50; White Oaks Community Fair, \$51; Westfield Young People's Agricultural Society, \$49; United Shoe Machinery Company, Agricultural Division, \$50; Chester Junior Fair, \$46.75; Agawam Community Fair, \$45; Dalton Community Fair, \$22; Union Agricultural Meeting Fruit Show, \$199.50; Massachusetts State College Horticultural Show, \$10; total, \$2,315.09.

(50 Subordinate Granges)

Bedford, \$25; Boylston, \$15; Braintree, \$15; Brimfield, \$17; Chatham, \$12.30; Cheshire, \$15; Cochituate, \$15; Dedham, 20; Dracut, \$15; Dunstable, \$50; Eastham, \$13; East Freetown, \$15; Fairhaven, \$20; Granby, \$12; Hilltop, \$15; Holden, \$17; Holliston, \$15; Ludlow, \$30; Mansfield, \$28; Merrimac, \$19.50; Monomoy, \$13; Needham, \$15; New Salem, \$14; Norfolk Pomona, \$15; North Seekonk, \$15; Oak Hill, \$14.90; Palmer, \$15.10; Pittsfield, \$15; Plainville, \$7.50; Ponkapoag, \$12; Randolph, \$30; Richmond, \$15; Riverdale, \$11.50; Rochester, \$15; Rutland, \$15; Seekonk, \$12; South Middleboro, \$15; Stockbridge, \$15; Swansea, \$15; Thrifty, \$20; Townsend, \$14.60; Tyngsboro, \$15; Waltham, \$13.75; Warren, \$20; Wendell, \$14; West Newbury, \$15; West Stockbridge, \$14; Weymouth, \$15; Williamstown, \$14; Wilbraham, \$15; total \$835.15.

(11 Poultry and Rabbit Shows)

Metropolitan Reading Poultry Association, \$94; Fitchburg Poultry Fanciers' Association, \$156; Holyoke Poultry and Rabbit Association, \$272.25; * Boston Poultry Show, \$206; Essex County Poultry Association, \$39; Essex County Rabbit Breeders' Association, \$75; Merrimack Valley Rabbit Breeders Association, \$26; New England Poultry Association, \$250; Athol Poultry and Pet stock Association, \$199.25; Springfield Poultry Club, \$175; total, \$1,492.50. *Two shows held during fiscal year.

SUMMARY OF STATE PRIZE MONEY

18 Agricultural and Horticultural Societies	\$16,340.40
28 Community Fairs and Local Exhibitions	2,315.09
50 Subordinate Granges	835.15
11 Poultry and Rabbit Shows	1,492.50
Junior Activities	1,643.25
Badges, medals, cups, ribbons and trophies	859.28
Special Exhibitions	5,905.50
Miscellaneous Expenses	549.51
	<hr/>
	\$29,940.68

REPORT OF THE STATE RECLAMATION BOARD

At the beginning of the fiscal year 1934, the balance left of the State appropriation for mosquito control drainage work for unemployment relief amounted to \$4,478.98. As there was pressure on all sides for State departments and boards to promote, wherever possible, relief work programs under the Federal Civil Works Administration, and inasmuch as the State Reclamation Board had already accomplished successful results in mosquito ditching under state relief appropriations, a general state project covering the salt marsh areas was presented by the Board, and was immediately approved by the State Civil Works Administration. Two additional projects were approved a little later, and finally there was delegated to the State Reclamation Board the supervision in Massachusetts of a federal pest mosquito project under the Bureau of Entomology, U. S. Department of Agriculture.

In all these CWA projects it was very apparent that certain supervisory and expense items would have to be met by the department or board acting as administrator. Therefore, it was deemed advisable to reserve the small balance from the 1933 state relief appropriation for tools and expenses, and thus was made possible the employment of approximately 1,000 men on the CWA pay roll paid from federal funds. Under these projects, a varying number of men was employed from November 30, 1933 to May 3, 1934 on this mosquito control drainage work, mostly confined to the salt marshes, although in one project drainage and clearing was done on fresh water areas in North Attleboro, and in another project fresh water areas in Norwood, Canton and Dedham were ditched. The same methods which were in practice in former years were employed on these CWA and FERA projects, and even though the winter was a severe one and the percentage of efficiency far below that of a favorable season, there was an appreciable gain made in the amount of marsh or wet lands ditched, and many small areas were brought to completion. Federal payrolls to the amount of \$150,384.43 were expended on this work of mosquito control in Massachusetts under the supervision of the State Reclamation Board, from November, 1933, to May 3, 1934.

The regular appropriation for the expenses of the Reclamation Board for 1934 was \$10,822.00, from which total expenditures were made to the amount of \$10,821.92. Of the various reclamation districts still in existence in the state, the Salisbury Reclamation District was the only one which did construction work of any significance. This District, under its local commissioners, secured approval first of a CWA and later an FERA project for the purpose of erecting dikes and dam at the Blackwater River in the town of Salisbury. The closing of this stream had been contemplated for a long period of years, but the District could never secure a majority vote in acreage and value to appropriate the money necessary to accomplish this purpose. With the prospect of having all labor paid for from federal funds, the District finally voted, in February, 1934, an appropriation of \$1,500 to furnish material for the dikes and dam, and work was started late in February. One of the commissioners was appointed administrator of the project by the CWA authorities, and the engineer, supervisor and all laborers were paid for from federal funds. Thus, the State Reclamation Board had no control of the details of this work, and its authority was confined to approval of the general plan of closing the stream, which approval had been granted long before the formation of the CWA project; and the final approval of all such bills as were to be paid for out of the appropriation made by the District, namely \$1,500.

The ERA authorities finally called a halt on this work in Salisbury in November, 1934, and declared that further federal funds would not be expended for labor on the project until sufficient money from the District, or from some other source outside of FERA, was assured for adequate materials to accomplish the successful closing of the stream.

During the fiscal year 1934, there was no state appropriation for mosquito control work as an emergency relief measure, and, outside of the CWA and FERA activities, the only construction work was on such private projects as Cape Cod, Nantucket, Belmont, and Natick.

The maintenance work on the state projects was carried on as in former years. Most of the towns appropriated the amounts assessed by the State Reclamation Board in accordance with Chapter 112 of 1931, and these funds were sent in to the State Treasurer to be spent under the direction of the Board. Of these maintenance funds from the cities and towns of the commonwealth, there was spent during the year 1934 the sum of \$23,468.87. In all the various mosquito control projects, both state and private, including maintenance work, the number of men employed in 1934 was 345. This is in addition to approximately 1,000 men employed on CWA and FERA activities under the supervision of this Board.

In the period from April 1, 1930 to November 30, 1934 there was constructed throughout the commonwealth, under the supervision of the State Reclamation

Board, a total of more than 3,000 miles of mosquito control ditching. This total includes the private projects financed by contributed funds and local appropriations, and work done under state appropriations as an emergency relief measure. Most of the ditching was done on the salt marsh areas, because here was the most serious infestation, and the flight range of the salt marsh mosquito is much greater than that of the fresh water variety. On the vast majority of this ditching, the maintenance was provided for by law, and the continuation of this maintenance assures the further satisfaction of practical freedom from the pests in and adjoining the areas that have already been corrected. Failure to so maintain these ditches would mean eventually a recurrence of these pests in such quantities as to seriously affect values, especially in our many recreation and summer resort sections.

FINANCIAL STATEMENTS

Appended are tables of the allotments and expenditures for the various state and private projects on mosquito control, and also a table showing the assessments made for maintenance work in the different projects for the year of 1934.

STATE PROJECTS

ALLOTMENT OF FUNDS FROM APPROPRIATIONS OF 1931-1932-1933

1. \$270,000—Chapter 112, Acts of 1931
2. 100,000—Chapter 465, Acts of 1931
3. 130,000—Chapter 307, Item 245-b, Acts of 1932
4. 75,000—Chapter 89, Acts of 1933
5. 25,000—Chapter 371, Item 241-b, Acts of 1933
6. 22,767—Local Appropriation & Contributions

Project	1.	2.	3.	4.	5.	6.	Total
Bristol-So. Plymouth	\$90,000	\$25,000	\$4,500	\$5,000	\$1,009.42	\$3,350	\$128,859.42
South Shore	70,000	40,000	57,500	17,000	9,270.97	18,450	212,220.97
North Shore	90,000	5,000	23,000	41,000	13,857.52	150	173,007.52
South Essex	20,000	30,000	30,000	—	—	—	80,000.00
Mashpee	—	—	5,000	3,000	—	—	8,000.00
Martha's Vineyard	—	—	5,000	5,250	862.09	67	11,179.09
Nantucket State	—	—	5,000	3,000	—	—	8,000.00
Wenham	—	—	—	750	—	750	1,500.00
Total	\$270,000	\$100,000	\$130,000	\$75,000	\$25,000.00	\$22,767	\$622,767.00

EXPENDITURES MOSQUITO CONTROL—STATE PROJECTS

(not including maintenance)

<i>Project</i>	<i>Previous to 1934</i>	<i>Fiscal Year 1934</i>	<i>Total</i>
Bristol-So. Plymouth	\$128,265.85	\$593.57	\$128,859.42
South Shore	210,394.89	1,826.08	212,220.97
North Shore (incl. So. Essex)	251,095.81	1,986.55	253,082.36
Mashpee	7,997.94	—	7,997.94
Nantucket State	7,926.98	—	7,926.98
Martha's Vineyard	11,117.01	62.08	11,179.09
Wenham	1,489.54	8.60	1,498.14
Total	\$618,288.02	\$4,476.88	\$622,764.90

MAINTENANCE OF STATE PROJECTS: 1934

<i>Project</i>	<i>Total Assess. for 1934</i>
Bristol-So. Plymouth	\$6,250.00
South Shore	13,675.00
North Shore	6,920.00
Nantucket State	700.00
Martha's Vineyard	1,050.00
Wenham	50.00
Total	\$28,645.00

EXPENDITURES

Mosquito Control—Other Than State Projects

<i>Project</i>	<i>Previous to 1934</i>	<i>Fiscal Year 1934</i>	<i>Total</i>
Cape Cod	\$224,881.22	\$30,327.93	\$225,209.15
Nantucket	29,918.14	1,513.62	31,431.76
Belmont-Cambridge-Watertown	4,653.79	536.84	5,190.63
Natick	546.89	41.65	588.54
	<hr/>	<hr/>	<hr/>
Total	\$260,000.04	\$32,420.04	\$292,420.08

SUMMARY OF EXPENDITURES

	<i>Previous to 1934</i>	<i>Fiscal Year 1934</i>	<i>Total</i>
Total—Other than State Projects	\$260,000.04	\$32,420.04	\$292,420.08
Total—State Projects	618,288.02	4,476.88	622,764.90*
	<hr/>	<hr/>	<hr/>
Total	\$878,288.06	\$36,896.92	\$915,184.98

To the total should be added the amount spent under Chapter 426, Item 708a, of the Acts of 1930, for the construction of dike on the Provincie Lands, owned by the Commonwealth at Provincetown 20,000.00

Grand Total \$935,184.98

*This figure does not include maintenance of State Projects.

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The Commonwealth of Massachusetts

ANNUAL REPORT
OF THE
Commissioner of Agriculture
FOR THE
Year Ending November 30, 1935



The Commonwealth of Massachusetts

DEPARTMENT OF AGRICULTURE

To the Honorable Senate and House of Representatives:

In compliance with the provisions of Chapter 128 of the General Laws, I am herewith making my annual report for the year ending November 30, 1935, for the Department of Agriculture.

Respectfully submitted,

EDGAR L. GILLETT, *Commissioner*

PERSONNEL OF THE DEPARTMENT

COMMISSIONER OF AGRICULTURE—EDGAR L. GILLETT, CANTON

Executive Secretary to the Commissioner—E. L. KING, Newton Centre

ADVISORY BOARD APPOINTED BY THE GOVERNOR AND COUNCIL

JOHN BURSLEY, BARNSTABLE (WEST), Term expires November 30, 1935

STUART L. LITTLE, NEWBURY, Term expires November 30, 1935

WILLIAM CASEY, SPENCER, Term expires November 30, 1936

GEORGE E. TAYLOR, SHELBURNE, Term expires November 30, 1936

JAMES O'BRIEN, LEE, Term expires November 30, 1937

JOHN T. GOGGIN, SEEKONK, Term expires November 30, 1937

DIVISIONS AND ORGANIZATIONS

LIVESTOCK DISEASE CONTROL—*Director*, CHARLES F. RIORDAN, SHARON

DAIRYING AND ANIMAL HUSBANDRY—*Acting Director*, DANIEL J. CURRAN,
MARLBOROUGH

MARKETS—*Director*, FURMER H. GREELEY, SALISBURY

PLANT PEST CONTROL—*Director*, R. HAROLD ALLEN, TAUNTON; *Assistant
Director*, QUINCY S. LOWRY, CANTON

RECLAMATION, SOIL SURVEY AND FAIRS—*Director*, L. B. BOSTON, HOPKINTON;
Assistant Director, A. W. LOMBARD, ARLINGTON

ACTING AGRICULTURIST—LESTER T. TOMPKINS, ESSEX

STATE RECLAMATION BOARD

Chairman, EDWARD WRIGHT, DEDHAM

GEN. RICHARD K. HALE, BROOKLINE

L. B. BOSTON, HOPKINTON

Secretary, GEORGE R. STRATTON, HOPKINTON

REPORT OF THE COMMISSIONER

Under the provisions of Chapter 340, Acts of 1934, an act abolishing the Division of Animal Industry in the Department of Conservation, and establishing and defining the powers and duties of the Division of Livestock Disease Control in the Department of Agriculture, the Department of Agriculture took over duties, new responsibilities, and the supervision of additional personnel with the coming of the new Division of Livestock Disease Control. Many authorities throughout the commonwealth had long advocated this change, inasmuch as there was a very definite relationship between the work of the Department of Agriculture and the work of the Division of Animal Industry, changed by recent legislation to the Division of Livestock Disease Control. It would now appear that with the close cooperation that will exist between the Division of Livestock Disease Control and the other Divisions of the Department of Agriculture a greater and more comprehensive service shall be rendered to the farmers of the state, especially the dairy farmers and livestock breeders.

FARMS FOR SALE BULLETIN

Under the direction of Mr. E. L. King, Executive Secretary to the Commissioner, considerable time and attention has been given to the publishing of our bulletin on "Farms for Sale". The department has attempted to make this service available to a greater number of farmers by various forms of advertising and radio broadcasts. A more appreciable knowledge of the work being done in this line has reached a greater number of farmers.

SHEEP DEMONSTRATION FARM

The sheep demonstration farm, under the supervision of this department, is now being conducted by Oscar Belden & Sons in Bradstreet, Massachusetts. Our study and investigation of the possibilities for raising sheep profitably in Massachusetts indicated that our farmers who were interested in breeding and raising sheep would benefit in a large measure by a sheep demonstration farm, where modern practices and scientific principles of sheep farm management could be practically demonstrated to those interested in raising sheep. It is felt that a forward step has been taken in reviving the sheep industry in this state, causing our farmers to become more livestock-minded. It has been definitely shown that we have splendid markets for wool, hothouse lambs and dressed lamb produce. Our local meat dressing establishments are looking forward to the day when they can receive the greater proportion of their meat supply from nearby farms.

MILK REGULATION BOARD

Several meetings and hearings were conducted by the Milk Regulation Board during the early months of 1935, and the rules and regulations establishing grades of milk were promulgated by this board on May 8, 1935. It might well appear that these rules and regulations would tend to solve many of the perplexing problems relating to the grades of milk that confused our Massachusetts markets for many years. The following rules and regulations have been adopted by the Milk Regulation Board and approved by the Governor and council:

"Rules and Regulations Establishing Grades of Milk, Regulating and Establishing Standards in accordance with the provisions of the General Laws (Ter. Ed.) Chapter 94, section 13 as amended by Chapter 263 of the Acts of 1935".

1. *Milk Grades:*

The following official grades of milk are hereby established.

- | | |
|---------------------|-------------------------------|
| 1. Milk—Raw | 5. Special Milk—Raw |
| 2. Milk—Pasteurized | 6. Special Milk—Pasteurized |
| 3. Grade A Milk—Raw | 7. Certified Milk—Raw |
| 4. Grade A Milk | 8. Certified Milk—Pasteurized |

2. *Definitions:*

For the purposes of these rules and regulations the following words and phrases shall, except as otherwise provided, have the following meanings:

BOTTLE.—A bottle of a form or type approved for the designated use by the Director of Standards of the Department of Labor and Industries or as otherwise specifically authorized by law.

CAP.—Wherever reference is made to a cap that will protect from contamination the pouring lip of a bottle the word "cap" shall mean a cap extending over the top of the bottle and covering the entire portion of the lip that comes in contact with the milk when poured from the bottle.

COLONY.—An isolated growth of bacteria on solid media.

DAIRY FARM.—Any place or premises whereat or whereon one or more cows are kept, a part or the whole of the milk (including the cream thereof) obtained from such cow or cows being sold, or exposed or delivered for sale, to any person; provided, that such dairy farm, if so required by law, has in possession, or is entitled to receive a certificate of registration, in full force and effect, issued by the Director.

DIRECTOR.—The Director of the Division of Dairying and Animal Husbandry of the Department of Agriculture.

MILK.—The lacteal secretion obtained as the result of the complete milking of one or more healthy cows, excluding any such secretion obtained within fifteen days before and five days after calving, and within such longer period as may be necessary to render the milk practically colostrum-free.

PERSON, shall, whenever pertinent, include an association, firm, partnership or corporation.

3. *General Labeling Standards:*

No person shall sell or offer or expose for sale any graded milk unless the

container thereof shall have attached thereto a label, tag or cap conspicuously bearing on a clear, plain background the proper grade designation in the exact language designated herein, and in a distinctly contrasting color, or if the cap is made of aluminum or other metallic substance the lettering may be raised or sunk by means of a die, and if such container is a bottle, the grade designation shall be placed upon the cap of the bottle. The grade designation, if placed upon a cap, shall be placed on the upper half of the cap in an outlined semicircle not less than one inch in diameter, which shall be reserved exclusively for such grade designation, but no other lettering or other extraneous matter shall be placed in the space reserved for the grade designation. The label or cap shall bear only one of the following grade designations: *Milk—Raw*; *Milk—Pasteurized*; *Grade A Milk—Raw*; *Grade A Milk*; *Special Milk—Raw*; *Special Milk—Pasteurized*; *Certified Milk—Raw*; *Certified Milk—Pasteurized*. The cap or label on the container of such milk may bear the words "Vitamin D" if the milk contained therein lawfully contains Vitamin D in excess of the amount present in normal milk drawn from cows not given any feed for the purpose of increasing the Vitamin D content of the milk drawn from them, and if the sale of such milk does not violate any existing law or any rule or regulation lawfully made, and if all milk so sold, or offered or exposed for sale, shall be milk as defined under authority of law.

Any container of milk may be labeled with the name of a breed of cows (such as Holstein, Ayrshire, Jersey or Guernsey), provided, that all milk in the container so labeled has been obtained exclusively from the breed of cows so specified. (See section 191 of Chapter 94 of the General Laws (Ter. Ed.)). Any container of milk may be labeled with a statement of the name of the state wherein such milk was produced; provided, that all the milk in the container so labeled was produced exclusively in said state. (See section 13B of Chapter 94 of the General Laws (Ter. Ed.)) No false, ambiguous or misleading word, term or design shall appear on any cap or shall be attached to any container of graded milk.

All paper or pasteboard caps to be used on bottles of milk shall be so stored or kept as to protect them from moisture, dust or contamination.

4. *General Procedure for Ascertaining Bacterial Standards:*

A sample of milk taken for the purpose of determining the bacterial count thereof shall be taken only from milk intended for sale or delivery or from milk intended to be pasteurized. If the sample so taken shows upon examination a higher bacterial count than as stated or permitted in the pertinent provisions of these regulations, a written or printed notice of the bacterial count thereof shall be sent within ten days after obtaining the result of such examination to the person from whom the sample was taken or to the person responsible for the condition of such milk. If the inspector of milk, collector of samples, department or board obtaining such sample takes additional samples within a period of not less than seven days nor more than two months after such notice has been sent, three such samples shall be taken from three different containers at substantially the same time, or, if the milk is obtained from a pasteurization vat prior to pasteurization thereof, samples shall be taken from three different fillings of the vat on the same day or from a single filling on three different days within a period of fourteen days. An excess in bacterial count, over that stated or permitted in the pertinent provisions of these rules and regulations, occurring in a majority of such additional samples so taken, shall constitute a violation of such rules and regulations.

All bacterial counts shall be made by the Standard Plate Methods of the American Public Health Association in effect at the time the examination is made.

5. *Regulations and Standards for Milk Grades:*

(a) *Milk—Raw* shall be produced on a dairy farm that complies with all pertinent rules, regulations and minimum requirements legally made or promulgated by the Milk Regulation Board, the Department of Agriculture, the Department of Public Health, or local board of health, in effect at the time of such production, and no portion of such milk shall be drawn from the cow more than seventy-two hours prior to the delivery of such milk to the con-

sumer. Milk—Raw shall show a bacterial count of not more than four hundred thousand colonies per cubic centimeter. When Milk—Raw is sold, or offered, or exposed for sale, each container thereof shall bear a label or be covered with a cap bearing the words *Milk—Raw*.

(b) *Milk—Pasteurized* shall be *Milk—Raw*, pasteurized in compliance with section 1 of chapter 94 of the General Laws, (Ter. Ed.), in establishments operated in accordance with the regulations made by the Department of Public Health under authority of section 48A of said chapter 94, and such milk shall show a bacterial count of not more than four hundred thousand colonies per cubic centimeter before pasteurization and of not more than forty thousand colonies per cubic centimeter when delivered to the consumer. When *Milk—Pasteurized* is sold, or offered or exposed for sale, each container thereof shall bear a label or be covered with a cap bearing the words *Milk—Pasteurized*, and, if in bottles, such caps shall have been affixed only by means of a machine capper.

(c) *Grade A Milk—Raw* shall be only milk produced on a dairy farm which has in possession, or is entitled to receive, in addition to a certificate of registration issued by the Director, if so required by law, a printed, written or stamped statement, in full force and effect, signed personally or in facsimile form by the Director, based upon inspections of such dairy farm made by the Milk Regulation Board, the Department of Agriculture, the Department of Public Health, or local board of health at least twice a year at intervals of not less than five nor more than seven months, and to be physically attached to such certificate, if any, stating that such dairy farm has upon inspection been found to conform, in addition to the requirements for the production, processing, labeling and sale of *Milk—Raw* issued by the Milk Regulation Board or by the local board of health, to the following requirements for the production, processing, labeling and sale of *Grade A Milk—Raw*.

All cows on such dairy farm shall have been tested within twelve calendar months prior to the original inspection, and thereafter at intervals of not exceeding twelve months, by the tuberculin test under state and federal supervision and found not to react thereto, or shall be part of an accredited tuberculosis-free herd under state and federal supervision, or shall be part of a herd located in a modified accredited area under state and federal supervision.

The hair on or near the udder and flanks of every such cow shall be kept properly clipped. Such cows shall be milked only into hooded metal milk pails or with clean milking machines.

Grade A Milk—Raw shall be delivered to the consumer within forty-eight hours after the earliest time of drawing from the cow any portion thereof, shall show a bacterial count of not more than one hundred thousand colonies per cubic centimeter when delivered to the consumer, shall be milk containing not less than four per cent of milk fat and not less than twelve and two-tenths per cent of total milk solids, and at retail, shall be sold, or offered or exposed for sale only in bottles covered with a cap that will protect from contamination the pouring lip of the bottle. Every such cap coming in contact with such milk shall be affixed only by means of a machine capper. Every exposed cap shall bear the words *Grade A Milk—Raw* and the day of the week on which such milk was produced. No such milk shall be bottled later than twenty hours after the earliest time of drawing from the cow any portion thereof.

(d) *Grade A Milk* shall be only *Grade A Milk—Raw* which has been pasteurized within the commonwealth, in compliance with section 1 of chapter 94 of the General Laws (Ter. Ed.), in establishments operated in accordance with the regulations made by the Department of Public Health under authority of section 48A of said chapter 94 of the General Laws (Ter. Ed.) and in accordance with said section, provided that immediately prior to such pasteurization all apparatus used therefor or therein shall have been thoroughly cleaned and sterilized. No such milk shall be pasteurized later than forty-eight hours after the earliest time of drawing from the cow any portion thereof, and when delivered to the consumer such milk shall show a bacterial count of not more than ten thousand colonies per cubic centimeter. *Grade A Milk*, when bottled, shall be bottled immediately after pasteurization and only

at the place where such milk is pasteurized. The bottles shall be capped immediately after filling in the manner prescribed for capping *Grade A Milk—Raw*, except that the exposed cap shall bear the designation *Grade A Milk*, the word *Pasteurized* and also state the day of the week on which milk was pasteurized.

(e) *Special Milk—Raw* shall be only milk produced on a dairy farm which has in possession, or is entitled to receive, in addition to a certificate of registration issued by the Director if so required by law, a printed, written or stamped statement, in full force and effect, signed personally or in facsimile form by the Director, based upon inspections of such dairy farm made by the Milk Regulation Board, the Department of Agriculture, the Department of Public Health, or local board of health, at least twice a year at intervals of not less than five nor more than seven months, and to be physically attached to such certificate, if any, stating that such dairy farm has upon inspection been found to conform, in addition to the requirements for the production, processing, and labeling, and sale of *Grade A Milk—Raw* issued by the Milk Regulation Board or by the local board of health to the following requirements for production, processing, and labeling and sale of *Special Milk—Raw*.

Before any person is engaged as a milker or is employed in handling *Special Milk—Raw*, he must obtain from the Massachusetts Department of Public Health a certificate stating that on the evidence obtained by the examination of specimens submitted as coming from him he is not a typhoid carrier. No person shall be so engaged or employed at any time who has a sore throat or is suffering from tuberculosis, diarrhoea or dysentery or who is a typhoid carrier.

Special Milk—Raw shall conform to the Massachusetts legal standard for milk, shall be delivered to the consumer within forty-eight hours after the earliest time of drawing any portion thereof from the cow, and shall show a bacterial count of not more than fifty thousand colonies per cubic centimeter when delivered to the consumer, shall be bottled only at the place where produced, and at retail, shall be sold, or offered, or exposed for sale only in bottles. Each bottle containing such milk shall be capped with a cap which will protect from contamination the pouring lip of such bottle and every such cap coming in contact with such milk shall be affixed only by means of a machine capper. Every such cap shall bear the designation *Special Milk—Raw* and the day of the week on which such milk was produced. No such milk shall be bottled later than twenty-hours after the earliest time of drawing from the cow any portion thereof.

(f) *Special Milk—Pasteurized* shall be only *Special Milk—Raw* which has been pasteurized within the commonwealth in compliance with section 1 of chapter 94 of the General Laws (Ter. Ed.) in establishments operated in accordance with the regulations made by the Department of Public Health under authority of section 48A of chapter 94 of the General Laws (Ter. Ed.) and in accordance with said section, provided, that immediately prior to such pasteurization all apparatus used therefor or therein shall have been thoroughly cleaned and sterilized. Such milk, when delivered to the consumer, shall show a bacterial count of not more than five thousand colonies per cubic centimeter. *Special Milk—Pasteurized*, when bottled, shall be bottled immediately after pasteurization and only at the place where such milk is pasteurized. The bottles shall be capped immediately after filling in the manner prescribed for capping *Special Milk—Raw*, except that the caps shall bear the designation *Special Milk—Pasteurized*, the day of the week on which such milk was pasteurized, and may also bear a statement of the minimum percentage of butter fat contained in such milk.

(g) *Certified Milk—Raw* shall be only milk produced in accordance with sections 20 to 25, inclusive, of chapter 180 of the General Laws and amendments thereto (Ter. Ed.) and the rules and regulations of the Department of Public Health made thereunder and with the standards of purity and quality for certified milk established by the American Association of Medical Milk Commissions in effect when such milk is produced.

(h) *Certified Milk—Pasteurized* shall be only *Certified Milk—Raw*, pasteur-

ized, in compliance with section 1 of chapter 94 of the General Laws (Ter. Ed.) at the place where such milk is produced, only in establishments operated in accordance with the regulations made by the Department of Public Health under authority of section 48A of chapter 94 of the General Laws (Ter. Ed.) provided that immediately prior to such pasteurization all apparatus used therefor or therein shall have been thoroughly cleaned and sterilized. No such milk shall be pasteurized later than twenty hours after the earliest time of drawing from the cow any portion thereof. Such milk, prior to such pasteurization, shall contain not less than four per cent milk fat as provided by the regulations of the American Association of Medical Milk Commissions in effect when such milk is produced and subsequent to pasteurization and when delivered to the consumer, shall not show a bacterial count of more than five hundred colonies per cubic centimeter. Such milk shall be capped in accordance with the standards established by the American Association of Medical Milk Commissions and every such cap shall bear the words *Certified Milk—Pasteurized* and the day of the week upon which such milk was pasteurized.

6. Caps not in strict compliance with these rules, regulations and standards may be used for a period not exceeding six months from the effective date of such rules, regulations and standards, providing that the grade designation is clearly set forth and all other requirements relating to the production, processing, labeling and sale have been substantially complied with.

EDGAR L. GILLET, CHAIRMAN,
Commissioner of Agriculture.

JOSEPH E. WARNER,
Attorney General.

HENRY D. CHADWICK,
Commissioner of Public Health

APPROVED IN COUNCIL:

May 8, 1935

WILLIAM L. REED,
Executive Secretary.

FRESH EGG LAW

The sale of fresh eggs in our large markets and at our roadside stands has presented serious problems to us in the past, due to the fact that the eggs sold or offered for sale were not fresh eggs within a reasonable definition of the term, and in many cases the advertisements in the newspapers, stores and along the highways were grossly misrepresentative of the quality of eggs advertised as fresh or strictly fresh eggs. Our poultry farmers were greatly concerned over the ever-increasing tendency to advertise and sell as fresh eggs, eggs that were coming in from distant places and were not fresh within the accepted definition of this term when they were sold to the consumer. Complaints were received by the consumers regarding the quality of the eggs purchased as fresh or strictly fresh eggs. To remedy this problem legislation was approved by the Governor on June 21, 1935, and became effective in ninety days. The provisions of this fresh egg law are as follows:

An Act Relative to the Sale and Distribution of Eggs

Chapter ninety-four of the General Laws is hereby amended by inserting after section ninety, as appearing in the Tercentenary Edition, the following new section:—

SECTION 90A. Except as hereinafter otherwise provided, no person shall sell, or offer, expose or advertise for sale, eggs as "fresh eggs", "strictly fresh eggs", "nearby eggs" or "new-laid eggs" or eggs described with words of similar import, unless they meet the following specifications when examined by a method known as "candling", viz.:—(1) the shell shall be clean and sound, (2) the air cell shall be not more than one quarter inch in depth and shall be localized and regular in outline, (3) the white shall be firm and clear, (4) the yolk shall not be plainly visible but may be dimly or slightly visible, and (5) there shall be no visible germ development.

Not more than ten per cent of the number of eggs sold at wholesale or offered, exposed or advertised for sale as aforesaid under any such description, and not more than two eggs in each dozen sold at retail or offered, exposed or advertised for sale as aforesaid under any such description, may vary from

the foregoing specifications but only in the following particulars:—(1) the air cell may be not more than three eighths of an inch in depth and may be slightly tremulous, (2) the yolk may be plainly visible and mobile, (3) the white may be reasonably firm, and (4) germ development may be slightly visible; and, in addition, there shall be permitted, in respect to the selling, or offering, exposing or advertising for sale, of eggs at wholesale as aforesaid, a reasonable tolerance established by rules and regulations of the department, authority to establish the same being hereby granted.

No person shall sell, or offer or expose for sale, eggs which have been preserved or protected by treating the shells thereof unless the basket, box or other container in which the eggs are placed shall be plainly marked with letters not less than one half inch in height as "shell-treated" or "shell-protected". Whoever violates any provision of this section shall be punished by a fine of not more than twenty-five dollars for the first offence, and not more than one hundred dollars for each subsequent offence. The department of agriculture shall enforce the provisions of this section.

There have been positive trends during the past year that agriculture is again beginning to assert itself, that price levels for farm products are rising, that a general feeling of confidence prevails among our farmers, and they are ready to face the future of agriculture in Massachusetts with renewed strength and energy.

REPORT OF THE DIVISION OF DAIRYING AND ANIMAL HUSBANDRY

QUALITY MILK ON MASSACHUSETTS FARMS

Our dairy inspection program has been largely responsible for improving the quality of milk on our Massachusetts farms and on other dairy farms outside of Massachusetts that are supplying our local markets with fluid milk. It has been the aim of the Division of Dairying to raise the standard of milk production on each farm in Massachusetts so that any local board of health or any milk dealer could reasonably accept all milk within a nearby area, thereby lessening the cost of inspection service, cost of transportation and other costs that might react favorably on the price charged to the consumer.

Massachusetts has been divided into districts and each of our six dairy farm inspectors has been assigned certain definite areas to inspect. Within each of these areas our inspectors are filling in the gaps that are left by the local boards of health in the inspection program for the entire Commonwealth. During the first part of the year 1934 we contacted various boards of health and obtained a list of the dairy farms to be inspected by them, and our inspectors were assigned the dairy farms that remained to be inspected. It was found later that the local boards of health for various reasons could not carry out their entire program of farm inspection, so that it was necessary for our inspectors to retrace their steps, in many cases going over the same territory two or three times in an effort to complete the inspection for their districts. During the year 1935 we started out with a program that included the total number of farms that were inspected in 1934 and in many districts it was again necessary to go over the same territory twice in order to fill in certain gaps that were left by certain boards of health. Our 1936 program will include the maximum number of farms that has been allotted to the State for inspection, and if no further adjustments are necessary it will be possible to complete the inspection work in Massachusetts in a shorter number of months and spend more time in the other New England states. During the year 1935 the only time spent in the states of Maine, New Hampshire, Vermont and eastern New York was during the month of November, and at that time three temporary inspectors were added to our inspection force, and every creamery and milk plant in the four states mentioned above was visited and a complete list of all producers was obtained, showing the amount of milk produced and a further statement indicating whether or not each producer had a certificate of registration issued by the Division of Dairying. These records would indicate that many dealers were obtaining some milk from farms that do not have a certificate of registration, and as soon as all records have been carefully

compiled it will be necessary to take such action as the law provides in further adjusting this important matter. There is a responsibility on the Division of Dairying and the local boards of health to inspect an adequate amount of quality milk for the consumers of Massachusetts, and there is a very definite responsibility on the dealers to sell milk that comes only from farms that have a certificate of registration.

The dairy farm inspection program has now been in operation for over two years. The producers and dealers have been acquainted with the provisions of the law and we have every reason to expect a substantial compliance with this law.

The law provides that prior to the revocation or refusal to issue a certificate of registration to a dairy farm an official hearing will be held. In accordance with this provision 497 hearings were held during the current year, and it was necessary in four cases to bring the producer into court for failure to comply fully with the rules and regulations of the Milk Regulation Board. Most cases were disposed of at hearings, at which time the producer agreed to comply with the regulations within a period of time not exceeding thirty days, and our reinspection indicated that the producer had fulfilled his part of the agreement. The local boards of health are cooperating with the division in carrying on a quality milk program. During the past year the inspection report on farms inspected by local boards of health have been submitted more promptly than before and it has been possible to keep our records more current. However, a further improvement along this line can be made, and we hope that the year 1936 will find the local boards of health cooperating even more closely with the division in the matter of a more complete registration of our dairy farms and a more complete registration of the milk dealers. During November, 1935, the acting director of the Division of Dairying visited the conference of county agents at Amherst and suggested that in all cases where dairy farms had been disapproved by state inspectors or local inspectors the fact of disapproval be submitted to the county agents and their assistance enlisted in bringing about a satisfactory condition on these disapproved dairy farms. In the past our dairy farm inspectors have done a great deal of educational work, but apparently the time has arrived when a greater number of farms must be inspected and less time devoted to an educational program. It would appear to be the function of the county agents to help these dairy farmers put their places in such condition that they would be entitled to a certificate of registration, or definitely advise the Division of Dairying that these dairy farmers do not possess the qualifications and aptitude for carrying on a dairy farm, and recommend that a certificate of registration either be revoked or refused. Our law requires that each milk dealer register with the division and submit the names of all producers that are supplying them with milk and the amount of milk supplied by each dairy farm. Many of the milk dealers have failed to comply with this provision, and it was necessary during the year 1935 to conduct hearings in Boston, Springfield, Pittsfield, Greenfield, Worcester and New Bedford. Two hundred and seventeen dealers were summoned to appear at these hearings for failure to properly register. In practically all cases the registration was completed and further court action was not necessary. It will be expected, however, in the future that dealers shall register promptly during the month of June and the Commonwealth saved the expense and time of official hearings.

The Division of Dairying and Animal Husbandry will continue to vigorously carry on the dairy inspection program so that a high quality milk will be produced on every Massachusetts dairy farm. We hope that a much greater amount of Grade A milk will be obtained from our Massachusetts dairies. We believe that many of these dairy farms are now producing a Grade A product and that the milk dealers should recognize the fact that nearness to market is an asset in the sale and distribution of Grade A milk. We have issued several Special milk certificates to dairy farms that have met the high requirements for this Special milk product. It will be our purpose to inspect very carefully production of milk on our Special milk farms to the end that the consuming

public will be fully protected and safeguarded in the use of this milk in its raw state.

INSPECTION OF DAIRY PLANTS

One inspector from this division has been assigned the work in a State-wide program of plant inspection. His work involves chiefly the checking of milk samples taken by milk dealers who are paying producers on the basis of weight and test. We have received many complaints during the year that the butterfat test, which is used by the milk dealers as a basis for payment to the producer, has been uniformly low. In many cases the producers have had private butterfat tests made prior to communicating with the Department of Agriculture. In all cases we have sent our inspector to the milk plants and checked all samples. Our investigation would indicate that there are very few dealers in this State who would intentionally make improper butterfat tests in order to pay the producer less than he should receive. The few questionable cases that have come to our attention have been very carefully and frequently investigated, and it is our opinion that these milk plants are now testing more accurately and that the producers are receiving full payment on the basis of a butterfat test. The following table gives a statement of the work completed in connection with our plant inspection program:

Babcock tests made	5,208	Milk inspectors visited	186
Producer milk tested	4,659	Farms visited	75
Producers interviewed	452	Reductase tests made	159
Dealers or creameries visited	875	Sediment tests made	199
Dealers' samples tested	186	Temperatures taken	586
Complaints investigated	109		

POULTRY PROGRAM

Several cases have arisen during the past year where the importance of our new law relative to the transportation of live poultry is clearly set forth. The State police have cooperated closely in apprehending thieves who have been transporting stolen poultry on the highways, and these cases have been brought to the attention of the courts and substantial fines and imprisonment have been meted to these ever-troublesome violators of our poultry thieving law. The drastic provisions of this law have acted as a deterring factor, and the fact of apprehending some of the leaders of an apparently organized gang of poultry thieves has relieved the situation somewhat in connection with the wholesale stealing of poultry in this State.

Our program of regulatory work in poultry has increased considerably during the past year so that it has been necessary to ask for the employment of another poultry inspector to assist in this expanding program of work. Our poultry breeders are recognizing the importance of official grades that are adequately supervised and regulated. Our present program relates to four classes of poultry flocks: Massachusetts Record of Performance Accredited; Massachusetts Certified Accredited; Massachusetts Pullorum Accredited; Massachusetts Pullorum Passed. This year the grade known as Massachusetts Record of Performance Accredited was responsible for most satisfactory results to our local breeders. There were nineteen poultry plants under the supervision of this division and unannounced visits were made to these plants whereby the trap-nesting was taken over for the day and the checking of the trap sheets for accuracy was made. An increase of two flocks under supervision was made over the previous years' records.

Twenty-six poultry breeders are taking advantage of the grade Massachusetts Certified Accredited and a total of 31,421 birds were inspected by this department. Each bird inspected was leg-banded, provided it met the grade requirements for pullorum disease freedom, health and vigor, productive capacity, and reasonable freedom from standard disqualifications. Visits were made to each breeder during the hatching season to check on the size of all hatching eggs and to make sure that the grade requirements were met by the various breeders.

Our other grades have been used by many of our breeders with good results, and the grade name has come to mean considerable to the purchasers of poultry stock from Massachusetts breeders. Our breeders are recognizing the sales value of grades that have strict requirements and are adequately inspected so that each breeder must substantially meet the requirements of the grade. The quality of breeding stock in Massachusetts is second to none in the United States and we take particular pride in having considerable to do with this program that is developing each year and which in time will mean much more to our Massachusetts poultry industry. The addition of a new permanent inspector will mean that our program will be expedited and the particular aims of our poultry industry for more and better breeding stock in Massachusetts will be more quickly realized.

SHEEP DEMONSTRATION FARM

The needs of the sheep industry were carefully considered during the past year and the farm of Oscar Belden and Son in Bradstreet in the Connecticut Valley was selected as a sheep demonstration farm. For three generations this farm has been interested in scientific sheep breeding and has maintained a flock of registered Southdowns that have received recognition throughout the United States. During the past few years in addition to receipts from wool and spring lambs the Beldens specialized in hothouse lambs and succeeded in developing a very satisfactory market for these off-season lambs. This farm has large acreages in tobacco, onions and fruit, but the sheep project is one of the major parts of their farm program. The feeding, care and management of the flock have always been conducted under the most modern scientific principles and methods, and the Beldens have always been quite willing to share with other sheep breeders the information that they have obtained through years of experience. It is therefore most natural that this farm was selected as a sheep demonstration farm, and a meeting of all persons interested in sheep growing was held on this farm on November 20, 1935. An interesting program was arranged and the results of the meeting were educational. Several meetings of this kind will probably be held during the succeeding year, and it is felt that the sheep demonstration farm will prove of great value to the sheep industry in Massachusetts.

Our wool pool continues to bring home to the farmers a price premium for their wool that is manufactured into blankets. During the past year over 1,100 blankets were manufactured and distributed among the sheep growers in this State. The farmer has sold virgin wool blankets at a price of \$8 apiece and this has netted the farmer approximately 45 cents a pound for his wool, which price is far in excess of the amount that could be obtained in any other way.

We regret exceedingly the passing of Carleton D. Richardson of West Brookfield, who was associated with the wool pool and with the other activities of this division for the past fifteen years. His deeds speak for themselves. He was known among the farmers as a real friend and his sudden death caused a profound and sincere sorrow among those who had associated with him in agricultural activities and knew him for the splendid service that he always rendered. The work of the wool pool has been taken over by his son, Milton Richardson, who will carry on the program instituted by his father.

The division has attempted to renew interest in various phases of animal husbandry that have not been covered during the past few years. Goat breeders throughout the state have called upon us for service and we have attempted to organize this industry and evaluate its importance. Several associations of goat breeders have been formed and it would appear that they have a product to sell that is in demand in many sections of the State. Their breeders are energetic and ready to give their time and best efforts toward building up this industry.

For the past few years there has been a demand upon the department for assistance in developing a source of more and better draft horses within the Commonwealth. We admit readily the value and usefulness of the tractor in speeding up our farm programs, but it would appear in many sections of the

State that the draft horse will continue to be the mainstay of accomplishing many kinds of labor on the farm. We have attempted during the current year to obtain the registration of stallions in the State and have compiled important data on the number of draft horses. We have been in touch constantly with various sources throughout the United States where the type of draft horse needed on our farms could be obtained at reasonable prices. In fact, we have attempted in every possible way to give to the farmers of this Commonwealth a service that they need in locating different sources of high grade dairy cows, ewes, draft horses and other farm animals, and acquainting individual farmers with the information obtained. This service should provide to the buyer and seller a common mutual interest.

LICENSING AND BONDING OF MILK DEALERS

Protecting the payment to the dairy farmer in connection with the bonding and licensing of milk dealers has continued to be of an exacting nature. This law intends that the payments to the dairy farmer by the milk dealer shall be protected and that the milk dealer shall file with the Commissioner of Agriculture a bond or other security that is substantially equivalent to the purchase price of milk from Massachusetts dairy farmers for one payment period. We have approximately \$600,000 in securities of different types filed with the Commissioner of Agriculture and deposited in the State Treasurer's office. In a few cases it has been necessary for this division to reach and apply the bond or other security filed with the Commissioner and pay to the producer certain amounts that were owed for milk. We have distributed in this way an amount equal to \$25,000. In five cases it has been necessary for us to bring certain cases to the attention of the courts in our endeavor to obtain satisfactory adjustments for the producers. We might say, however, that the percentage of milk dealers who appear unwilling to comply fully with the provisions of the licensing and bonding law is small and that our associations with dealers have been most satisfactory. We have attempted to secure from the dealer in all cases a type of liquid security that could be easily reached and applied to the payment of overdue accounts. We have been successful in eliminating to a large extent the number of chattel mortgages that were filed with the Commissioner of Agriculture during the first year of the operation of this law. It will be our purpose to accept from the milk dealer only that type of security that will afford the producer the highest form of protection. This law is recognized as a form of relief that has been needed for years in the milk industry and it is only by constant effort and strict enforcement that the relief intended by this law can be brought to the dairy farmer. We shall try in the enforcement of this law, as in our other laws, to mix a certain amount of education with our regulatory program. We have prosecuted certain cases in our courts only when every other means at our disposal failed, and we shall continue to give every party at interest in the milk industry impartial consideration to the end that the entire milk industry in Massachusetts shall develop on a profitable basis.

REPORT OF THE DIVISION OF MARKETS

SHIPPING POINT INSPECTION

Shipping point inspection service was maintained on onions and apples during the shipping season. This work is done under a cooperative agreement with the United States Department of Agriculture. Fees are charged for inspection certificates at rates which are designed to make this service eventually self-supporting.

The onion work was done in the Connecticut Valley. An inspector of this division was stationed at Northhampton from early August into October. Inspections were made at loading stations in the Valley towns.

Activities of the inspector covered not only the actual certification of shipments, but he also carried on considerable educational work among the growers and shippers, by giving them instructions concerning grades and methods of handling the crop.

Comparatively favorable prices received for onions during the past year or two are resulting in a tendency to expand acreage in the Valley. This is likely to bring about an increased demand for shipping point inspection on this crop.

Demand for shipping point inspection of apples showed a substantial increase over the previous year, because of the good market for local apples in foreign countries, particularly Great Britain. This division continued its apple work, having men available at all times during the season in the important growing sections of the state. Much of this work must be done at the orchard, in order that growers may know whether their apples meet the exacting demands of foreign governments. Growers thereby avoid the difficulties and delays that would result on shipments which might be rejected on the dock.

APPLE GRADING LAW

Enforcement of the apple grading law was carried on by inspectors in city markets, at country shipping points, and in cold storage warehouses. Rapid increase in the development of country cold storage facilities has made it necessary for this department to extend its storage inspection into these plants. Up to within the past five or six years most of the apples held under refrigeration were stored in city warehouses. Now the erection of country plants, with an aggregate capacity in this state of upwards of 800,000 bushels has brought about a shift of this business toward the apple regions.

Policy of holding hearings before representatives of this division has been continued, thus holding to a minimum the necessity of taking court action against offenders of the law.

PRODUCE MARKET NEWS

Daily wholesale market reports were issued throughout the year on the Boston, Worcester, and Springfield produce markets. The Boston reports were mailed in mimeograph form to subscribers, and were broadcast over two Boston radio stations. The Worcester reports were distributed in mimeograph form, were carried daily in the local papers, and were broadcast over a Worcester radio station. The Springfield reports were carried daily in both local papers and broadcast. Springfield reports are also supplemented by twice-a-week quotations on the local poultry and egg sales.

Special Apple Report

The special Apple Market Report was issued regularly throughout nine months of the apple season. Feature of this service during the past year has been the building up of information on cold storage holdings of McIntosh apples. During the past five years the scope of this work has been gradually enlarged so that reports on practically all important sections in New England have been compiled on a monthly, and in some cases, weekly basis. During the past year arrangements were completed whereby this service was extended into the Hudson Valley in New York State. This section is a heavy producer of McIntosh apples, and is the most important competitor of Massachusetts apples on eastern markets. In response to a strong demand from our apple growers this division has now developed contacts whereby monthly reports on Hudson Valley holdings are issued. This service has never been performed previously, either by public or private agency.

Standardization Work

Enforcement of the Farm Products Grading Law was continued throughout the year. Inspection of produce carrying the New England Quality Farm Products Label was made at the points of greatest advantage, Market centers or assembling plants such as the Brockton, and Springfield Egg Auctions and the Faneuil Hall Market district were the most important points of operation. Farm inspections were also made wherever necessary.

Asparagus.—The department continued its inspection service on this product, mainly for the benefit of the Middlesex Asparagus Growers' Association. Three mornings a week during the months of May, June and the early part of July the inspectors checked up on the quality of the product as it arrived on the market.

Farmers' Roadside Stands.—The program of identifying farmers' roadside stands with an official sign indicating that the stand meets with the approval of the department was continued. Inspection of these stands was made at various intervals and records kept of the stand relative to its cleanliness, appearance of produce, origin of produce, packaging so that the surface of the container was representative of the entire contents. Overfacing, in other words, is a violation of the agreement.

Meetings, news releases, radio announcements were the result of some of the department's efforts in educating the consumer about these stands.

Thirty-five users of the sign are organized into an association which takes advantage of the benefits it can obtain through group action.

Fresh Egg Law.—This is a new law, which became effective September 20, 1935. The purpose of the law is to define a fresh egg. Previous to this law the department collected information from states where egg legislation of a similar nature was in effect. Approximately two years of study had been put into this law.

Since its enactment one full time egg inspector has been employed. Occasional temporary help has also been used. Approximately 1500 inspections were made from September 20, 1935-November 30, 1935. Most of the inspections were made at stores. In almost every instance the inspector received the best of cooperation from the storekeeper, who is interested in knowing the quality of the product which he is selling. He is interested in knowing whether or not he is getting the quality that he is paying for. Many meetings were held before poultrymen, retailers of eggs, or storekeepers, and consumers for the purpose of acquainting these various interested groups with the law and how it affects them. Exhibits showing the specifications or factors which determine egg quality were displayed at fairs and meetings. Many grading and candling demonstrations were given. Special literature was compiled and published in order to acquaint storekeepers with the best methods of handling and caring for eggs with special reference to the Fresh Egg Law.

Turkeys.—A limited amount of inspection work was done on turkeys which were tagged with the quality products label. Information on market conditions were sent to turkey raisers interested in receiving this data.

Home Canners.—The department cooperated with the Massachusetts Home Canners Association in securing space for canned goods displays.

Retail Market News

Encouragement of increased use of native products has continued to feature retail market news service through market reports, news releases, radio broadcasts, and other talks, exhibits, and special newspaper articles.

The Boston weekly retail price report was issued regularly. The report gives the commonly prevailing range of retail price on fruits, vegetables, meats, fish and dairy counter products and is headed by a news paragraph directing attention to plentiful and low-priced items and native products. Weekly reports of Springfield and Worcester retail prices on fruits, vegetables, and dairy products are also issued.

"Fresh Food Facts", a market news release prompted by request of the Middlesex County Consumers' Council, and written in popular style for consumers, was issued weekly. Short feature articles were written for the newspapers on canning, fish and milk.

Other Consumer Information

Occasional consumer radio talks were prepared for and delivered over WBZ, WNAC and other stations and regular bi-weekly consumer market broadcasts were started over WAAB.

Food supply and marketing talks were given to student classes, clubs, and cooking school groups, including Simmons School of Nursing, Massachusetts State College Home Economics Class, University Extension, Granges, and Boston American Cooking School.

Consumer marketing exhibits were prepared for various conferences, Massachusetts and New England Home Economics Associations, Consumer Councils, Family Information Center at Jordan Marsh Co., University Women's Association.

As occasion arose, extra effort has been made to relieve market conditions. For more satisfactory marketing of the highly perishable native strawberries, in addition to regular news releases, personal contacts were made with household editors of newspapers, home economic department of large retail concerns, and the women conducting consumer and homemaker radio periods with requests for special strawberry comments and recipes. Publicity for fish retailers and cooking schools, apple blossom festival, poultry shows, and fairs was obtained by similar means.

General information and specific price and supply data was provided welfare and consuming agencies preparing food budgets, hospital dieticians, and nutritionists and other government and private agencies.

Statistical Information

Demand for the mimeographed publication "Receipts and Sources of Boston's Food Supply" increases annually. It is a compilation and tabulation of available data on the volume and origin of food stuffs received at Boston. The supplementary short reviews relating to or explaining the trends in amount and sources of products and groups of products are based on study and analysis of past records and information obtained through interviews and observations during regular contact with the market. Requests for the publication represent varied interests including farmers, farm organizations, marketmen, retail organizations, homemakers, research workers, economists, transportation and food processing concerns, students, welfare agencies. "Receipts and Sources of Boston's Food Supply" is used repeatedly in connection with department activities, such as fairs, market plans, market investigations, talks, and general publicity.

Weekly summaries of Boston market receipts of native products and the average prices were prepared by the Farmer's Market Report.

Commercial Fisheries Promotional Work

Retail Schools.—Retail Schools were conducted to teach the retailer improved methods of marketing fish and fish products. They were held in 19 central cities throughout the state. Invitations to attend these schools were sent to all retailers who handled fish, either whole or part time. There was an attendance of over 2100 men. To the men who completed the full course, the Department awarded a certificate. A retailers' handbook and a list of the 76 commercial varieties of fish produced in Massachusetts were distributed. The retailers, wholesalers, and the Department feel that these schools were of great benefit to the fish industry, and over 700 certificates were issued.

Fish Cooking Schools.—Starting in November the Department sponsored a program of fish cooking demonstrations. These demonstrations have been held in eight of the leading cities and towns of our Commonwealth, to date. At the schools the women are shown the new and easy ways for preparing fish, told of the nutritive value of fish, and shown pictures of how fish are caught. At the eight schools there was an attendance of over 2,000 women. The Department has received many favorable comments from the retailers and different women's organizations. We have had requests from some women's clubs to have this demonstration put on for them. The department has also received requests from colleges and high schools for the same demonstration for their students. At the demonstration were distributed two fish cook books and a list of the varieties of fish sold in Massachusetts with their seasons and suggestions as to the better way of preparing them. The department is now arranging for a similar demonstration to be put on in all of the high schools teaching home economics.

Market News.—Daily market news on the retail offerings of fish were collected from a representative group of retail stores. These news reports were broadcast over stations WBZ, WHDH, and WEEL.

Radio Broadcasts.—The program of "Fish Stories" sponsored by this department was broadcast over the N. B. C. network through WBZ and WBZA each Wednesday from 11.00 to 11.15 a.m. Fish cook books were distributed to consumers through this program. Requests for more than 6,000 books have

been received from consumers during the past year. A similar program, sponsored by the Massachusetts Fisheries Association, was broadcast daily over WHDH from 10.50 to 11.00 a.m. The Department is cooperating with the Association in these programs.

Public Exhibits.—Fishing Exhibits were placed in the state buildings at Brockton and Springfield during the past year as part of our annual exhibits. At these exhibits we showed as many of the commercial fish as could be procured at the time. Another section was devoted to practically all kinds of processed fish, and another section to live fish. These exhibits proved very interesting and helpful, not only to the consumer, but the retailer.

REPORT OF THE DIVISION OF PLANT PEST CONTROL

The activities in the Division of Plant Pest Control change very little from year to year. A considerable time this past summer was spent in the nurseries inspecting the growing stock for injurious insects and plant diseases. Pests liable to occur have been kept well under control of the nurserymen and the inspectors have aided in locating infestations where they were not known to exist. In only one nursery were conditions found to be such that the division did not feel justified in issuing a certificate. In this case it has been necessary to maintain an inspector at the nursery, and each shipment of stock must be examined before being offered for sale. In general, however, the nurseries are in excellent condition. While most of our work is of a regulatory nature, we are continuously endeavoring to be of service in the giving of advice with regard to plant pest control problems with the purpose in mind to reduce to a minimum the damage to plants and plant products that are grown within the Commonwealth; either by the nurseryman, the fruit grower, the farmer, the timberland owner, or the modest backyard gardener.

In all pest control problems it is essential to be able to promptly detect and actually diagnose outbreaks of insects of plant diseases. This is necessary in order that proper and adequate control measures may be applied to prevent irreparable damage to the plants and plant products raised in the State. Delay in the proper recognition of the potential danger involved, often results in failure to control the pest before considerable damage has been done.

On December 1, seventeen inspectors were assigned to check up the violations of the European corn borer law. All violators reported were summoned into hearings where the law was explained and the benefits to be derived from its enforcement were pointed out. This work was in the nature of an educational campaign. Should, however, the same person be reported repeatedly, we would feel obliged to bring the violator into court.

The Dutch Elm Disease which is very prevalent in New York, New Jersey, and Connecticut, has not been found in Massachusetts. This disease was first discovered in this country in 1930 in Ohio, and in 1933 was found to be firmly established over an area extending 30 miles from New York City. It is thought to have been brought into this country on elm logs that were to be used for veneer. The disease is fatal to elms—the entire tree may die in one season or may live for some time. The first indication of this disease is the wilting of the leaves after which the foliage usually turns yellow or brown before falling.

A small bark beetle is responsible for the transmission of this disease, and as this beetle is present in Massachusetts, it is believed that should the disease be established here, it would spread rapidly. The nearest known infection to Massachusetts is at Old Lyme, Connecticut.

The United States Department of Agriculture has spent millions of dollars in an effort to locate and remove diseased trees, as well as weak and dead elms which are favored breeding places for the elm bark beetle.

A survey was carried on in Massachusetts this past summer under the supervision of Professor A. V. Osmun of the Massachusetts State College in cooperation with this department. Thousands of elm trees in nearly every city and town in the Commonwealth were inspected. As this inspection failed to disclose any trace of the disease, it is probably safe to state that the Dutch Elm Disease is not present in Massachusetts.

The appropriation for Apiary Inspection in 1935 again stood at \$2,000. Four Deputy Apiary Inspectors and one emergency Inspector were employed. As heretofore, these inspectors served respectively in Berkshire County, in the Connecticut Valley, Worcester County, and east of Worcester County in Middlesex County, in Norfolk, Plymouth, and Bristol Counties. The effort has been to maintain the position gained and to keep under observation those portions of the State in which bee diseases have been brought under control, as well as to extend the control work insofar as funds enabled.

As has occurred in the past several years, European foul brood has been encountered only rarely. It no longer can be considered a problem. Sacbrood, not considered an infectious or contagious disease and hence not quarantinable, has been regarded of minor importance, but invariably beekeepers have been informed how to cope with it.

American foulbrood which is much more persistent and which exacts by far the greatest toll from the beekeepers, has been combated in various parts of the State. An unexpected outbreak of this disease was found in the vicinity of Greenfield. Its extent was apparently determined and corrective measures have been applied. American foulbrood should be reduced in this locality next year. A similar outbreak discovered late in 1934, in the vicinity of Lunenburg, showed noticeable improvement upon reinspection in 1935, having been restricted to a single apiary. The control of this outbreak is practically completed. The disease condition in areas being brought under control, on the whole, is satisfactory, some districts having exhibited marked improvement. Other localities will require continued exact supervision.

The limitation of apiary inspection, due to insufficient funds, is attracting the attention of beekeepers, who are demanding a more extended and intensive program. This is felt to be an imperative need and should be taken care of as soon as additional funds may be procured. Funds are urgently needed to enable the inspection in areas now not possible to cover annually.

Fruit orchardists are quite as interested in honey bees for pollinating agents as heretofore. Although no accurate figures are available, it has appeared in the press that approximately a ton of bees in packages, (three and five pounds to the package) have been received from the South, in one or two counties (Middlesex and Worcester) in Massachusetts, in a single season. Discussion now ranges around the problem of whether colony bees, instead of package bees, are not preferable for use in orchards. Year by year, favor for colony bees is gaining, thereby offering greater opportunities to Massachusetts beekeepers who will become prepared to service bees for orchardists. Experimental evidence is now appearing which tends to show that there is greater efficiency for orchard use, of a given weight of bees in a normal colony, as compared with an equal weight of bees in a package.

The Division continued during 1935 to cooperate with the United States Department of Agriculture in connection with the control of the white pine blister rust disease.

The blister rust disease is caused by the growth of a parasitic fungus within the bark of the five-needled pines of which our common white pine is the eastern species. This parasitic fungus, aside from its growth on white pines, has what is known as an alternate stage; that is, a part of its life is spent in the tissues of the leaves of *Ribes* (currant and gooseberry plants). This means that if these alternate host plants can be eliminated from white pine growing sections, the spread of the disease on white pine trees can be prevented.

Work in the control of this disease, therefore, resolves itself into the task of finding and uprooting these alternate host plants. In accomplishing the eliminating of plants of the wild species of *Ribes* the practice is to organize field crews, whose function it is to systematically search white pine areas in which these disease-bearing bushes grow, and to destroy the bushes when found. The field crew unit consists of from five to seven laborers and a foreman. The laborers line up in formation similar to the line in a football team, the foreman following in the rear like the quarterback directing the work of the line, and being certain that no bushes escape the attention of the laborers. Such a crew starts at a given point usually on a road and proceeds across a tract of land

to some given boundary, possibly another road. As a crew progresses, one end man in the line drops small pieces of paper as he walks along, thus demarking the boundary of the area the crew examines. When the other boundary is reached the crew reverses itself and the paper trail that was dropped, now guides the crew on its return trip across the area.

A summary of the records regarding the control of the rust in Massachusetts shows that from 1922-1934 inclusive, measures to prevent further damage by this disease had been carried out on approximately 1,117,500 acres of land. On this vast acreage more than ten and one-half million wild Ribes were growing. The plants were uprooted. The removal of such a large number of host plants has had the effect of establishing what may be termed temporary control of the disease. During the progress of this so-called initial control work, however, it was clearly demonstrated that control areas become restocked with Ribes. It became more and more evident that it is humanly impossible in one working of an area to eradicate all the Ribes. Some of the small seedling bushes are overlooked. Seeds in the soil produce new plants and sprouts may develop from improperly removed plants. After several years of favorable growth conditions, these persisting bushes become a menace to the pines and should be destroyed. Therefore, initially protected areas need to be periodically re-examined.

It is with this problem of the imperative re-examination of control areas in Massachusetts that the division was particularly concerned during the 1935 field season. The State appropriation allotted to the division for this work was not restored by the 1935 legislature to an amount adequate to the present needs for the maintenance of the control of the disease.

During May and June the work was carried on with the balance in Federal funds remaining in the allotment from the appropriation of the National Industrial Recovery Administration for Public Works (PWA). Forty-four men were employed.

Late in July the situation with regard to available funds was relieved thru a special grant of funds by the Federal Works Progress Administration (WPA) to the Bureau of Entomology and Plant Quarantine of the United States Department of Agriculture for use in the employment of relief labor to combat the blister rust disease in the pine-growing regions in 28 States in the country. In accordance with the cooperative agreement between the United States Department of Agriculture and this division, an allotment from these emergency relief funds was made for work in Massachusetts, in collaboration with this division.

Funds for this activity were released on July 22 and field work in Massachusetts was started eight days later on July 30. During the field season, employment was given to approximately 257 men and very satisfactory control results were accomplished, in spite of the fact that most of the men available from relief rolls had never been engaged in this type of work heretofore. Costs, however, were considerably higher than heretofore.

The special field work that has been in progress since 1927 incident to the elimination of all European black current bushes in Massachusetts was continued during 1935. The drastic action banning the European Black Currant was deemed necessary, because investigations had conclusively demonstrated that this species of Ribes is most susceptible to the rust, and the continued presence of such plants constituted the most dangerous factor involved in the spread of the disease. This special work was completed in fourteen more cities and towns during 1935. During the year 2,924 black currant plants were found and destroyed. This work on the mainland of Massachusetts has now been completed except in the city of Worcester.

The division, in collaboration with the United States Department of Agriculture also cooperated with the Emergency Conservation Work (ECW) authorities in the conduct of control work on State lands owned by the Massachusetts Department of Conservation and the Metropolitan District Commission. This work was carried on by the use of the personnel of the Civilian Conservation Corps.

The combined State, local and Federal funds (including emergency relief

appropriations) available for blister rust control work in Massachusetts during 1935, made possible the examination of 112,331 acres of land from which 1,382,212 wild and 17,261 cultivated Ribes were eliminated. Part time employment was given to 382 men, in addition to 152 men in the Civilian Conservation Corps.

The Director wishes at this time to express his appreciation to Mr. C. C. Perry for his cooperation and assistance in the work of the division. Mr. Perry has had full charge of the white pine blister rust work and the success of this project is due entirely to his untiring efforts.

REPORT OF THE DIVISION OF RECLAMATION, SOIL SURVEY AND FAIRS

General optimism prevailed among the officers of the majority of our Massachusetts fairs this year. While there were a few changes in the number of fairs held, the total remained practically the same as in previous years. In several cases it was apparent that more careful attention in the matter of management had been considered, more study in regard to the expenditure of money and more thought to entertainment features and the arrangement of exhibits.

The weather on the whole during the entire fair season was fairly satisfactory, there being only two or three fairs adversely affected. The attendance was somewhat in excess of the previous year, agricultural exhibits, considerably larger and more persons participating in premium payments. While four of our major fairs did not have their usual exhibits this year it is expected that part, if not all of them, will have fairs in 1936. There were, however, five more community fairs and fourteen more grange fairs added to our list of those in which the Department cooperates.

The Department of Agriculture cooperated with fourteen major fairs, thirty-three community fairs, sixty-four grange organizations and seven poultry and rabbit associations holding fairs and exhibits during the year. This is a total of 118 societies, associations or organizations receiving from the Commonwealth an allotment of State agricultural prize money for the purpose of paying premiums directly to their exhibitors. In addition to this prize money allotment nearly three hundred special trophies, medals, ribbons or certificates were also distributed either directly or through some agricultural organization.

Nearly two hundred thousand persons attended the agricultural fairs in Massachusetts this year. This does not include attendance at the Eastern States Exposition, Brockton Fair or any other fairs in which the Department made no prize money allotment. In fact the report of the Department covers only such fairs where the Department cooperated either financially or by means of an exhibit. It is of interest to note that in spite of four less major fairs the remaining fourteen had greater attendance and more exhibits than in the previous year. They likewise received more revenue and spent more money. Only one fair in the group took advantage of the new law providing for legalized betting. Eleven of the fourteen major fairs made a profit and three lost money. This is a better financial showing than was reported for the previous year.

That our fairs are meeting with greater competition than formerly is apparent. The legalized race tracks in this and neighboring states are undoubtedly a contributing factor. Our fair officials are also facing the real problem of reducing expenditures and at the same time not detracting from the features of their fair which have popular appeal.

That the small financial contribution by the Commonwealth, in the form of agricultural prize money, which is paid directly to the exhibitors, is an anchor to the windward for every fair in the Commonwealth is more and more apparent. In fact it is very doubtful if more than two or three of our remaining major fairs could continue without this assistance. The Commonwealth is now paying nearly two thirds of all the agricultural premiums. This year the amount was \$15,099.05 as paid by the Commonwealth while the fourteen major fairs paid \$8,243.79. When we see that net profits of eleven of these fairs ran

from \$12.53 to \$1,409.39, with an average of all of but \$318.79 and the Commonwealth's contribution ran from \$500 to \$1,925 or an average of \$1,061.27, it is apparent that without the State's assistance the fairs would find their problems far more serious.

STATE EXHIBITS AND SPECIAL EXHIBITIONS

Carrying out the policy of years past State exhibits at both Springfield and Brockton were entirely new in their setting and purpose. At Brockton the following State Departments cooperated with us: Health, Public Welfare and Correction. At Springfield the Department of Conservation, with an entirely new set-up, occupied the two wings of the State Building.

This Department, with the State College cooperating, sponsored an Onion and Potato Exhibit at the Eastern States Exposition. At the 17th annual Union Agricultural Meeting in Worcester it also planned the arrangements, installed exhibits and provided premiums. Officials of the Department have met with the officers and members of various agricultural societies during the year, assisting their premium list committees and other departments of their fairs. They have also addressed numerous fair groups, granges, conventions and the like as well as prepared charts, radio talks and news items of a general character. The Monthly Fairs Letter has been edited and sent to fair executives and others regularly. Work of the Department has not been confined wholly to agricultural fairs but has lent assistance to horticultural societies, flower shows, rabbit shows, fruit shows and special exhibits.

WORK WITH THE YOUNG PEOPLE

Without doubt one of the most important phases of the work of the Department has been with the young people's organizations. The State Camp at Amherst, formerly called Camp Gilbert, is made possible by the Department. This camp is organized primarily as an award of merit for hundreds of young people who have been faithful and industrious in their local agricultural club activities. The Department also provides awards of one kind or another for accomplishments of vocational high school and county school agricultural students. During the year nine local young people's exhibits have received financial aid for their premium awards and in each case it has been most gratifying to note the interest shown and the fine articles of quality that have been exhibited by our future citizens. In tabulating the number of exhibits at our agricultural fairs it is interesting to note that practically fifty per cent of all exhibits are from boys and girls of our Commonwealth.

AGRICULTURAL PRIZE MONEY PAYMENTS (14 Agricultural Societies)

Franklin County Agricultural Society, \$1,925; Housatonic Agricultural Society, \$1,734.50; Hampshire, Franklin and Hampden Agricultural Society, \$1,825; Essex Agricultural Society, \$1,925.05; Hillside Agricultural Society, \$1,025; Highland Agricultural Society, \$1,025; Marshfield Agricultural and Horticultural Society, \$1,020; Sturbridge Agricultural Association, \$825; Acton Agricultural Association, \$675.75; Union Agricultural and Horticultural Society, \$893.75; Plymouth County Agricultural Society, \$650; Martha's Vineyard Agricultural Society, \$500; Bristol County Young Farmers Fair, \$500; Littleville Community Fair, \$600; total, \$15,099.05.

(33 Community Fairs and Exhibitions)

Cape Cod Horticultural Society, \$199.95; Groton Junior Fair, \$152.25; Natick Community Fair, \$198.90; Connecticut Valley Onion and Potato Show, \$188; Heath Agricultural Society, \$173; Sterling Farmers' Club, \$150; Union Meeting Fruit Show, \$162.50; Hampden County Improvement League, \$115; East Bridgewater Community Fair, \$100; Hingham Agricultural and Horticultural Society, \$100; Massachusetts Horticultural Society Junior Exhibit, \$100; Monson Community Fair, \$100; South Amherst Fruit Show, \$100; Upton Farmers' Club, \$100; Ashby Community Fair, \$74.30; Granville Community Fair, \$75; Orange Boys' and Girls' Club, \$75; Southwick Community Fair, \$75; White Oaks Community Fair, \$60; Agawam Community Fair, \$50; Bolton Community Fair, \$50; Chester Junior Fair, \$49.90; East Blackstone Commun-

ity Fair, \$44; Norfolk County Junior Fair, \$50; Future Farmers of America, \$50; Rehoboth Community Fair, \$46.25; United Shoe Agricultural Fair, \$50; Westfield Junior Fair, \$50; Worcester County Junior Fair, \$47; Dalton Community Fair, \$25.25; Lawrence Horticultural Show, \$25; Montgomery Junior Fair, \$15; Massachusetts State College Fall Horticultural Show, \$10; total, \$2,861.30.

(64 Grange Fairs)

Abington, \$15; Acushnet, \$15; Ashburnham, \$11; Assonet, \$15; Auburn, \$13.50; Bedford, \$25; Boylston, \$14; Brimfield, \$15; Chatham, \$14.90; Chelmsford, \$15; Cheshire, \$25; Cochituate, \$15, Dedham, \$20; Dunstable, \$30; Eastham, \$15; Fairhaven, \$20; Granby, \$15; Hilltop, \$15; Holden, \$11.50; Leicester, \$8; Lexington, \$15; Ludlow, \$21; Lunenburg, \$14.60; Mansfield, \$23.25; Merrimac, \$20; Milford, \$15; Monomoy, \$15; Nauset, \$15; Nemasket, \$10.50; New Salem, \$13; Norfolk, \$15; Norfolk Pomona, \$15; Northboro, \$9; North Adams, \$15; North Seekonk, \$15; Palmer, \$15; Oak Hill, \$19.50; Pittsfield, \$15; Plainville, \$13.50; Ponkapoag, \$10; Randolph, \$29.50; Riverdale, \$15; Richmond, \$20; Rochester, \$15; Rockland, \$5.15; Rutland, \$15; Swansea, \$15; South Middleborough, \$12.75; Stockbridge, \$19; Seekonk, \$14.25; Thrifty, \$15; Townsend, \$15; Tyngsborough, \$15; Waltham, \$12.25; Wilbraham, \$20; Warren, \$35; Weymouth, \$13.50; Williamstown, \$15; Westford, \$10.50; Wilmington, \$14.45; West Boylston, \$13.75; West Stockbridge, \$15; West Newbury, \$15; Wendell, \$13; total, \$1,015.35.

(7 Poultry and Rabbit Shows)

Boston Poultry Show, \$158; Essex County Rabbit Association, \$86; Metropolitan Reading Poultry Association, \$149; Holyoke Poultry and Rabbit Association, \$175; Essex County Poultry Association, \$42.50; New England Poultry Association, \$251.50; Merrimac Valley Rabbit Association, \$51; total, \$913.

SUMMARY OF STATE AGRICULTURAL PRIZE MONEY PAYMENTS

Agricultural and Horticultural Societies	\$15,099.05
Community Fairs and Exhibitions	2,861.30
Grange Fairs	1,015.35
Poultry and Rabbit Associations	913.00
Young people's activities	1,999.66
Badges, medals, cups, ribbons, trophies	1,160.79
Special agricultural exhibits	6,840.87
Miscellaneous payments	560.76
	<hr/>
	\$30,450.78

REPORT OF THE STATE RECLAMATION BOARD

The work of the State Reclamation Board in the way of supervision of mosquito control ditching and maintenance work has followed the regular procedure during the fiscal year 1935. There were no appropriations on the part of the State for emergency relief work as in 1931, 1932 and 1933, but the projects supported by local funds carried on, and the maintenance of the three thousand miles of mosquito ditching already in operation proved a task of no small magnitude. Both maintenance and construction work were carried on in Barnstable County under the Cape Cod Mosquito Control Project, as well as the usual maintenance work at Nantucket, Natick, and Belmont. In addition to the above, in the fifty-one cities and towns which are annually assessed for maintenance work on ditches constructed under state appropriation, operations in the way of cleaning and improving were conducted in all but four. During the fiscal year 1935 there was expended in these towns for maintenance work the sum of \$24,553.28.

The annual budget for the expense of the Reclamation Board was \$10,000 which was increased by \$3,000 in the supplementary budget, to assist the Board in the sponsorship of proposed W. P. A. projects during the late summer and autumn. These projects did not materialize as planned, although much of the work was taken care of by local W. P. A. projects with the endorsement and periodic supervision of this Board. In January, 1935, at which time exten-

sive E. R. A. operations were in process, the State E. R. A. Administrator made a decision that no local plans for mosquito control drainage for towns and cities would be approved by his office unless such projects were endorsed by the State Reclamation Board. After that date, all applications for projects were submitted to the Board for examination and possible endorsement. During the period from January 10, 1935, until W. P. A. projects were actually in operation, the Board was called upon to examine some 364 applications, representing a cost of \$2,070,337, and covering the employment of thousands of relief workers. Again, when the W. P. A. started in July, 1935, all applications were endorsed, and, subject to the approval by state and national W. P. A. authorities, work was provided for a total of 36,745 man-months, or an average of 6,000 men for a period of six months.

Responsive to the requests from the State W. P. A. Administrator, in many cases where the plan of work was not plainly indicated or where the location of the work was in an area not previously surveyed for mosquito breeding, the Reclamation Board found it necessary to send an engineer or field investigator to the town or city concerned before a project could be considered for enforcement. This did entail much additional labor on the part of representatives of the Board, and indications are that the Board will be put to considerable additional expense in the year 1936 because of the inspection of these projects and the checking of the work, which both the W. P. A. and the local authorities have requested.

FINANCIAL STATEMENT

Appended are statements showing expenditures on the part of projects other than state projects for the fiscal year 1935, and the assessments for maintenance of state projects during the same period.

EXPENDITURES

Mosquito Control — Other Than State Projects

<i>Project</i>	<i>Previous to 1935</i>	<i>Fiscal Year 1935</i>	<i>Total</i>
Cape Cod	\$255,209.15	\$33,666.67	\$288,875.82
Nantucket	31,431.76	790.93	32,222.69
Belmont-Cambridge-Watertown	5,190.63	567.41	5,758.04
Natick	588.54	33.50	622.04
Total	\$292,420.08	\$35,058.51	\$327,478.59

Maintenance of State Projects 1935

<i>Project</i>	<i>Total Assessment for 1935</i>
Bristol-So. Plymouth	\$5,610.00
South Shore	14,050.00
North Shore	6,450.00
Nantucket State	700.00
Martha's Vineyard	1,050.00
Wenham	50.00
Total	\$27,910.00

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The Commonwealth of Massachusetts

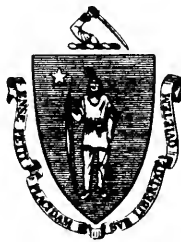
Annual Report

OF THE

Commissioner of Agriculture

FOR THE

Year Ending November 30, 1936



The Commonwealth of Massachusetts

DEPARTMENT OF AGRICULTURE

To the Honorable Senate and House of Representatives:

In compliance with the provisions of Chapter 128 of the General Laws, I am herewith making my annual report for the year ending November 30, 1936 for the Department of Agriculture.

Respectfully submitted,

HOWARD HAINES MURPHY, *Commissioner*

PERSONNEL OF THE DEPARTMENT

COMMISSIONER OF AGRICULTURE—HOWARD HAINES MURPHY, Osterville
Executive Secretary to the Commissioner—EDWARD L. KING

ADVISORY BOARD APPOINTED BY THE GOVERNOR AND COUNCIL

WILLIAM CASEY, Spencer, term expires November 30, 1936

GEORGE E. TAYLOR, Shelburne, term expires November 30, 1936

JAMES O'BRIEN, Lee, term expires November 30, 1937

JOHN T. GOGGIN, Seekonk, term expires November 30, 1937

JOHN BURSLEY, West Barnstable, term expires November 30, 1938

LOUIS A. RIORDAN, North Abington, term expires November 30, 1938

DIVISIONS AND ORGANIZATIONS

LIVESTOCK DISEASE CONTROL—*Director*, CHARLES F. RIORDAN, Sharon

DAIRYING AND ANIMAL HUSBANDRY—*Director*, Mar. 11-July 6, WARREN SWETT, Canton

Director, Aug. 12-Dec. 20, EDWARD L. SHATTUCK, Andover

MARKETS—*Director*, Jan. 1-Nov. 12, FURMER H. GREELEY, Salisbury

Director, Dec. 21-Dec. 30, WILLIAM F. MADDEN, Boston

RECLAMATION, SOIL SURVEY AND FAIRS—*Director*, Jan. 1-Aug. 22, L. B. BOSTON, Hopkinton

Director, Aug. 24-Dec. 30, GEO. J. MORAN, Somerville

Assistant Director, A. W. LOMBARD, Arlington

AGRICULTURIST—DANIEL J. CURRAN, Marlborough

STATE RECLAMATION BOARD

Chairman, EDWARD WRIGHT, Dedham

DANIEL J. CURRAN, Marlborough, Jan. 1-Aug. 22, L. B. BOSTON, Hopkinton

Aug. 24-Dec. 30, GEO. J. MORAN, Somerville

Secretary, GEORGE R. STRATTON, Hopkinton

REPORT OF THE COMMISSIONER

During the year 1936 the farmers of Massachusetts faced the many problems connected with agriculture with courage and initiative, and considerable progress was made in obtaining higher price levels for Massachusetts farm products.

For the past several years hundreds of our industrial workers have engaged in part-time farming to supplement their income, and at the present time more and more of our factory workers are moving into the country, within commuting distance of the industrial centers, to develop a small farm and enjoy the healthful environment of rural surroundings. There is an obligation on the part of the state agencies directing the progress of agriculture to assist the part-time farmers in the development of their gardens and other agricultural projects. It will always be our policy to promote a bigger and better agriculture in Massachusetts and to encourage those who have definitely in mind the production of quality farm products. We feel that agricultural industries should go hand in hand with the march of progress and when industry slackens it might well appear that agriculture should assume a greater burden. When industry further develops we can reasonably expect a greater consumption of local farm

products from our friends and neighbors in the large industrial centers. It may be necessary in a permanent adjustment of our industrial problems in Massachusetts to develop a plan that involves a permanent part-time program, combined with part time in the industries. We may in the future find that a permanent plan combining agriculture with some other phase of industrial life may be a partial solution of our economic problems. Those that have engaged in agricultural pursuits have first hand knowledge of the meaning of working and toiling. The value of the harvest has always been in direct ratio to the care, time and attention given to the crop.

A part time program for agriculture and industry that would involve the application of the same kind of loyalty and dependability that has characterized our farmers for generations would indeed be a worthwhile achievement. The future may have many new adjustments in store for those of us who are waiting anxiously and patiently, but none will probably have a more fundamental significance than a closer relationship between agriculture and other branches of our great industrial life.

LEGISLATION

We have been interested for a number of years in assisting our fruit growers in marketing their apples. Massachusetts produces high quality apples, and the markets for this fruit should be expanded both in this country and abroad. The following legislative resolve was submitted to the General Court in 1936 and was approved May 22, 1936:

"Resolved, That the department of agriculture is hereby authorized and directed to investigate and study the circumstances surrounding the growing and marketing, by farmers and others within the commonwealth, of Massachusetts apples, with a view to increasing their sale and consumption. Said department shall report to the general court its findings, and its recommendations, if any, together with drafts of legislation necessary to carry said recommendations into effect, by filing the same with the clerk of the senate on or before the first Wednesday of December in the current year."

Upon final passage of this legislation it was thought advisable by the department to use the money appropriated in an essay contest with the subject of the essay "Why I Prefer Massachusetts Apples." All residents of Massachusetts, except employes of the Department of Agriculture, Massachusetts State College and the County Extension Service and members of their families, were eligible to enter this contest. Essays were judged solely on the reason or reasons entered and a statement indicating where the contestants purchased apples for home use was submitted to the judges. The judges in this contest were the Commissioner of Agriculture Howard Haines Murphy, Commissioner of Education James G. Reardon, Senator Charles T. Daly, President of Medford Chamber of Commerce, Joseph P. Sullivan of Ayer, George A. Drew of Westford and E. J. Rowell, Secretary. The essays were submitted to the Department of Agriculture not later than twelve noon on November 9, 1936 and were given careful consideration by the judges. As a result of the apple essay contest the following awards were made on November 30: First prize, \$200, Mrs. Lillian Evensen of East Templeton; second prize, \$100, Mr. Ritchie L. Stevens of Needham Heights; third prize, \$50, Mrs. Marion Hart Davis of Springfield. Ten additional prizes of \$5 each were won by George Kline, Needham; Paul St. Linger, Beverly; Wm. F. McElroy, Malden; John E. Thayer, Cambridge; Robert G. Gaco, West Newton; Frank Coss, Framingham; Teddy Nolan, Littleton Common; Christopher H. Evensen, East Templeton; Lorimer H. Brown, Northampton; and George E. Gifford, Middleton.

CO-OPERATIVE LAW

Our cooperative law in Massachusetts, insofar as our agricultural co-operatives are concerned, is based upon membership agreements. The members must be farmers who are producing farm products for the use of the co-operative, and when we compare our co-operative law with the laws of other states

we find that there are restrictions which tend to limit the necessary powers and authority of Massachusetts co-operatives. In many cases groups of Massachusetts farmers have found it advisable to organize under other State laws that allowed greater freedom of operation and management. It might well appear, insofar as our progress in agriculture is concerned that greater co-operative effort must be evidenced before we can compete successfully with the well organized sections of other states that are competing on our Massachusetts markets. With this thought in mind the following legislation was presented to the General Court and received favorable action by that body, and was signed by the Governor on May 25, 1936:

"Resolved, That a special commission, to consist of the attorney general, the commissioner of corporations and taxation, and the commissioner of agriculture, is hereby established to investigate the subject matter of current house documents numbered thirteen hundred and fifty, thirteen hundred and fifty-one and fourteen hundred and one, relative to the incorporation and conduct of agricultural and other co-operative corporations. Any member of the commission, if he so elects, may designate an officer or employee in his department to serve in his place on said commission. The commission shall report to the general court the results of its investigation, and its recommendations, if any, together with drafts of legislation necessary to carry said recommendations into effect, by filing the same with the clerk of the house of representatives on or before the first Wednesday of December in the current year."

A good cooperative law with more elastic provisions than exist at the present time would be most helpful to our farmers who realize that the accomplishments of one man in our complicated life today are very meagre, and that a bigger agriculture can be achieved only by perfecting strong organizations of groups of farmers.

RECLAIMING FLOODED LANDS

One of the most outstanding pieces of work performed by the Department in 1936 was in connection with the reclaiming of flood-damaged farm lands in the Connecticut and Merrimac River Valleys.

In March, 1936 as a result of the worst flood which Massachusetts has ever suffered within the recollection of the present day generation, the farm lands in the towns bordering on the Connecticut and Merrimac Rivers were not only submerged for many days but were in some instances gullied out and practically ruined, and in other places covered with a deposit of either silt or sand to a depth ranging from a few inches to several feet. The owners of these farm lands were practically helpless. They had neither the money nor the equipment with which to repair the damage and to put the land into condition for planting and raising crops. The public health problem was also involved and immediate attention was necessary. The entire problem was of vital importance to the continuance of agricultural enterprise and the most fertile lands in this commonwealth

Surveys had been made by various agencies, both state and federal, but no definite results had been obtained. The Connecticut Valley was at a standstill and at a time when crops should be planted and farming operations in full swing. It was at this time that the Department of Agriculture entered the picture with the suggestion that special deep bottom plows could be procured and that the state do the plowing for these farmers whose land was covered with deposits of either silt or sand to a depth of from five to fifteen inches. The legislature made an emergency flood relief appropriation and a portion of this money was made available to cover the expense of operating. The Department of Public Works had tractors available but where were the plows coming from? This matter was finally taken care of by the American Red Cross and seventeen plows were purchased and rushed here from the middle west and attached to the caterpillar tractors owned by the Department of Public Works and the work of plowing started under the supervision of the Massachusetts Department of Agriculture.

Over 2,500 acres of land were plowed and put into condition for planting. The deposit on land plowed varied from five to six inches deep on some farms to as much as ten to twelve inches on others. The land was soft in most cases and plowing difficult but with these unfavorable conditions to overcome the work progressed rapidly and soon large tracts were ready to be put into condition for planting.

Over 400 farms received the benefit of this work and the owners were thereby enabled to plant their crops as usual. Some of the land which had been gullied out and thus made unfit for use was leveled, the holes filled with available material and put in shape for cultivation. This was made possible through the use of scoops and bulldozers.

The farmers proceeded to plant and fertilize practically as in previous years and when the crop was finally harvested the yields per acre were in excess of the previous year and in the case of potatoes, above the five year average. The pounds per acre of tobacco were also above the previous year.

REPORT OF THE DIVISION OF DAIRYING AND ANIMAL HUSBANDRY

The Dairy Division carried on by rendering the usual service to producer and dealer in the adjusting of complaints of improper tests of milk delivered to the handlers. These cases, though in the hundreds, were all adjusted without resorting to court action.

The inspectors of barns and dairies were used for a period covering many weeks, to correlate information compiled by the animal inspectors of the Division of Livestock Disease Control, with information secured by the former group. In view of the time spent in the study of these records, the full quota of dairy farm inspections was not made, and during the late fall the dairy inspectors visited Maine, New Hampshire and Vermont and spent considerable time at the milk plants inspecting the milk that arrived at these receiving points.

Following this period of correlating materials, a brief but thorough job of inspection was carried out on dairy farms within the Commonwealth. It has always been the policy of the Department to insist upon quality milk production, and it is expected that our Massachusetts farmers will comply fully with the requirements of the Milk Regulation Board and produce as much milk as possible for our Massachusetts markets. It should be the purpose of our Massachusetts dairy farmers to supply as much quality milk as the dairy farms will normally yield, and the thoughtful milk dealer will always be willing and anxious to purchase quality milk from our local farmers for our Massachusetts consumers.

The animal husbandry work of the division covered a very extensive field; assisting Sheep, Goats, Swine, Horses, Dairy Cattle, Beef Cattle, Poultry and Rabbit Growers.

Sheep Demonstrations were run several times during the year; speakers outlined methods found to be sound for good flock management. Practical demonstrations of dipping, docking and castrating were used at the time of these meetings. The growers in attendance indicated deep interest in the talks given and the practical exhibitions shown. The increased attendance of growers from meeting to meeting, as well as the questions they propounded of a sensible nature, indicated without question, the good such practical group contacts can do for growers.

More beef animals were seen in use on our cheaper land, farms where dairying had outworn its ability to yield a profit, by reason of remote location, poor buildings, or inability to secure proper farm help at a wage which the dairy could carry. Beef growing has shown that poorer buildings may be used while very little supplementary labor is needed; thus utilizing the roughages grown, buildings as is, and with enough home grown corn, a little purchased concentrate feed in the form of molasses, cottonseed and linseed meal, a prime finished animal may be produced here, close to good markets, on our sub-marginal farms, which should yield a profit to the grower if produced in conjunction with some other lines, such as small fruits, poultry, sheep, or the like.

Sheep offer all the advantages of the beef animal; use less purchased feeds; are in equal or greater demand, and yield a three-fold result, namely: Meat as lamb, wool, soil improvement, by clearing up brush, weeds or undesirable plants, while balancing their roughage requirements on pasture; at the same time contributing valuable fertility for soil improvement.

POULTRY WORK

The R.O.P. work for the year was carried on with very good results. There were 19 poultry plants under the supervision of the Department, and unannounced visits were made to these plants, taking over the trapnesting work for the day, and checking the records for accuracy.

During the year articles were prepared and radio talks given in an effort to explain and publicise R.O.P. Work in this State. Also, a number of State, Sectional and National meetings were attended in the interest of our R.O.P. program.

The Annual summary of our R.O.P. work was prepared and distributed to poultrymen in this State, and to interested persons throughout the country.

Following is a brief summary of the results obtained by our R.O.P. Breeders for the 1935-36 Season:

SUMMARY

Total pullets kept by R.O.P. Breeders	37,537
Number birds entered by R.O.P. Breeders	7,239
Number birds passing R.O.P. requirements	3,064
Average production all birds passing R.O.P. requirements	241.13
Average egg weight all birds passing R.O.P. requirements	25.48
Average body weight all birds passing R.O.P. requirements	6.07

Poultry Certification.—Under our Massachusetts Certified Pullorum Clean Grade, there were 35,565 birds approved and banded. This was approximately 4000 more than the previous year. In addition to the inspection of the birds, all other provisions of the work were carried out.

Pullorum Clean Grade.—The Department supervised 134 flocks, which qualified under this Grade. All the flocks qualifying passed at least two annual 100% pullorum free tests.

Pullorum Passed Grade.—The Department supervised 44 flocks which qualified for this Grade, which requires one annual 100% free pullorum disease test.

Poultry Transportation Law.—There were 575 poultry transportation licenses issued during the year, with considerable time and effort spent in enforcing the provision of the law.

Poultry Tattooing.—This program was continued as in the past with considerable time spent in promoting the tattooing of birds in Massachusetts.

Miscellaneous Poultry Work.—During the course of the year, all of the poultry correspondence and requests for poultry information pertaining to the Division's work was handled.

We cooperated with the U. S. Department of Agriculture in the operation of the National Uniform Plan, acted as an officer in various poultry organizations for the purpose of promoting the State's Poultry Industry, and assisted at Fairs and Exhibitions, in promoting the work of the Department.

Milk Goats have received a considerable amount of attention this year, through the six local sectional associations and their State Breeders Council. They offer quite some possibilities to urban and rural people as a part time enterprise. Their product has great possibilities for certain deficiency troubles, skin disorders and digestive disturbances.

Horse breeders and fanciers cover the field from light pleasure types to fine drafters; there being considerable interest shown with some new people inquiring about the potential possibilities, and established breeders showing some tendency toward expansion.

Hog Breeders remain about constant, with some help being asked to improve litter sizes by means of better housing, improved stock, etc.

Pet stock breeders fluctuate from year to year, and many come to the Division for help.

Miscellaneous demands on the Division called for attendance at a great many meetings, by the men in charge of Poultry, Animal Husbandry and Inspection, also for numerous conferences, much correspondence, etc., through the office.

PROTECTING THE FARMER'S MILK CHECK

It has been the policy of the Department during the past year to insist upon a type of collateral that will fully satisfy the intent of the milk dealers licensing and bonding law, and guaranty to the farmer suitable protection for one payment period for milk delivered to the milk dealer. When this bonding law first became law it was necessary for the Department to accept many chattel mortgages in lieu of a better type of security, and during the past year it has been our purpose to eliminate many of the troublesome chattel mortgages that offered very little protection to the farmer in the event that the milk dealer neglected to pay for milk delivered. We have increased the number of bank books and surety bonds and are in a position to offer to the farmer a more liquid type of collateral as protection to the milk producer. It was necessary during the year to employ assistants to take care of additional work that had arisen under the provisions of this law. Many problems relating to the small milk dealer who was operating with very limited capital and had furnished inadequate collateral occupied a large part of the valuable time of our bonding investigators. We feel, however, that most of these problems have been taken care of, and many of these questionable milk dealers, who intended to purchase milk from the producers as long as possible and then drift into some other business, have been forced to find another type of employment. There are some provisions of the Milk Dealers Bonding Law that need qualification at this time, and it is our purpose during the next session of the Legislature to seek amendments that will tend to provide more adequate protection for the dairy farmer.

REPORT OF THE DIVISION OF MARKETS

MARKET NEWS

Daily reports on the farmers produce markets were issued through the year from Boston and Springfield, and for a portion of the year from Worcester. During the summer and fall months, a reporter was also stationed at the Boston Regional Produce Market in West Cambridge.

SPECIAL APPLE MARKET REPORT

The Special Apple Market News Service, now in its twelfth year of operation, has been maintained regularly throughout nine months of the apple marketing season. An increasingly important part of this service is the attention being given to cold storage reports, now covering not only New England points, but also some areas outside New England. It is necessary to cover these points because of the competitive effect that they have on local sales.

APPLE INSPECTION

Regular inspection of apples has been carried on at all principal market centers. In addition to this, the inspectors of this division have been licensed by the Federal government under a Federal-State cooperative agreement, which authorizes them to certify fruit for export shipment.

Inspections at Welfare Centers—Because of heavy supplies of apples on hand in the late winter months, the Federal Surplus Commodities Corporation inaugurated a buying program in late March for purchase of surplus apples. This division cooperated in the program by furnishing inspection service at 29 welfare centers in this state. These inspectors operated under the Federal-State cooperative agreement.

APPLE ADVERTISING

As an aid to fruit growers in the movement of burdensome supplies of apples resulting from the 1935 crop, this division has carried on an advertising campaign, featured by displays in railroad stations and other public places. A highlight of this advertising program was an "Apple Jamboree" at the North Station. A booth was set up in the main concourse of the station, featuring a large revolving apple, three feet in diameter. The apple queen of the preceding season's festival was in attendance daily and at specified hours, when she and her attendants distributed apples to the public. Gratifying results in the way of increased sales were reported by dealers and growers following this advertising campaign.

STANDARDIZATION AND GRADING

Fresh Egg Law.—The department continued to carry out its program of enforcement in connection with this law, which was passed by the legislature the later part of 1935. Approximately 7,500 inspections were made, mainly in retail stores. A few inspections were made at the farms where fresh eggs were sold, and a few were made at warehouses supplying retail stores. The percentage of violations for the year amounted to about 10%. Many hearings were held following violations, at which the violator was given an opportunity to explain why he should not be taken into court. The department continued its policy of educating retailers of eggs by trying to determine the reason for the violation. As a result of this policy, much improvement was noted in the method of handling of eggs. The ultimate goal, of course, was more consumer satisfaction. Many conferences were also held with producers and dealers, at which various problems relating to marketing of eggs were discussed. In furtherance of this educational program, the department was invited to put on demonstrations of candling and grading before producer groups. Meetings of this type were held practically all over the state. Likewise many exhibits were set up at fairs, such as Brockton Fair, Eastern States Exposition, Topsfield Fair, and a few others. The department was also called upon to act as judge at egg shows held in Athol, Greenfield, Middlefield, and Boston. Many radio talks were given for the benefit of the consumer, advising what the law stands for and what the consumer should expect when purchasing fresh eggs.

The Massachusetts Federation of Poultry Associations sponsored an egg sizing bill. Previous to drawing up this bill many meetings were held throughout the state at which the department acted in an advisory capacity.

FARM PRODUCTS GRADING LAW

Work in connection with this law was continued by making inspections at the farms where the official state quality farm products label was being used. Inspectors had an opportunity to look over the equipment which was used, as well as the product itself. Suggestions were made, whenever necessary for improvement. Many inspections were also made at the Brockton Cooperative Egg Auction Asso. and the Springfield Auction. Inspections such as these were most economical, since these associations are the central distribution point for hundreds of producers. Conferences were also held with these organizations in order to bring about the desired improvements.

ADVERTISING AND PROMOTIONAL WORK

One of the functions of the department is to help promote the agricultural industry of Massachusetts. It has an opportunity of assisting producers of agricultural products. For example, at fairs in the state the department cooperates with producers in displaying the finest of their products, in order to acquaint the consuming public with the fine quality products that are grown in the commonwealth. This type of promotional work is also done in the form of radio talks. Assistance has also been given to some farmer organizations

working on an advertising program. The egg producers, for example, had an egg consumption committee which prepared a program for selling Massachusetts fresh eggs.

TURKEY MARKETING

The Mass. Turkey Growers Asso. was reorganized this year, due to the fact that the growth of the industry had reached a point where an orderly system of marketing was necessary. It is estimated that 200,000 turkeys were produced in 1938, at an approximate value of \$1,000,000. This organization called upon the department to supervise the standard of quality which it adopted. In other words, the Mass. Native Fancy Grade, which is the official state grade, was used. Inspections, so far as could be, were made at the farm. The greatest number of birds, however, were inspected in the warehouses of the larger chains. Turkey grading schools were held in several places in the state for the benefit of the producers. At these schools turkeys were brought in by the producers and graded according to the official state standard. Exhibits of these high quality birds were also displayed at a few food shows. Other assistance, such as making designs for posters, was offered to this organization of Massachusetts turkey growers.

ROADSIDE STAND INSPECTION

The department continued to inspect roadside stands displaying the Bay State Farm products shield, which is an official identification of farmers roadside stands, complying with the requirements of the department of agriculture. These stands were inspected for cleanliness, quality of products, parking space, types of containers used, method of display. Whenever the department could offer assistance in other ways, such as giving publicity to the roadside stands by means of radio talks, or exhibiting at consumers meetings, it was done. Speakers were also furnished for the annual meeting of the Massachusetts Farmers Roadside Stand Association, and considerable work was also done in arranging for the program itself. Colored lantern slides were shown of various stands in the organization and shown at a meeting of the Boston Market Gardeners Asso., as well as at other meetings. The points of greatest value illustrated in these slides were stressed.

ASPARAGUS INSPECTION

Several inspections were made of asparagus identified with the official state label. These inspections were made mainly in the Faneuil Hall Market district. This organization has since gone out of existence, due to competition from other states.

STATISTICS

The amounts and sources of food stuffs received at Boston as recorded by various agencies were tabulated for office reference and in preparation for later publication. As demanded, other crop, market and price statistical information was assembled.

RETAIL MARKET NEWS

The Boston Retail Report was issued regularly each week with the customary lead paragraph directing attention to seasonal products in plentiful supply. Weekly retail price data was also collected in Worcester and Springfield.

Fresh Food Facts presented consumer market information in popular style each week, particularly for publication in town weekly papers. Supplementary news articles were written for newspapers and magazines.

OTHER CONSUMER SERVICE

Marketing talks were broadcast weekly over station WAAB and occasional addresses given over other stations, WBZ, WEEL, WNAC. The division worked closely with the consumer councils sponsored by the federal government.

The seasonal marketing chart was revised for more extensive distribution. Marketing trips were conducted for student groups and talks given to other groups, as Grange, WPA assemblies, university extension classes, nurses, home economics students, lunch-room managers. The consumer program of the first and second Poultry Industries Expositions were cooperated with and consumer talks given.

Exhibits at meetings of such organizations as the Mass. State Federation of Women's Clubs, Family Information Center, Home Economics Asso. stressed the importance of Massachusetts agriculture and her agricultural food products.

During the year a division representative cooperated with welfare agencies in the preparation of food budgets for more advantageous use of Massachusetts products.

Special promotional efforts were made on behalf of the McIntosh apple crop and in publicity for the fish cooking schools.

REPORT OF THE DIVISION OF PLANT PEST CONTROL

The Division of Plant Pest Control inspects stock growing in the nurseries of the State and also stock brought in from other States, or stock imported from other countries; thus, clean plants and trees for fruit growing and landscape work are assured. Our inspection of the nurseries this past year showed that the stock was apparently free from scales and other pests, although there was a decided increase in the number of gypsy egg masses found in and around the nurseries. Prior to 1900 there were very few nurseries in the State, and these were of small acreage. At the present time, however, we have over 300 that have been inspected and certified by this division. While most of these are located in the eastern part of the State, there are also large nurseries in central and western Massachusetts.

The control of pests that may be injurious to agricultural crops while growing or while in storage, is facilitated through advice and assistance given by this division. We have had numerous complaints of infestations of termites, buffalo bugs, and other household pests, and were able to recommend control measures for these. Field surveys and investigations were made around the nurseries and at various locations throughout the State for the Satin Moth; Oriental Moth; Japanese Beetle; Cedar Rust, and other common pests. The Japanese Beetle is increasing in numbers throughout the State, but it will probably be several years before it is present in large enough numbers to cause serious injury. If it should become prevalent in orchards it can readily be controlled by the sprays that are now recommended for other fruit insects.

The European Corn Borer continues to be one of our chief agricultural pests, and it is now found to be in all parts of the Commonwealth. It is especially serious to early sweet corn. Experiments are being carried on in an attempt to find a spray that can be used for controlling this insect in the larva stage, which will not be too expensive to the grower. At this time, however, the best control seems to be covered by our law which requires that all corn stubble be destroyed by December 1 and stalks destroyed by April 10.

We have followed the same policy that has been in vogue the last few years; namely, of summoning in to hearings those parties that have not complied with this law. It is very seldom that we have to bring a party in for a second offence.

The legislature made a small appropriation for this department to scout for the Dutch Elm Disease. We were able to have four men in the field, and their activities were confined largely to areas in the eastern part of the State and along the Connecticut border, while several hundred suspicious specimens were sent to Amherst for diagnosis; not one of them proved to be the dreaded disease. The Dutch Elm Disease at this time is not known to be nearer the Massachusetts border than Old Lyme, Connecticut.

The Apiary Inspection work was continued on the lines similar to those the department has followed the last few years, and because of the thorough in-

spectations that have been made, foul-brood is not present in any considerable amount.

The control of White Pine Blister Rust continues to be a major plant pest control problem in Massachusetts. During 1936, the Division cooperated with the Federal government in the effort to prevent further serious damage by this fungous disease by eliminating currant and gooseberry bushes from the important white pine-growing sections of the State. Such plants constitute the so-called alternate hosts through which the disease is transmitted to white pine trees. The availability of Federal emergency relief funds allotted to the Bureau of Entomology and Plant Quarantine of the United States Department of Agriculture by the Works Progress Administration for expenditure in Massachusetts materially aided in the clearing of more than 1,900,00 wild and approximately 3,900 cultivated currant and gooseberry bushes from a grand total of nearly 128,000 acres of land. This work provided 181,819 man hours of constructive work in the relief of the local unemployment situation.

REPORT OF THE DIVISION OF RECLAMATION, SOIL SURVEY AND FAIRS

The agricultural fairs of Massachusetts were as a whole unusually successful in 1936. Attendance figures increased more than ten per cent over the previous year and cash receipts also showed an upward swing. The weather conditions while not as favorable as could have been desired were in general reasonably good, only a very few fairs being rained out.

Exhibits were of better quality and in the case of poultry and vegetables showed an increase in numbers over the preceding year. More than 222,000 people attended the fairs in Massachusetts receiving an allotment of State prize money. This includes 13 major fairs; 33 community fairs; 52 grange fairs and 11 poultry and rabbit associations, but does not include the Eastern States Exposition at Springfield or the Brockton Fair at Brockton.

There was a noticeable improvement in the appearance of grounds and buildings and several agricultural societies have started a definite program of grounds beautification. One fair was able to pay off the mortgage on its property and is now planning to make extensive improvements to grounds and buildings.

The Department of Agriculture cooperated with 123 agricultural and horticultural societies, grange and community fairs and poultry and rabbit associations holding shows.

Prize money allotments were made to 109 of these and the others received either ribbons or special trophies. The Division also assisted fairs in premium list revision and in matters pertaining to management and operation of fairs and furnished speakers and lantern slide talks for various organizations and groups interested in agricultural fairs.

SPECIAL EXHIBITIONS

The exhibit in the Massachusetts Building on the Eastern States Exposition grounds, West Springfield, was a unique presentation of the work of the Department of Agriculture by divisions. The caricature and cartoon idea being used. That is questions and answers told the story. In one wing of the building the Department of Conservation presented the work of its Divisions of Forestry and Fisheries and Game in a composite exhibit very cleverly portrayed. In the other wing the Department of Public Works installed an exhibit featuring highway construction and safety measures to reduce automobile accidents.

In the State Building on the Brockton Fair grounds, Brockton, the Department of Public Works took the entire rear room and showed the various activities of the Department in a graphic and interesting manner. The exhibit covered the engineering, laboratory experimental, highway and in fact practically every feature of the work of the Department.

In the front of the building the Department of Correction showed on one side an exhibit by the Bridgewater State Farm and on the other the manufactured articles made in State institutions.

The Department of Agriculture took the center space and showed the work of the Department, the Division of Markets covering both control and promotional work.

In addition to the exhibits in State Buildings the division put on a display featuring apples and fruit in connection with the American Pomological Society's annual meeting in Hartford, Connecticut. The Department also set up special exhibits at several fairs and in connection with shows where agricultural products were featured.

The division assisted with the Eighteenth Annual Union Agricultural Meeting in Worcester and with the Potato and Onion Show held annually at the Eastern States Exposition.

Assistance and service have also been given to granges, garden clubs, horticultural societies and special groups interested in promoting agriculture by means of exhibits and shows.

The Monthly Fairs Letter has been sent out regularly and copy prepared and articles written for this publication. Radio talks have been given and news articles prepared to be sent out as news releases.

YOUNG PEOPLE'S WORK

The Division has cooperated with both the 4H Club activities and the vocational agricultural school students and has not only offered special cash prizes but ribbons, medallions and special trophies as well.

The work with boys and girls is especially important and through the Department's assistance many activities have been made possible which would other wise not have been carried on. Junior fairs have been held in communities where there is no fair, thus giving the young people a chance to exhibit the products which they have produced and to have competent judges pass upon them.

Too much stress cannot be laid upon the importance of this work and the value it is to the future of Massachusetts agriculture. The boys and girls furnish almost half of the exhibits at fairs and receive nearly forty per cent of the premiums offered.

In August, 1936, Mr. George J. Moran of Somerville, was appointed Director of the Division in the place of Mr. L. B. Boston.

SOIL SURVEY

No work has been done in 1936 in connection with a soil survey of the State by counties. This work has been performed in the past in cooperation with the Bureau of Chemistry and Soils of the United States Department of Agriculture.

Soil maps with the field notes attached for Plymouth County and for Norfolk, Bristol and Barnstable Counties are entirely out of print and copies can not be procured.

In the case of Plymouth County the survey was made in 1911 and there is no question but what this county should be re-surveyed and the notes and maps brought up to date and copies made available for distribution.

Norfolk, Bristol and Barnstable Counties were surveyed in 1920 but copies of the maps and reports are entirely out of print and we understand that the original plates have been destroyed. This makes it necessary to do the field work over, bring the notes up to date, and have maps and reports printed for distribution. This work should be undertaken at the earliest possible time as the Department is receiving applications for the reports and can not supply them.

AGRICULTURAL PRIZE MONEY PAYMENTS

(13 Agricultural Societies)

Franklin County Agricultural Society, \$1,600; Hampshire, Franklin and Hampden Agricultural Society, \$1,600; Essex County Agricultural Society, \$1,602.20; Housatonic Agricultural Society, \$869.90; Hillside Agricultural Society, \$900; Highland Agricultural Society, \$900; Union Agricultural and Horticultural Society, \$800; Marshfield Agricultural and Horticultural Society, \$799; Sturbridge Agricultural Association, Inc., \$750; Plymouth County Agricultural Society, \$550; Littleville Community Fair, \$550; Martha's Vineyard Agricultural Society, \$400; Weymouth Agricultural Society, \$200; total \$11,521.10.

(33 Community Fairs and Exhibitions)

Cape Cod Horticultural Society, \$175; Union Agricultural Meeting Fruit Show, \$159.50; Acton Junior Fair, \$121.50; Natick Community Fair, \$175; Sterling Farmers Club, \$125; Connecticut Valley Onion and Potato Show, \$175; Hampden County Boys' and Girls' Club, \$95; Heath Agricultural Society, \$150; Hingham Agricultural and Horticultural Society, \$85; Monson Community Fair, \$84.90; Massachusetts Horticultural Society Junior Exhibit, \$75; Groton Junior Fair, \$125; Granville Community Fair, \$65; Ashby Community Fair, \$67.45; Agawam Community Fair, \$45; Bolton Farmers Club, \$45; East Bridgewater Community Fair, \$85; Upton Farmers Club, \$85; Orange Boys' and Girls' Club, \$65; South Amherst Fruit Show, \$85; Southwick Community Fair Association, \$70; Westfield Young People's Agr. Society, \$45; Norfolk County Junior Fair, \$44.25; Rehoboth Community Fair, \$39.75; Worcester County Junior Fair, \$34.50; Lawrence Horticultural Show, \$20; Bristol County Flower Show, \$30; Dalton Community Fair, \$19.50; East Blackstone Community Fair, \$34.50; Future Farmers of America, \$44.80; Montgomery Junior Fair, \$15; South Middleboro Community Fair, \$10; Massachusetts State College Horticultural Show, \$9.50; total, \$2,525.15.

(52 Grange Fairs)

Abington, \$9; Acushnet, \$10; Ashburnham, \$10; Assonet, \$9; Auburn, \$9.75; Bedford, \$12.50; Brimfield, \$10; Chatham, \$10; Cochuuate, \$9; Cheshire, \$15; Dedham, \$15; Dunstable, \$25; Eastham, \$10; Fairhaven, \$15; Holden, \$10; Hilltop, \$15; Lunenburg, \$10; Lexington, \$7; Ludlow, 15; Leicester, \$10; Monomoy, \$9; Merrimac, \$14; Mansfield, \$15; Nauset, \$10; New Salem, \$10; Northboro, \$8; Nemasket, \$10; Norfolk Pomona, \$10; Norfolk, \$7.50; North Seekonk, \$10; Oak Hill, \$15; Palmer, \$10; Riverdale, \$10; Richmond, \$15; Rochester, \$10; Rockland, \$2.10; Rutland, \$10; Stockbridge, \$15; Swansea, \$10; Seekonk, \$6.25; Tyngsboro, \$10; Thrifty, \$10; Townsend, \$9.95; Warren, \$30; Williamstown, \$10; Waltham, \$10.50; West Stockbridge, \$10; Westford, \$10; Wilmington, \$10.05; Wilbraham, \$15; Weymouth, \$10; West Newbury, \$10; total, \$588.60.

(11 Poultry and Rabbit Associations)

Boston Poultry Show, \$115; Essex County Poultry Association, \$31.50; Metropolitan Reading Poultry Association, \$110.75; Athol Poultry and Pet Stock Association, \$345.75* Springfield Poultry Club, \$175; Athol Egg Show, \$8.00; Merrimack Valley Rabbit Breeders Association, \$49.75; Holyoke Poultry and Rabbit Association, \$149.25; New England Poultry Association, \$200; Suburban Rabbit Breeders Association, \$40; Essex County Rabbit Breeders' Association, \$47.50; total, \$1,272.50.

* Two shows held during fiscal year.

SUMMARY OF STATE AGRICULTURE PRIZE MONEY PAYMENTS

Agricultural and Horticultural Societies	\$11,521.10
Community Fairs and Exhibitions	2,525.15
Grange Fairs	588.60
Poultry and Rabbit Associations	1,272.50
Boys' and girls' club work	339.57
Badges, medals, cups, etc.	873.25
Special agricultural exhibits	7,474.97
Miscellaneous payments	178.94
	\$24,774.08

REPORT OF THE STATE RECLAMATION BOARD

The work of the State Reclamation Board in the way of supervision of mosquito control ditching and maintenance work of the various mosquito control projects has followed the regular procedure during the fiscal year 1936. In addition to this, the State Reclamation Board has been called upon to assist in laying out various W.P.A. projects in cities and towns of the Commonwealth, as well as endorsing many of these projects. It has also been called upon to check and supervise, insofar as its field force was available, W.P.A. projects of this type in the cities and towns referred to. There were no appropriations on the part of the state for emergency relief work as in 1931, 1932 and 1933, but the projects supported by local funds carried on as follows:

The *Cape Cod Mosquito Control Project*, comprising fifteen towns in Barnstable County, had expenditures for the year of \$32,544.94. In this project, ditching of previous years, comprising roughly 1135 miles of ditching, has been checked and maintained. This maintenance included the cleaning of over 3,000,000 feet of old ditching. In addition, new ditching was constructed in areas where breeding had developed or threatened to develop. This new ditching amounted to over 340,000 feet.

The *Nantucket Mosquito Control Project* expended a total of \$2,306.15, mostly for maintenance but including some new ditching and filling.

The *Belmont-Cambridge-Watertown Project* had expenditures in the town of Belmont of \$551.77, largely for oiling of catch-basins and pools that could not be drained.

The *Natick Mosquito Control Project* had an expenditure of \$12.00, all for maintenance.

So far as state projects are concerned, i.e., projects for which funds for ditching were supplied through state appropriations, the usual maintenance work was carried on in the fifty-one towns and cities concerned, total expenditures being \$29,770.17. This maintenance work covered the cleaning and checking of over 2,000 miles of mosquito control ditching. In the supervision of this mosquito control work and the other activities of the Reclamation Board, the total expenditures were \$13,915.01, spent from the usual appropriation granted to the board for expenses and services. In response to a request of the W.P.A. authorities, the Reclamation Board examined, checked and endorsed forty-four applications from various cities and towns for mosquito drainage projects furnishing 31,155 man-months of work for relief labor, or roughly six months' work for 5,000 men. The field agents and investigators of the board gave periodic supervision to many of these projects, and in many cases actually laid out the work in preparation for the proposals. The board also acted as sponsor for several W.P.A. projects including two in Norfolk County—one for the Fore River basin, and one for the Neponset River basin—also a project covering certain towns in Plymouth County, and another for towns in Bristol County; and in these particular projects, some 300 men were employed.

The board has also, in response to requests from different communities, made surveys of many areas to determine the best course to pursue in endeavors to

reduce breeding of mosquitoes, and has made reports on same for the benefit of officials interested. The field staff of the board, in addition to work on the projects mentioned above, has checked many projects, endorsement of which was given the previous year, but the work of which was carried on during the year 1936. Work on mosquito control under the supervision of the State Reclamation Board has consisted largely of ditching for drainage purposes. The use of larvicide has been very much limited in projects in Massachusetts. About the only material being used is the usual fuel oil, and in all of the projects under the supervision of the board, expenditures for oil during the fiscal year did not exceed \$400.

With respect to developments regarding the interrelation of mosquito problems and wild-life conservation, the Reclamation Board has worked with the Division of Fisheries and Game of the State Department of Conservation on experiments on modifying conditions in certain salt marsh areas where mosquito control ditching has made the marshes less attractive to ducks and shore birds. By restricting the depth of drainage of salt marsh pools and sloping the banks, the pools apparently can be made attractive to wild fowl without creating conditions likely to produce mosquito breeding. It is hoped to continue observations in the experimental areas during the present year to determine if such modifications can be safely made. The Reclamation Board has endeavored to carry on the mosquito control work in such a way as to do as little damage to wild bird life as possible, and has found the wild-life interests willing to co-operate in a reasonable manner.

Following are tables of expenditures for the fiscal year on projects other than state projects and of the assessments for maintenance of state projects.

EXPENDITURES

Mosquito Control—Other than State Projects

<i>Projects</i>	<i>Previous to 1936</i>	<i>Fiscal Year 1936</i>	<i>Total</i>
Cape Cod	\$288,875.82	\$32,544.94	\$321,420.76
Nantucket	32,222.69	2,306.15	34,528.84
Belmont-Cambridge-Watertown ...	5,758.04	551.77	6,309.81
Natick	622.04	12.00	634.04
	<u>\$327,478.59</u>	<u>\$35,414.86</u>	<u>\$362,893.45</u>

Maintenance of State Projects

<i>Project</i>	<i>Total Assessment</i>
Bristol-So. Plymouth	\$ 6,260.00
South Shore	14,800.00
North Shore	5,455.00
Nantucket State	700.00
Martha's Vineyard	1,125.00
Wenham	75.00
	<u>\$28,415.00</u>

Financial Statement Verified
12-5-38 R. W. C.

Approved,

GEO. E. MURPHY,

Comptroller

S.
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L.

The Commonwealth of Massachusetts

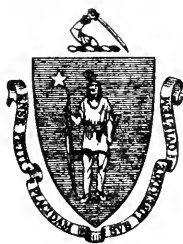
ANNUAL REPORT

OF THE

Commissioner of Agriculture

FOR THE

Year Ending November 30, 1937



The Commonwealth of Massachusetts

DEPARTMENT OF AGRICULTURE

To the Honorable Senate and House of Representatives:

In compliance with the provisions of Chapter 128 of the General Laws, I am herewith making my annual report for the year ending November 30, 1937, for the Department of Agriculture.

Respectfully submitted,

WILLIAM CASEY, *Commissioner*.

PERSONNEL OF THE DEPARTMENT

COMMISSIONER OF AGRICULTURE—WILLIAM CASEY, SPENCER.

Executive Secretary to the Commissioner—MICHAEL J. CARROLL.

ADVISORY BOARD APPOINTED BY THE GOVERNOR AND COUNCIL

JOHN BURSLEY, BARNSTABLE (WEST), Term expires November 30, 1938.

JAMES O'BRIEN, LEE, Term expires November 30, 1940.

JOHN T. GOGGIN, SEEKONK, Term expires November 30, 1940.

LOUIS A. RIORDAN, NORTH ABINGTON, Term expires November 30, 1938.

GEORGE A. WELLS, WORCESTER, Term expires November 30, 1939.

DIVISIONS AND ORGANIZATIONS

LIVESTOCK DISEASE CONTROL—*Director*, CHARLES F. RIORDAN, SHARON.

DAIRYING AND ANIMAL HUSBANDRY—*Director*, LESTER T. TOMPKINS, ESSEX.

MARKETS—*Director*, WILLIAM F. MADDEN, BOSTON.

PLANT PEST CONTROL—*Director*, R. HAROLD ALLEN, TAUNTON.

RECLAMATION, SOIL SURVEY AND FAIRS—*Director*, ROBERT F. CROSS, OSTERVILLE;

Assistant Director, A. W. LOMBARD, ARLINGTON.

AGRICULTURIST—DANIEL J. CURRAN, MARLBOROUGH.

STATE RECLAMATION BOARD

Chairman, DANIEL J. CURRAN, MARLBOROUGH.

EDWARD WRIGHT, DEDHAM.

ROBERT F. CROSS, OSTERVILLE.

Secretary, GEORGE R. STRATTON, HOPKINTON.

REPORT OF THE COMMISSIONER

It has been the policy of the Department in 1937 to emphasize the importance of producing only quality farm products and applying sound marketing principles to the sale, distribution and advertising of these products. The marketing of agricultural products becomes a more serious problem as competition from every section of this country and from foreign countries increases on our Massachusetts markets. Farmers are constantly faced with important questions relating to the marketing of their farm products. They are seeking information that will guide them in planting crops that will meet the consumer demand. They are looking for advice on the volume of certain crops that can be marketed safely with a reasonable assurance of profit. Our farmers are especially interested in matters of when and where to sell the farm products to the best advantage. We are making every effort to solve these problems and we must depend for the most part upon conclusions and deductions drawn from available information concerning conditions affecting markets and prices. Our market reports and our market news is an essential and vital factor to an intelligent marketing program. Current information concerning conditions and prices in the markets prevent much waste in marketing, and this condition is most often found in markets for perishable foods, especially fruits and vegetables. These products are subject to frequent changes and demand, and if a surplus reaches a given market, prices will drop to such an extent that it may not even pay to market a major portion of the crop. We compile our market reports and send our market news of important significance with the thought in mind of giving the best service possible.

Market reporters reach the market about five o'clock each week-day morning and spend several hours inspecting the products to determine quality and condition. They confer with the farmers, dealers, and commission men to determine the volume and prices of farm products on the market. These men visit the auctions and farmers' cooperative markets, study the relationship of volume and price on each different type of market. This department has found it desirable to establish grades on farm products and the effect of grade on price is an important consideration in formulating plans for greater production of quality farm products. The continuous study of prices, sales practices, conditions of chain stores, other retail markets, roadside stands and wholesale outlets offer opportunities for market reporters and investigators to obtain information that can be carefully analyzed and officially sent out to our many listeners and readers. We feel, however, that supply and demand will continue to be the dominating factor in the marketing of farm products. Other plans, with limitations, restrictions and governmental control, may continue for a while and create artificial adjustments that apparently are intended to be helpful and prevent periods of great surplus or extreme short crops. However, our experience would indicate that our elements cannot be controlled and best-laid plans often go astray. Our farmers and dealers are always alert to some advantage that will react to their benefit. Our market reports and other information often give to the individual the information that is necessary to buy or sell at the best time and the farmer who watches reports carefully and interprets the news correctly and acts wisely upon the information obtained is usually the farmer who has a cash balance at the end of the year. We are definitely committed, therefore, to a policy of developing a market information service that will give the greater service to the farmer and those agencies that are honestly concerned with the sale and distribution of farm crops.

ADVERTISING FARM PRODUCTS

During the latter part of 1937 the department co-operated in an extensive advertising campaign of two important farm products. National Milk Week, from November 12 to November 20, brought to the attention of milk consumers throughout the country the value of milk as a food product. During the fall months, in co-operation with the fruit growers, this department conducted a campaign to make the consumers more conscious of the health and nutritive value of our local apples, especially the McIntosh. Both of these campaigns were of great assistance in bringing about a greater consumption of these farm products. We are convinced that there is a great need for co-operative action, not only on the part of our farmers, but on the part of all agencies interested in a more profitable agriculture in Massachusetts and in a more effective program of advertising farm products.

Our farmers have been instructed for many years in the principle of increased production. The agricultural colleges and the County Extension Service have been very thorough in teaching the farmer to make two blades of grass grow where one grew before; to eliminate boarder cows from the herd and maintain the dairy herd on the basis of increased milk production at lowest possible costs; to follow a carefully planned breeding program in the poultry industry and utilize only hens that would lay 200 eggs or more; to plan their market garden enterprises so that the maximum amount of vegetables could be grown per acre. Modern machinery, new equipment and modern buildings have been used to bring about this greater production. These practices, and many more, have been followed industriously by the farmers and have been largely responsible for the increased production in many farm commodities that we have at the present day. Our farmers have learned the art of producing and they have learned it very well, and it now becomes a real necessity for farmers to study the problems of marketing, learn to dispose of their products in the most efficient and most profitable manner.

There is a positive need for advertising. There is a vital need for bringing home to the consumers pertinent facts relating to the value of our local farm

products in the daily diet. Several years ago the marketing officials of all the New England States agreed upon a proposed law that would bring about a uniform grading and labeling of farm products throughout New England, and in practically every state a farm products grading law was enacted. This law provided for the establishment of grades, and labeling of such graded farm products with a New England label. Hearings were required prior to the establishment of all grades and the right to use the label could be obtained from the Commissioner of Agriculture of each state. Massachusetts grades have been established on eggs, turkeys, asparagus, strawberries, tomatoes, beets, carrots and several other farm products, and we are now continuing to sell many eggs under the Massachusetts Special label. This marketing program with its rather unique advertising plan was well thought out and a more universal use of the grades and labels would have been beneficial to the farmers, but it appears that the enthusiasm with which this program started waned and our farmers have not received the full benefit that the marketing officials had in mind when the farm products grading law was presented to the Legislature. In all of our advertising programs it will be necessary for us to keep alive the initial enthusiasm and be forever alert to the underlying principle of keeping the old customers and constantly adding new customers.

We are all mindful during this day and age that the automobile is playing a very important part in the progress of every community. Our farmers on the main highways are constantly in touch with thousands of consumers who pass daily. The appearance of the farm will often create a lasting impression in the minds of visiting consumer friends. Especially is this true in our dairy farms, as more and more people have an opportunity to inspect personally the farms that produce milk for their city or town. The cleaner and neater the farm the greater advertisement for quality milk and increased consumption. It is therefore important that every farmer, whether located on the main highway or on some less frequently traveled road be prepared for consumer inspection at all times. It might be conceivable that some attractive sign with the words "Welcome. Quality farm products produced here" might be displayed where it would show to advantage on many of our farms on the main highways.

PROGRESS IN POULTRY FARMING

Poultry farming in Massachusetts today is one of our major agricultural industries. In 1910 the income of our poultry products was approximately \$6,000,000, and our recent census figures estimate the income of this important phase of our agriculture as over \$10,000,000. This development is the result of hard work on the part of our progressive poultry farmers. We excel in a constructive breeding program. Only the best hens and selected males are permitted to take part in our improvement program. Our poultry farmers are constantly watching and battling against the disease problem. We must have healthy birds in order to maintain high producing flocks and go forward to better records.

The Department of Agriculture is vitally interested in further development of our poultry industry. I am quite sure that many farms in Massachusetts are especially adapted to raising poultry for profit. Long ago we relinquished that type of farming that required vast level fields for successful accomplishment. The raising of grain and livestock is now definitely located in the middle west and southwest. We must build our Massachusetts agriculture on special crops and special types of farming that are adapted to our soils, climate and character of farm lands.

Our farmers are combating disease successfully. They have been assisted by every agricultural agency in their respective states. New breeds have been developed and old ones perfected. Improved methods of sanitation and more efficient farm management have paved the way for more healthy flocks and greater production of eggs.

THE PRODUCTION OF QUALITY MILK

We have followed during the year 1937 a definite policy of inspecting our dairy farms carefully in order that the cleanest and safest milk be supplied

to our Massachusetts markets. Our farmers have cooperated wholeheartedly, and the inspectors from our Division of Dairying have reported that many more of our Massachusetts farms have met the requirements for Grade A milk production. It would seem that a greater proportion of the Grade A milk sold in Massachusetts should be obtained from selected Massachusetts farms. These farms are near our local markets and can be inspected frequently in order to satisfy the local boards of health and the consumers that a high quality of production is maintained. It would further seem that many more of our Massachusetts farms might obtain a Special Milk certificate and increase the volume of special milk that is being sold on our local markets.

Laws pertaining to several phases of our dairy industry have been discussed in great detail during the past year and it would appear that several changes are necessary to clarify these laws and co-ordinate the activities of the Department of Agriculture, the Milk Control Board, the Milk Regulation Board, the Department of Public Health and the local boards of health, pertaining to the production, sale and distribution of milk. A resolve was therefore passed during the present session of the Legislature to establish a commission to study the milk situation (Chapter 68, Resolves of 1937). That investigation and study is now in progress and members of this department are co-operating in every possible way with the special commission. A report will be made to the 1938 session of the Legislature.

PLANT PEST CONTROL

Our fruit and shade trees have suffered considerably during the past few years from the ravages of the tent caterpillar, and it has been thought advisable to enlist the co-operation of boy scouts, 4-H club members and others to gather tent caterpillar nests during the winter months in an effort to minimize the spread of this infestation. It was our plan to reward these boys and girls who did the most effective work in gathering these nests, and the Governor signed an amendment to our general laws which permitted the Department of Agriculture to offer prizes for, and in aid of, the elimination and suppression of insect pests.

MASSACHUSETTS DEVELOPS AN INDUSTRIAL COMMISSION

It was during the legislative session of 1937 that the Massachusetts Industrial and Development Commission was established under the provisions of Chapter 427, Acts of 1937. The act reads as follows:

An Act Establishing the Massachusetts Development and Industrial Commission for the Promotion and Development of the Industrial, Agricultural and Recreational Resources of the Commonwealth.

Chapter twenty-three of the General Laws is hereby amended by inserting after section eleven A, inserted by section three of chapter three hundred and thirty-one of the acts of nineteen hundred and thirty-four, under the caption "THE MASSACHUSETTS DEVELOPMENT AND INDUSTRIAL COMMISSION", the following three new sections:—

Section 11B. There shall be in the department a commission for the promotion and development of the industrial, agricultural and recreational resources of the commonwealth, to be known as the Massachusetts development and industrial commission, in this and the two following sections called the commission. The commission shall consist of the commissioner of labor and industries and the commissioner of agriculture, ex officio, and five unpaid members appointed by the governor, with the advice and consent of the council, who shall be designated in their initial appointments to serve respectively for one, two, three, four and five years. The commission shall annually choose one of its members as chairman. One of the members appointed by the governor as aforesaid shall always be a representative of labor. Upon the expiration of the term of office of an appointive member, a successor shall be appointed in the manner aforesaid for five years. The commission shall meet at least twice a

month and at such other times as it shall determine by its rules. The members shall receive their necessary traveling expenses while in the performance of their official duties.

Section 11C. Subject to the approval of the governor and council, the commission may appoint and fix the compensation of a secretary and such experts as it may require and may remove them with like approval. It may also employ such other necessary clerks and employees as it may require and fix their compensation. Authorized representatives of the commission may travel outside the commonwealth for the purpose of carrying out the provisions of section eleven D.

Section 11D. The commission may conduct researches into industrial and agricultural conditions within the commonwealth, and shall seek to co-ordinate the activities of unofficial bodies organized for the promotion of the industrial, agricultural and recreational interests in the commonwealth, and may advertise, prepare, print and distribute books, maps, charts and pamphlets which in its judgment will further the purpose for which it is created, and, on behalf of the commonwealth, may accept contributions, and, subject to the approval of the governor and council, may expend the same and may contribute to the New England Council such sum or sums as the governor, with the advice and consent of the council, may approve for the purpose of furthering the recreational advantages of the New England states, and also may expend such sums as may be appropriated by the general court to carry out the purpose of this and the two preceding sections. Approved May 29, 1937.

It was the intent of those who sponsored this legislation that a substantial part of the appropriation would be used for advertising farm products. We have felt for a long time that the State should take an active part in bringing home to the consumer general information relating to the quality of our farm products and the great variety that can be obtained in this State. It has been our contention for a long time that agriculture and industry should proceed hand in hand along the path to recovery and prosperity. If our farmers are prosperous and have greater buying power it would seem only natural that our industries will benefit. We are confident that the Massachusetts Industrial and Development Commission will be of great assistance to Massachusetts agriculture in the future.

AMENDMENTS TO THE SEED LAW

During the past year several minor amendments* have been made to the seed law giving to the Director of the Experiment Station authority to cause such testing and analyses of seeds as seem necessary and desirable. The following four sections clarify existing law and give to the director certain powers that were already in force in the practical operation of the seed law:

Section 261H. The commissioner of agriculture, either in person or by his assistants, shall have free access at all reasonable hours to each building or other place where agricultural seeds or mixtures thereof are stored, sold or offered or exposed for sale for the purpose of inspection of such seeds and, upon tendering the market price, may take samples of such agricultural seeds or mixtures thereof for tests and analyses. Such samples shall be thoroughly mixed and two official samples taken therefrom; each official sample shall be securely sealed. Such official samples shall be submitted by said commissioner or his deputy to the director of the Massachusetts agricultural experiment station, in this and the four following sections called the director, for testing and analyzing. One of such samples shall be held by the director or his duly authorized assistant at the disposal of the person named on the label as the vendor of the agricultural seed sampled, for six months after the results of the analysis have been reported as provided in the following section, and the other sample retained by the director or such assistant for analysis.

* Chapter 288, Acts of 1937.

Section 261I. The director shall cause such tests and analyses as he may specify to be made of samples collected under the preceding section in order to determine the quality of the seeds contained in such samples. The results of all such analyses shall be reported to the commissioner of agriculture. To enable the director to determine the trueness to type of variety of vegetable and other seeds he shall provide that field tests be made of such samples of seeds as he may designate and may publish the results of all such tests and analyses as are made in accordance with the provisions of this section.

Section 261J. The word "approximate" as used in sections two hundred and sixty-one A to two hundred and sixty-one L, inclusive, shall be defined in rules and regulations promulgated by the director.

Section 261K. Any persons residing or doing business in this commonwealth shall have the privilege of submitting to the director samples of agricultural seeds for test and analysis, subject to such rules and regulations as may be adopted by the director, including a reasonable charge or fee for such test and analysis. Receipts under this section shall be paid into the treasury of the commonwealth.

REPORT OF THE DIVISION OF DAIRYING AND ANIMAL HUSBANDRY

The Division may well be subdivided into the following sections: Poultry, both regulatory and promotional. This section requires the full time services of two men.

POULTRY

Record of Performance.

For this year the Grade known as Massachusetts Record of Performance Pullorum Clean, was carried on with very good results. There were 18 poultry plants under the supervision of the Department, and unannounced visits were made to these plants, taking over the trapnesting work for the day, and checking the trapnests for accuracy. In addition, the private advertising of the breeders was checked, and all of the birds in special mating pens were inspected and approved before the breeders were allowed to sell pedigreed stock. Records were sent to this office by the breeders on all of their breeding activities, including the trapnest records, reports on the eggs set, chicks hatched and stock sold.

At various times throughout the year articles were prepared for magazines, explaining the meaning of R. O. P. work in this State, and the results of our R. O. P. Breeders were compared with the results of Breeders in other States, both in connection with R. O. P. project and the birds entered at Official Egg Laying Contests. In both cases the records of our R. O. P. breeders were above those of Breeders in other States.

A number of State, Sectional and National meetings were attended in the interest of our R. O. P. program.

In working with the Breeder's Association, an R. O. P. Circular was prepared and distributed to 7000 persons in the State, and throughout the country generally.

The annual summary of our R. O. P. work was prepared and distributed to poultrymen in this State, and to interested persons throughout the country.

The following is a brief summary of the results obtained by our R. O. P. Breeders for the 1936-37 Season:

Summary

Number of birds entered under R. O. P. supervision	8,311
Number of birds passed R. O. P. supervision	3,147
Average production all birds passing R. O. P. supervision	245.14
Average egg weight all birds passing R. O. P. supervision	25.65 ozs.
Average body weight all birds passing R. O. P. supervision	6.08 lbs.
Number of birds in individual pedigree pens	2,648

The above records are the best records obtained by our R. O. P. Breeders to date, showing consistent improvement from our breeding program.

Poultry Certification.

Under our Massachusetts Certified Pullorum Clean Grade there were 20 breeders having their flocks supervised, with a total of 46,427 birds individually inspected and banded. Each bird was inspected and leg-banded, providing it met the grade requirements for pullorum disease freedom, health and vigor, productive capacity, and reasonable freedom from standard disqualifications. During the hatching season two visits were made to check the size of all hatching eggs set by breeders under this Grade, making sure that the grade requirements were lived up to.

Pullorum Clean Grade.—Under this Grade, we supervised 186 flocks that applied for and met the requirements for this Grade. There were a total of 305,065 birds under this Grade. All of these birds passed at least two consecutive 100% pullorum disease free tests. A list of the flocks meeting the requirements of this Grade was compiled and distributed.

Pullorum Passed Grade.—This Grade allowed for the listing of flocks passing one 100% free pullorum disease test. Under this Grade there were 57 flocks qualifying with a total of 37,964 birds. Lists of these flocks were prepared and distributed.

Poultry Transportation Law.—During the year there were 589 Massachusetts poultry transportation licenses issued. Considerable work was done with local and state enforcement agencies in policing the buying, selling and transporting of poultry in this State, and during the year it was necessary to revoke four poultry transportation licenses after a hearing had been granted and it had been found that the holders of these licenses had violated the provisions of the law.

Poultry Tattooing.—During the year the tattooing program was continued, with meetings and demonstrations being held throughout the State, at which time the program was explained to the poultrymen. The tattooing program, in connection with the poultry transportation law, has been successful in practically eliminating poultry stealing from this State. Up to November 30, 1937, there has been a total of 716 poultry tattoo numbers issued by the Department. These numbers are registered in this office and in the office of the State Police.

Miscellaneous Poultry Work:

During the course of the year, all of the poultry correspondence and requests for poultry information pertaining to the Division work, was handled.

During the year the poultry inspector acted as Secretary of the Massachusetts Federation of Poultry Associations, and the R. O. P. Breeders' Association. In cooperation with these two Organizations we were able to do a great deal which was beneficial to the poultry industry of the State.

In cooperation with certain of the County Agents we were able to successfully prevent the spread of certain infectious poultry diseases in the State.

In cooperation with the U. S. Department of Agriculture, we handled the operation of the National Uniform Plan in this State.

We assisted at certain Fairs and exhibits in promoting the work of the Division, and, in cooperation with other groups, prepared a poultry exhibit showing the position of our Massachusetts poultry breeding stock. This exhibit was shown at the Poultry Industries Exposition held in New York City the first part of November.

Beginning with June 1, 1937, a detailed account of certain office activities was kept. This account is as follows:

Office conferences	12	Letters written	1,122
State conferences	28	News and radio releases	5
Out-of-State meetings	3	Hearings attended	7
Meetings attended within the		Mimeographed letters and sten-	
State	22	cils prepared and distributed	8,452
Letters received	1,557		

BARNs AND DAIRIES

The Barns and Dairies work has to do with the inspection of farms producing milk for sale anywhere in the Commonwealth; the instruction to farmers

for the production of their product within established requirements; the regulating of the dealers or handlers of milk; checking their supplies for quality and condition of handling, etc. This section requires the full time of eight men, a supervisor, four full time clerks, and three other clerks, most of their time.

Total Inspections December 31, 1936 to November 30, 1937

	<i>Inspections</i>	<i>Yes</i>	<i>No</i>	<i>Reinspections</i>	<i>Yes</i>	<i>No</i>
1936						
December	247	203	44	18	14	4
1937						
January	679	563	116	40	21	19
February	587	465	122	53	37	16
March	1,009	792	217	54	37	17
April	742	555	187	132	98	34
May	777	566	211	230	154	76
June	823	415	408	253	155	98
July	1,191	613	578	252	155	97
August	772	392	380	548	355	193
September	845	336	509	388	306	82
October	901	461	440	683	540	143
November	522	262	260	464	342	122
Total	9,095	5,623	3,472	3,115	2,214	901
Inspections		9,095		Other Farms Visited		1,987
Reinspections		3,115		Hearings		159
				Refusals		152
Total		12,210				

Certificates Issued: 25,200

The men employed in this service further assisted the Director in carrying out special functions in connection with the various Fairs, Expositions, group meetings, and in connection with National Milk Week. They also have been permitted to attend certain meetings of value held in Vermont and elsewhere, while at work in areas adjacent to the said meetings.

BONDING WORK

The Bonding section is directly responsible to the Commissioner for the manner of protecting the producer for the payment of his milk from the dealer or handler. This section was in the hands of temporary help during the entire year, yet carried out its work without any serious complaints, and in many cases adjusted differences which saved the farmers many thousands of dollars. It requires the full time of two men. A more detailed report follows.

The Massachusetts Milk Licensing and Bonding Law took effect in March 1934. The purpose of the law was to protect the Massachusetts farmer for the milk that he sold to dealers. Available information shows that the average return to the farmers of this State is twenty-eight cents per hour, and his income is shattered if the dealer does not pay him for his product. The farmer usually is not protected by selling to several dealers and, therefore, non-payment by one dealer represents only a percentage of his income. He usually sells to one dealer only, and if this dealer does not pay, the farmer is oftentimes ruined. The farmer is protected for one payment period. The law has had another effect as has been proven recently by reports from several dealers. It has forced them to keep certain quick assets in the hands of the Commissioner. If they had not done so, the money may have been spent on improvements which would have been unwise at the time, and their ability to pay promptly for the milk purchased in this period of economic depression would be sorely tried.

The law can be divided into two parts; the first regarding the licensing of the dealers and its necessary detail, the second regarding the application of the law when its provisions have been violated.

Under the first part: the licensing of the dealer. Approximately 600 dealers applied for a license in 1937 to operate under the law. Constant check is made through various agencies to compel all dealers who are affected by this law to be licensed. Approximately \$620,000 was posted by the dealers to secure the payment of milk to the farmer. Some posted surety bonds, and the rest posted notes secured by cash, savings bank books, government bonds, stocks, life insurance policies and mortgages. Accurate checks must be made constantly to protect the dealer from loss due to error and to protect the farmer if the collateral must be seized. The collateral must be properly assigned to the Commissioner by various legal papers of assignment, consent, withdrawal orders, votes of corporations, stock and bond powers, mortgage recordings, etc. The records and papers were carefully scrutinized during the year and checked back with the State Auditors. The amount of collateral posted by some dealers was increased during the year because the dealers increased their business. Collateral was reduced or eliminated by other dealers because of a decrease in their business or retirement from distributing milk. The type of security posted is considered to be a quick asset in most cases. Some chattel mortgages are still on hand from past years, but no new ones are acceptable to the Commissioner. Some were eliminated in 1937 and the policy for 1938 is to eliminate the balance of these chattel mortgages during the year.

Regarding the second part of the law: the application of the law when its provisions were violated. The great bulk of the men who distribute milk have been found to be honorable, law abiding citizens, who cooperate with the bonding law. The milk business for producer and for dealers has been a most difficult one for over seven years, and 1937 was no exception. Certain health requirements must be lived up to according to State and local requirements. These requirements add to the cost in a quart of milk. The problem of surplus milk is still an aggravating one. And the problems of competition in distributing milk are peculiar to the industry. Despite the difficulties arising during the year from the suggested causes, the bonding law was respected in a large percentage of cases. When investigations were required, the dealers fell into three classes. The first group involved dealers who were complained of and investigation showed that the dispute was beyond the pale of the bonding law. The second group were dealers who intended to live up to the law, but economic conditions beyond their control compelled them to be violators of this law. The bulk of these cases were worked out to the satisfaction of farmer, dealer, and state. On inspection of some of these dealers' books, it appeared that they were in fact small private charitable institutions, extending credit to citizens of this Commonwealth who were temporarily without employment. The third class included dealers who were inefficient or inexperienced. In this latter class our greatest difficulties arose. Hearings were held, the conditions of the bonding law defined and frequent checks made to note improvement. Two dealers were forced out of business, the collateral posted with the Commissioner of Agricultural was seized and the proceeds distributed to the farmers, according to the law. Four cases were pending on January 1 for decision on which hearings had been held and checks made. Violations of the bonding law create conditions of unfair competition in the industry and cause unsocial practices of price cutting to meet the competition of dealers who sell at a price regardless of cost, because they do not intend to pay the farmer, or cannot pay the farmer due to their inefficient business practices.

The policy of education must be continued during the coming year. Cooperation with both producer and distributor of milk will be continued so that the citizens of the State will reap the full advantages available from this wise, farseeing law.

DAIRY WORK

The general dairy work, dealing with correspondence, attending dairy meetings, promoting dairying, the second largest industry in the State, advising producers along the many lines pertinent to the general welfare of their farms, stock, products, or on the construction of buildings or equipment, has been actively carried out. The volume of letters going out on above subjects is in the many thousands. The meetings attended, both within and without the Commonwealth, have averaged better than four a month. The office conferences with producers, dealers, inspectors and others interested in the industry, or in our work, run into the many hundreds.

Butter fat check tests have been carried on for the protection of the producer who is paid on a butter fat basis. This work requires one man, full time, who, at the same time makes quality checks at dealer's plants.

1937

Babcock tests made	3,730	Farms not approved	8
Producers milk tested	3,957	Farms approved on reinspec-	
Dealers or creameries visited	730	tion	2
Milk inspectors visited	170	Farms not approved on rein-	
Complaints investigated	45	spection	4
Producers interviewed	509	Reductase tests made	389
Dealers samples tested	157	Sediment tests made	352
Farms visited	237	Temperatures taken	2,815
Farms approved	26		

The man on this work spent considerable time assisting at the Eastern States Exposition, and working with Inspectors of certain cities in arranging for quality exhibits, and assisting with work in connection with National Milk Week.

ANIMAL HUSBANDRY WORK

The Animal Husbandry work of the Division has been carried on by the Director, working with the Extension Service, the State College, various Associations formed to promote the interest and welfare of sheep, goats, horses, cattle, swine, etc. The Division carried on a Sheep Demonstration Farm, in accordance with the statutes, contracting with Oscar Belden & Sons of North Hatfield, for the use of their farm, flock, etc., to dispense information to interested parties. Our efforts have enabled forty or more producers to enter into sheep growing as an adjunct to their other farm lines. We have imported into the State two carloads of ewes which were sold at cost to farmers to start new flocks, or replenish their depleted old ones. We have assisted growers in numerous flock management problems. We have enabled producers to get sheep from growers who had the type or breeds desired, other than those carried by the Beldens. Cooperating with the Beldens, we have conducted at least one field or general demonstration, open to all people interested in sheep husbandry. At these demonstrations, talks have been given by members of the College faculty, by the Director of this Division, and visiting growers or specialists. Practical operations have been demonstrated to show how best to control diseases, parasites, etc. All in all, this farm has proven a great help to the grower, and to the State.

The Department, each year, assists sheep growers in the marketing of their wool, through a co-operative wool pooling plan, which has proven its value to the growers for the last 16 years. Many times the growers actually double the amount received, by marketing through the Pool, over direct sales of grease wool. Blankets are made for the growers who sell them locally, or through established trade channels.

Meetings dealing with horses, sheep, cattle and milk goats were arranged in connection with the Union Agricultural assembly, held annually under the sponsorship of our Department. There were several hundred farmers who attended these meetings, many taking a definite part in the open discussions.

The Director has exchanged speaking engagements with neighboring

States, wherein we have benefited in the exchange of views on topics dealing with our Dairy or Animal Husbandry fields of endeavor.

The progress of the division made in the past year can rightfully be accounted for by the fact that the personnel of the division has been loyal and co-operative, enabling the director to perform the functions of the division with ease.

REPORT OF THE DIVISION OF MARKETS

MASSACHUSETTS APPLE CROP

Our apple crop in Massachusetts is a major commercial farm crop today with an approximate value in 1937 of \$4,000,000. We have made rapid strides in the development of our orchards during the past twenty-five years and we are especially concerned now with the marketing of the apple crop. To be sure, the cash value of this important farm crop has made a noticeable increase, but another factor that cannot be overlooked in speaking about Massachusetts apples is the improvement in quality. The problem of our fruit growers has not been an easy one because it has been necessary to combat constantly the insects and diseases that have infested our orchards.

Our progressive fruit growers understand full well the importance of raising apples that are clean, attractive and free from insect injury and disease. Our State College, agricultural schools and extension services in our different counties have given much attention and valuable assistance to our fruit farmers in the production of high quality apples. Each year the fruit growers strive with additional effort to stamp out the insects and diseases that are persistent in their yearly attacks on our orchards.

The apple industry, however, is handicapped in certain districts by the presence of neglected orchards or small orchards in the hands of men who are not familiar with the problems of insect control. It is our purpose to study these problems more closely and co-operate with the progressive fruit growers in a plan that will bring about a better control of those orchards that now offer a breeding place for destructive apple pests. We anticipate no great difficulty in impressing upon those who are at fault in neglecting their orchards the importance of control measures in combating insect enemies that spread from the neglected orchard to the clean orchard and cause great financial loss to fruit growers who have spent large amounts in trying to produce clean fruit.

Our fruit growers will find it to their advantage to concentrate further on clean fruit, and the Department of Agriculture will make an additional effort to place a premium on good grading and packing and to impress upon the owners of neglected orchards that there is no place for wormy or diseased apples on our markets. If failure to take necessary control measures brings about a crop of inferior grade fruit, the place for this fruit is not on the open market, but in the cider mill or other place for manufacturing by-products of apples.

INSPECTION OF EGGS

Two years ago the Massachusetts Legislature passed a fresh egg law. Before that time we had no definition of a fresh egg. Now the requirements are definitely set forth and if an egg is sold as fresh, it must meet the requirements.

Other New England States have similar legislation, and I might suggest that all New England States should get together on uniform legislation relating to the sale and distribution of fresh eggs.

Our inspectors are visiting some 15,000 stores during the course of a year and inspecting the fresh eggs. Some places are inspected several times during the year. Our first inspections indicated that many eggs of poor quality were sold as fresh, but today we are convinced that a big improvement has been made.

Consumers are entitled to quality eggs when they ask for fresh eggs, and pay the price. Local eggs at present prices constitute one of the most economi-

cal food products on the market and we are all interested in an increased consumption. I might say that the sale of fresh eggs has increased greatly during the past five years, but I feel very strongly that more local eggs should find their way to our local markets.

Our egg auctions in Brockton and Springfield are doing a splendid job. We can depend upon the grade marks on their containers, and the farmers who are supplying the auctions with fresh eggs are receiving the top price. There again, all New England States might get together behind a federation of state-supervised egg auctions that could work together. An adequate supply of high quality eggs should be available to every large city in New England and the grade designations should be uniform. We should be in a position to move our local eggs quickly when and where they are needed. We should be able to guarantee to chain stores and other large purchasers a plentiful supply of eggs that will meet the uniform requirements of fresh eggs in our respective states.

MARKET NEWS

Regular service has been maintained throughout the year from Boston, Worcester and Springfield. Daily reports issued from these offices have received wide distribution through mail, radio and the press.

The Special Apple Market Report, covering all Massachusetts markets and principal markets outside Massachusetts, where fruit from this state is sold, has been issued regularly during the apple season. A feature of this service has been a further extension of the cold storage reports to cover the unusually long cold storage season resulting from the heavy crop of 1937.

Retail market price information was gathered weekly in Springfield, Worcester and Boston. For the latter city the retail price reports are issued regularly, headed by a brief paragraph calling attention to products in season, plentiful and low priced.

INSPECTIONS, SURVEYS, AND DISPLAYS

Apple Inspection

Inspectors of this division have covered all the principal markets and shipping points during the season in the enforcement of the apple grading law. In addition to their regular duties, inspectors have performed educational work in assisting and advising growers regarding packing and handling of the fruit.

The co-operative agreement between this department and the United States Department of Agriculture has continued in effect during the past year. Our inspectors, under federal license in accordance with the agreement, have carried on certification work for shipments of Massachusetts apples into export and other market channels.

Surplus Apple Inspection

During the fall this division was called upon to assist in the emergency created by the surplus apple crop, the largest in many years. Because of this surplus a purchasing organization was set up by the Federal Surplus Commodities Corporation to buy certain grades of Massachusetts apples for distribution through welfare centers. Inasmuch as all these shipments required a regular federal-state certificate before acceptance by the Corporation, it was necessary for our inspectors to take over this extra work. Up to the close of the fiscal year about 65,000 bushels of Massachusetts apples had been handled in this manner.

Apple Displays

Apple advertising displays were held in Boston at the North and South Stations, and at the Christmas Foods Exposition in Mechanics Building, and in Springfield and Fall River. These included attractive displays, featured by the use of a large revolving apple as a centerpiece. A major attraction of these exhibits was the free distribution of apples and apple products, including cider and apple sauce. As a further effort to attract the maximum amount

of attention to these displays, a loud speaker system was employed, with talks explaining the food value of apples and the advantage of using the Massachusetts product. In staging these displays we were greatly indebted to the railroad companies and other agencies who allowed use of their buildings and to the fruit growers of the state who contributed about 800 bushels of apples for distribution to the public.

Squash Survey

At the request of the Boston Market Gardeners Association this division conducted a survey of acreage and forecast of production of winter squash in eastern Massachusetts. The survey was made by two trained market garden men who visited all principal squash growing sections. A report on this survey was issued at harvest time in order to give growers information for their guidance in deciding whether to sell their crop at that time or to store for later market.

Consumer Information

That consumption is the ultimate aim and purpose of all production—farm and factory—has become more and more generally recognized in recent years and acknowledged by agricultural producers. The Division of Markets has met the increasing demand for consumer information by means of special news write-ups, exhibits, radio broadcasts, and talks to students, institution buyers, women's clubs, WPA groups and other organizations. Much of this phase of the work has been made more effective by the friendly co-operation of other agencies—state departments, especially Public Health and Education, chain and independent market organizations, the State Federation of Women's Clubs, household editors of newspapers, home program broadcasters.

"Fresh Food Facts" market news written especially for guidance of consumers was continued as a regular weekly release and made available for newspapers and the general public.

Consumer marketing exhibits during the year included one set up with help of the Department of Public Health,—“Good Living for Massachusetts Families”. Some exhibits explained grades and laws directly concerning consumers, as the Massachusetts Native Fancy Grade turkeys and the fresh egg law.

Market news broadcasts for consumers were prepared and given throughout the year and information supplied for other consumer radio programs.

Statistical Data

While not published for general distribution, the amounts and sources of the principal foodstuffs coming into Boston were compiled and tabulated and thus made available for office reference. This data ordinarily published annually under title “Receipts and Sources of Boston Food Supply” gives the basis for studies and talks and is used for various purposes by producers, distributors, transportation agencies and research workers.

The detailed summary of weekly receipts and prices of important local products trucked into Boston market, prepared especially for the guidance of market gardeners in crop planning, was published as usual. The daily Farmers' Market Report provides basis for this summary.

Onion Inspection

Two inspectors were stationed in the Connecticut Valley during the early onion harvest to certify shipments for growers. Most of the demand for this service was concentrated in the first few weeks of the crop season. Because of crop conditions a regular service was not necessary through the entire season.

COLLECTION OF SEED SAMPLES

The Department of Agriculture has been collecting official seed samples from the wholesale and retail seed dealers in Massachusetts for the past several years and we know that many dealers have good seeds. We know that the farmer can obtain high quality seed if he has that definite purpose in mind. The seed law in Massachusetts requires that every container of agricultural

seeds shall have affixed thereto in a conspicuous place information relating to the purity of the seed, the germination of the seed, the weed content and the noxious weed content. Vegetable seeds are required by law to be labeled with information relating to the kind of seed and variety, and the name and address of the person selling the seed must be indicated on the container.

The Department of Agriculture has submitted an amendment to the present seed law which is now before the legislature calling for information relative to the germination of all vegetable seeds sold on our Massachusetts markets. We feel that the farmer and the backyard gardener is entitled to know something about the seed that he buys. The farmer depends upon his crops for his livelihood and the backyard gardener expects to reduce the family budget during the summer months by using farm products from his own garden. Both of these classes work long hours in taking proper care of their garden projects, and they do it cheerfully and willingly with fond hope of a bountiful harvest foremost in mind. The best advice that we can give to our farmer friends and to all others who are purchasing seeds is to watch the label that is on the seed container and read it carefully. We have every reason to feel that if the information on the seed container is studied carefully that much of the poor seed that is now used would never be purchased. It seems quite necessary that we emphasize the fact that the price factor is not the most important consideration that must be given to seeds. To be true, it is possible to buy low-priced seeds, and for the most part we get what we pay for. It often becomes necessary when seeds of low germination are planted to purchase additional seeds and replant the entire garden. This method of farming is costly and is the result of careless management and lack of foresight.

REPORT OF THE DIVISION OF PLANT PEST CONTROL

The year 1937 proved to be as difficult for the nurserymen as any over a long period. One of the most serious pests that we have to contend with in eastern Massachusetts is the gypsy moth, and this year this insect was with us in large numbers. Thousands of acres of woodland were stripped through the ravages of this pest. Many of our Massachusetts nurseries are located close to woodlands and naturally the gypsy moths in some instances swarmed into the nurseries. We have tried to maintain a pest-free belt around these nurseries, in order to assist the nurserymen in keeping their stock clean, but this year the gypsies were prevalent in such large numbers, that this belt was not 100% effective. In order for us to maintain the standard that we have had in past years, and to uphold the value of our certificates, it was necessary that all nurseries be cleaned of gypsy egg masses before certificates could be granted. This necessitated in carrying a force of inspectors well into October.

We are attempting through the cooperation of the WPA office and the State Department of Conservation, to carry on a control program whereby all oak and birch trees, together with old apple trees and brush, be cleaned out for a distance of 300 feet from all growing nursery stock. If this can be accomplished, it is felt that the possibility of a serious reinfestation of the gypsy moth would be greatly reduced.

An inspection during the summer for scales, borers, and other insects pests showed the nurseries to be in good condition. Very little stock was infested to such a degree that it was necessary to be quarantined. A special crew was maintained to inspect the stock for Japanese Beetles, and only one nursery was found infested with this pest.

The division cooperated with the United States Department of Agriculture in inspecting for Japanese Beetles around the nurseries, and here again the conditions were found to be satisfactory. This insect is probably established in nearly every city and town in the Commonwealth, being especially numerous in the city of Springfield where the infestation was first discovered. Considerable trapping and treating of the soil with arsenate of lead is being done in that city in an effort to keep the beetle in check. At this time it can be said that the Japanese Beetle is not present in large enough numbers to cause any economic damage. A few infections of white pine blister rust were found in the

nurseries, but infected pines seem to be on the decrease and the situation is not considered serious. In nurseries where there is a considerable number of five-leaved pines being grown a Ribes-free area is maintained for a distance of 1500 feet from the pines.

The Division inspected and certified 351 nurseries and issued 526 agent's licenses.

It was brought to the attention of this division that an infestation of Earwigs existed in Bristol County. This insect has been present in Rhode Island for several years, and is particularly annoying as a household pest. Trapping and the use of poison bait is recommended for its control.

No systematic scouting was carried on for the Dutch Elm Disease, but a large number of inspections were made at the request of owners of elm trees which appeared to be diseased. Samples from these trees were taken and diagnoses made of them at the Massachusetts Experiment station. In all cases they proved to be affected with something other than the Dutch Elm Disease. Massachusetts is still outside of the infected area. The nearest point that this disease has been found is at Old Lyme, Connecticut.

The European corn borer control was conducted under the same program we have practiced the last few years; namely, by having a corps of inspectors in the field early in December who report cases where corn stubble has not been disposed of. Over 1,000 violations were listed and the guilty parties summonsed to hearings. The insect seems to have been more serious in the vicinity of the Connecticut Valley this year than in previous seasons, but the infestation throughout the State has changed very little. There is some agitation among the farmers as to whether or not the corn borer control is worthwhile, especially as many of them are attempting to carry out a soil conservation program. The final solution of this will be whether the corn borer causes greater damage to the corn than the soil erosion causes to the farm.

Through the availability of Federal emergency relief appropriations, funds were allotted to the Bureau of Entomology and Plant Quarantine of the United States Department of Agriculture for expenditure on White Pine Blister Rust Control work in Massachusetts, in co-operation with this Division. From January through April, and again from October through December, workers were engaged in the preparation of field maps showing the location and extent of land areas where white pines need protection from blister rust. Examination was made of 542,600 acres and control areas comprising 176,800 acres were designated. In addition, during the same periods 12,600 blister rust cankers were pruned from 84,000 white pines in plantations growing on publicly-owned lands. During the period from May through September, time was devoted to the eradication of currant and gooseberry bushes—the alternate host plants of the blister rust disease—in white pine areas and in the environs of three pine-growing nurseries. In this work, approximately 856,500 wild and 1,100 cultivated currant and gooseberry bushes were cleared from nearly 57,000 acres of land. The task of completely eliminating the European Black Currant from cultivation throughout the Commonwealth, because of its unusual susceptibility to blister rust, was definitely completed during the summer field season. During this final clean up work, 888 black currant plants were eradicated.

There were a large number of towns in Massachusetts where the apiaries had not been inspected for several years, and it was thought advisable to make an examination of these. The inspection showed that they were in good condition, and because of the few colonies, it is hoped that this inspection will be all that is necessary for several seasons. The rest of the time was spent inspecting apiaries where the fruit growers have made it a practice of bringing in package bees from southern States. The results of this year's inspection did not disclose any great amount of foulbrood, but did show that a systematic inspection should be made each year, starting in May, in order that those sections of the State where bees are kept in any number can be examined every second year.

REPORT OF THE DIVISION OF RECLAMATION, SOIL SURVEY AND FAIRS

On April 26, 1937, Mr. George J. Moran severed his connections with the Department of Agriculture and Mr. A. W. Lombard was appointed by the Commissioner as Acting Director of the Division. On May 14 Mr. Robert F. Cross of Osterville was appointed Director and has been in charge of the work of the Division since that date.

AGRICULTURAL FAIRS

The agricultural fairs were most successful in 1937. The total attendance at fairs and shows receiving an allotment of State prize money, was 306,803, an increase of 81,000 over the previous year. Agricultural exhibits also showed an increase, the total being 78,512. Weather and business conditions were the two principal causes for the increase mentioned. Better advertising and publicity was also a contributing factor in bringing about this result. The Department sent out 2609 checks to prize winners and in addition awarded 450 medals, ribbons and special trophies for special meritorious exhibits. These awards were made through 110 different agricultural associations, societies and organizations holding fairs and shows. Prize money allotments were made to 125 organizations but for various reasons 15 of this number failed to hold a show during the year.

The Eastern States Exposition and the Brockton Fair are not included in the statistical summary, as neither one of these fairs receive an allotment of State prize money. They do, however, both have a State building on their grounds, descriptions of the exhibit in which is covered under the head of "Special Exhibitions". All fairs were inspected and records kept of the number of exhibits, attendance, etc. The Department, through this division, cooperated with not only the 125 fairs making application for prize money but with many other groups by furnishing exhibit material, advice and special service.

Speakers have been furnished for groups, luncheon meetings, granges, service clubs and the like and the division has assisted fairs in arranging premium lists, preparing budgets and in the arrangement and layout of exhibition halls.

A monthly fairs news letter has been sent out regularly and the division has prepared copy for same and edited the publication. The rules and regulations of the Department governing the allotment of State prize money have been revised and as a result of new legislation the Department is allowed to offer prizes for and in aid of the elimination and suppression of insect pests (Sec. 1, Chapter 415, Acts of 1937) under Chapter 128, Section 2f of the General Laws.

The division has also assisted in fair surveys covering attendance, types of people attending agricultural fairs and the exhibits in which they are the most interested, standard classifications have also been prepared and a study of agricultural and educational exhibits has been made with a view of improving them and increasing their value to agriculture.

SPECIAL EXHIBITIONS

The two outstanding exhibits made by the Department each year are in the Massachusetts Building on the Eastern States Exposition Grounds, West Springfield and in the Massachusetts Building on the Brockton Fair Grounds, Brockton.

The exhibit at Springfield this year was a presentation of the agriculture of Massachusetts under eight major headings—fruits, vegetables, dairy products and animal husbandry, poultry and eggs, tobacco, onions and potatoes, cranberries, flowers and nursery stock. Statistical information was also presented giving the value of each crop and its importance. The set-up of the exhibit was the most artistic and beautiful which the Department has ever attempted. Publications were displayed and requests received for them. The Massachusetts State College cooperated with the Department in this exhibit

and students from the College worked on its preparation and installation. The Williamsburg Gardens idea was employed in the design and layout of the booths and backgrounds. The Department of Conservation occupied the two wings of the Building and in one showed an exhibit of fish and game and in the other featured forestry and the work of the Department in connection with forest activities.

In the Brockton Building the exhibit covered several activities and the Department was assisted by the Cape Cod Horticultural Society, the Boston Market Gardeners' Association, the Massachusetts Development and Industrial Commission, the Massachusetts State Planning Board and the Massachusetts Department of Conservation.

The front of the building showed on one side a very fine landscape scene with a brook containing trout in the foreground and hills and valleys in the rear. This exhibit was put on by the Department of Conservation. On the other side the Cape Cod Horticultural Society installed a garden layout which was most artistic and showed one method of treating a home garden.

In the rear the Massachusetts Development and Industrial Commission, in cooperation with various manufacturers, showed in attractive display cases many of the products made in the State and gave statistical and other information in regard to Massachusetts as an industrial state.

The State Planning Board showed a very comprehensive exhibit on planning from a State, Regional and City basis. The maps, charts, graphs, etc., displayed gave a very clear picture of what planning is based on and of the results to be obtained.

The Boston Market Gardeners' Association put on a wonderful display of vegetables grown in Massachusetts and an educational exhibit showing varieties and their characteristics.

The Department also made special educational exhibits at the Great Barrington, and Cummington Fairs and in co-operation with the Divisions of Markets and Dairying and Animal Husbandry made exhibits in the North and South Stations, Boston, the Union Station, Springfield and at the Food Fair in Mechanics Building Boston, also in Fall River. A special booth has been constructed to be used in connection with promotion displays made by the Department.

The demand for educational exhibits is constantly increasing and provisions will have to be made in the immediate future to take adequate care of these requests. The calls upon the division for assistance in one form or another have also shown an upswing and these requests have been met by the employees of the division.

YOUNG PEOPLES' WORK

The Division has cooperated with the 4-H Clubs and with the vocational agricultural schools and Future Farmers of America. Assistance has been given to the Massachusetts 4H Club Camp at the Massachusetts State College, Amherst, and prizes offered to boys and girls who exhibited at fairs. Special trophies, medallions and ribbons have been offered as awards in judging and other contests.

The Vocational School Students have been helped in judging, speaking and other contests and awards have been made for meritorious work by these boys and girls. The Future Farmers of America have also received prize money for exhibits and contests.

The work with young people is very important and the Department has sent checks to 928 boys and girls for premiums won by them at fairs in Massachusetts. We believe in offering every encouragement to these young people who are actively engaged in agricultural work.

SOIL SURVEY

A re-survey of the soils of Plymouth, Norfolk, Bristol and Barnstable Counties should be made at the earliest possible time as there are no soil maps and field notes of these counties available for distribution. There is also a

demand for this work as a result of the Soil Conservation program of the United States Department of Agriculture and the additional information which is now made available as a result of the economic studies made in connection with soil survey work. The division is of the opinion that this work should be undertaken in 1939 and that provision should be made to carry out the work in cooperation with the United States Department of Agriculture, Bureau of Chemistry and Soils.

RECLAMATION WORK

The Director of the Division, as a member of the State Reclamation Board, has worked with the Board in connection with its various activities. He has been called upon to advise with local authorities on reclamation and drainage projects in connection with W.P.A. and other local activities along drainage and reclamation lines.

SUMMARY OF PRIZE MONEY ALLOTMENTS AND EXPENDITURES

(13 Agricultural and Horticultural Societies)

Hillside Agricultural Society, \$1,000; Marshfield Agricultural and Horticultural Society, \$1,000; Highland Agricultural Society, \$1,000; Franklin County Agricultural Society, \$2,002; Plymouth County Agricultural Society, \$700; Hampshire, Franklin and Hampden Agricultural Society, \$1,867.05; Union Agricultural and Horticultural Society, \$987.75; Essex County Agricultural Society, \$2,006.80; Littleville Community Fair, \$750.35; Martha's Vineyard Agricultural Society, \$500; Sturbridge Agricultural Association, \$858.75; Barrington Fair Association, \$1,431.25; Acton Agricultural Association, \$450.75; total, \$14,554.70.

(35 Community Fairs)

Acton Junior Fair, \$2.25; Agawam Community Fair, \$75; Ashby Community Fair, \$49.55; Bolton Farmers' Fair, \$50; Bristol-South Plymouth Fair, \$50.25; Cape Cod Horticultural Society, \$250; Chicopee Garden Club, \$15; Dalton Community Fair, \$24.75; East Blackstone Community Fair, \$50; East Bridgewater Community Fair, \$100; Future Farmers of America, \$45; Granville Community Fair, \$85; Groton Junior Fair, \$162.75; Hampden County Boys' and Girls' Club, \$133; Hampden Garden Club, \$12.85; Heath Agricultural Society, \$199.50; Hingham Agricultural and Horticultural Society, \$100; Massachusetts Horticultural Society, \$100; Monson Community Fair, \$100; Montgomery Junior Fair, \$25; Massachusetts State College Horticultural Show, \$18; Natick Community Fair, \$231.65; Norfolk Junior Fair, \$49.50; North Grafton Junior Fair, \$10; Orange Boys' and Girls' Club, \$75; Palmer Fair, \$50; Peabody Garden Club, \$10; Rehoboth Community Fair, \$203.50; Southwick Community Fair, \$125; Springfield Onion Show, \$191; Sterling Farmers Club Fair, \$275.25; United Shoe Machinery Agr. Exhibition, \$93*; Union Agricultural Meeting Fruit Show, \$152.50; Upton Farmers' Club, \$85; Westfield Young People's Agricultural Fair, \$50; total, \$3,249.30.

(57 Grange Fairs)

Abington, \$10; Acton, \$10; Acushnet, \$15; Ashburnham, \$10; Assonet, \$10; Bedford, \$10; Bellingham, \$10; Boxborough, \$10; Brimfield, \$15; Boylston, \$8; Cheshire, \$15; Cochrasset, \$14; Dartmouth, \$10; Dedham, \$20; Dracut, \$10; Dunstable, \$25; Fairhaven, \$20; Granby, \$9; Hilltop, \$15; Holliston, \$10; Leicester, \$15.50; Lexington, \$25; Ludlow, \$20; Lunenburg, \$10.60; Mansfield, \$15; Merrimac, \$15; Needham, \$10; Nemasquet, \$14.50; New Salem, \$14; Norfolk, \$13.25; Northborough, \$15; Palmer, \$14.95; Plainville, \$10; Ponkapoag, \$10; Richmond, \$15; Riverdale, \$25.50; Rochester, \$15; Rockland, \$6.10; Rutland, \$13.50; Seekonk, \$15; Shrewsbury, \$10; Stockbridge, \$20; Sturbridge, \$10; Swansea, \$8; Thrifty, \$14; Townsend, \$14.95; Tyngsboro, \$14.75; Warren, \$35; Westborough, \$10; Westford, \$15; West Newbury, \$14; West Stockbridge, \$14.75; West Wareham, \$9; Wilbraham, \$25; Williamstown, \$20; Wilmington, \$15; Worthington, \$8.25; total, \$806.60.

(9 Poultry and Rabbit Shows)

Boston Poultry Association, \$165; Fitchburg Poultry Fanciers Association,

* Two shows held during fiscal year.

\$68.50; Athol Egg Show, \$9.50; Essex County Poultry Association, \$45.50; Essex County Rabbit Breeders' Association, \$74; New England Poultry Association, Inc., \$250; Athol Poultry and Pet Stock Association, \$170.50; Holyoke Poultry and Rabbit Breeders' Association, \$197; Suburban Rabbit Breeders' Association, \$50; total \$1,030.

SUMMARY OF STATE AGRICULTURAL PRIZE MONEY PAYMENTS

Agricultural and Horticultural Societies	\$14,554.70
Community Fairs and Exhibitions	3,249.30
Grange Fairs	806.60
Poultry and Rabbit Associations	1,030.00
Boys' and Girls' Club Work	1,905.07
Badges, medals, cups, etc.	1,041.34
Special exhibitions	6,131.91
Miscellaneous payments	350.33
	<hr/>
	\$29,069.25

Financial Statement Verified.

GEO. E. MURPHY, *Comptroller.*

Approved.

REPORT OF THE STATE RECLAMATION BOARD

During the year 1937 the Reclamation Board has supervised the usual maintenance work on the mosquito control ditches in the fifty-one cities and towns of the Commonwealth under the provisions of Section 4, Chapter 112 of the Acts of 1931.

Total number of men employed on maintenance work	197
Total maintenance expenditures	\$28,758.38*
The expenditures on maintenance were spent from appropriations made for this purpose by the cities and towns concerned.	

In addition to the above, work has been supervised on the following mosquito control projects: Cape Cod, Nantucket, and Belmont.

Total number of men employed on these projects	44
Total expenditures	\$37,639.47*

(* Verified and approved by George E. Murphy, Comptroller.)

The Board has also acted as sponsor for the Department of Agriculture for certain WPA projects, i.e.: Bristol County-wide, Plymouth County-wide; two projects for Norfolk County-wide, City of Brockton, Nantucket County, Town of Newbury, and Town of Rowley.

There have also been approved under the sponsorship of the Board, WPA projects in Pittsfield, Sunderland, Dukes County, Gloucester, Ipswich, and Essex in which operations have not, as yet, started. On the projects which have been in operation there have been upwards of four hundred men employed, all paid from Federal funds.

Field Agents of the Board, Messrs. Wales, Casey, and Shockley, in addition to checking on the projects listed above, have laid out projects sponsored by various towns and cities. These field agents have not only assisted selectmen and mayors in preparing project proposals, but have also furnished periodic supervision of such projects as have been approved and operated. Towns and cities so assisted were:

East Longmeadow	Mattapoisett	Oak Bluffs
Longmeadow	Raynham	Braintree
Sunderland	Randolph	Weymouth
West Springfield	Pittsfield	Boston
Carver	Salisbury	Wrentham
Wareham	Edgartown	Lexington.
Dartmouth	Tisbury	

At the request of the selectmen there have been made surveys for the following towns with recommendations and suggestions to assist in reducing breeding areas:—Needham, Chelmsford, Weston, Millville, Norton, Natick, Wellesley, Marion.

In two towns quite extensive mosquito control operations have been carried on under the supervision of the Board where all appropriations were made by private contributions. In the town of Marion, Plymouth County, more than \$2,500 was spent on labor for effective work in maintaining ditches previously dug by the town and in draining areas which had not been previously ditched. This sum of money was contributed by private owners and twelve men were employed on the work.

In the town of Newbury an area in the vicinity of Kent's Island was found to be breeding heavily and funds were contributed by Mr. J. P. Marquand, owner of Kent's Island; five men were thus employed for a period of about two months at an expenditure of over \$1,000 provided by Mr. Marquand.

All in all, under the supervision of the Board during the past year there has been a total of 658 men given employment on mosquito control work in addition to numerous WPA workers for towns where the Board only acted in an advisory capacity.

The Commonwealth of Massachusetts

ANNUAL REPORT

OF THE

Commissioner of Agriculture

FOR THE

Year Ending November 30, 1938



The Commonwealth of Massachusetts

DEPARTMENT OF AGRICULTURE

To the Honorable Senate and House of Representatives:

In compliance with the provisions of Chapter 128 of the General Laws, I am herewith making my annual report for the year ending November 30, 1938, for the Department of Agriculture.

Respectfully submitted,

WILLIAM CASEY, *Commissioner*.

PERSONNEL OF THE DEPARTMENT

COMMISSIONER OF AGRICULTURE—WILLIAM CASEY, SPENCER.

Executive Secretary to the Commissioner—MICHAEL J. CARROLL.

ADVISORY BOARD APPOINTED BY THE GOVERNOR AND COUNCIL

JOHN BURSLEY, BARNSTABLE (WEST), Term expires November 30, 1938.

JAMES O'BRIEN, LEE, Term expires November 30, 1940.

JOHN T. GOGGIN, SEEKONK, Term expires November 30, 1940.

LOUIS A. RIORDAN, NORTH ABINGTON, Term expires November 30, 1938.

GEORGE A. WELLS, WORCESTER, Term expires November 30, 1939.

DIVISIONS AND ORGANIZATIONS

LIVESTOCK DISEASE CONTROL—*Director*, CHARLES F. RIORDAN, SHARON.

DAIRYING AND ANIMAL HUSBANDRY—*Director*, LESTER T. TOMPKINS, ESSEX

MARKETS—*Director*, WILLIAM F. MADDEN, BOSTON.

PLANT PEST CONTROL—*Director*, R. HAROLD ALLEN, TAUNTON.

RECLAMATION, SOIL SURVEY AND FAIRS—*Director*, ROBERT F. CROSS, OSTERVILLE;

Assistant Director, A. W. LOMBARD, ARLINGTON.

AGRICULTURIST—DANIEL J. CURRAN, MARLBOROUGH.

STATE RECLAMATION BOARD

Chairman, DANIEL J. CURRAN, MARLBOROUGH.

EDWARD WRIGHT, DEDHAM.

ROBERT F. CROSS, OSTERVILLE.

Secretary, GEORGE R. STRATTON, HOPKINGTON.

REPORT OF THE COMMISSIONER

SEPTEMBER HURRICANE AND FLOODS

The year 1938 will long be remembered by our farmers for the disastrous summer floods of July and September and the devastating hurricane of September 21. It is not difficult to imagine the dismay and heartache of individual farmers who examined the wreckage of homes and buildings, surveyed the loss and damage to farm crops on the morning of September 22, with the winter months ahead, incomes erased and a long uphill struggle before them in rehabilitating waste and wreckage. The courage, however, of our Massachusetts farmers has been tested before and never found wanting. There was a big job to be done and watchful waiting would not accomplish the task.

Our fruit growers suffered severe losses. All of the late apples were on the ground and had to be packed and marketed as soon as possible. The Federal Government, through its Surplus Commodities Corporation, gave some measure of relief by purchasing 321,410 bushels of the hurricane apples at 75 cents a box, which included a 15 cent charge for the box. Shipping points were established at convenient loading railroad stations and more than 484 carloads were shipped outside of Massachusetts to large consuming centers for relief purposes. A few carloads of selected drops were sent to canning factories in Massachusetts, but our local markets were at no time glutted with shipments of these apples that were valued at approximately \$241,000.

In many of our larger orchards thousands of trees were uprooted or bent over by the terrific fury of the wind and needless to say our farmers immediately responded to the task of saving as many trees as possible. It was estimated that the cost of pulling back the tree and resetting it firmly in the ground would be from \$3 to \$5 and the expense to some fruit growers for this single item amounted to several thousand dollars. This work had to be done before the winter freeze, and for the most part it has been well done at this time. The loss of apples was partly compensated by the financial

assistance of the Federal Government resulting from the purchase of wind drops, but the damage to the trees will be felt for the next twenty-five years. Many of the trees that were torn from the ground were twenty to twenty-five years of age and the most profitable in the orchards. New trees may be planted in the coming spring and will remain for years to come as silent reminders of the violent gale of September 21, 1938.

Our open front poultry houses faced to the south and offered little resistance to the onrushing wind which lifted the roofs and deposited many of them hundreds of yards away from the remaining remnants of once sound, substantial henhouses. Thousands of high-producing pullets were scattered by the wind and many of them lost. It has been estimated that in Massachusetts poultrymen suffered one million dollars damage. The rebuilding program on our poultry farms is well under way. Old buildings have been repaired, and new buildings are in the process of construction; and the new ones will be of sturdier construction than those that have gone with the wind.

Out in the Connecticut Valley, the damage resulted not only from a wind of gale proportions, but also from rushing, rising turbulent waters which overflowed the banks of the Connecticut River and carried away farm crops and livestock, and in some places left a residue of worthless sand on the fertile lands. In the town of Hatfield, 92 tobacco barns were blown into masses of wreckage. Many of these tobacco sheds contained the entire year's production of the farm, and the resulting debris was worthless. Most of the wreckage has been cleared away and some new sheds are in the process of construction. Others will never be rebuilt, and on certain farms adjustments will be made in the acreage of tobacco to be planted.

Our dairy farmers were not forgotten by the hurricane. Many of the towering silos that dotted our hillsides were victims of the gale, and the loss of these storage facilities for the dairy farmer's ensilage will handicap farming operations during the winter months. Many of our older dairy barns did not survive the fatal wind and in a few instances valuable dairy livestock was crushed in the wreckage. Barns in all sections of the hurricane belt were stripped of shingles and had to be repaired before winter snows and storms caused greater damage. This work has been done, and new barns are being built to replace those destroyed.

PRODUCTION OF STAPLE CROPS

As a result of lower acreage planting and unfavorable growing conditions, many of our staple crops dropped in production and production value.

Our corn crop showed a decrease of about 160,000 bushels and the value dropped from \$1,410,000 to \$1,052,000. There has been a noticeable increase in potato acreage during the past ten years but 1938 showed a cut of 1000 acres in production and a money loss to farmers of approximately \$70,000.

Tobacco on about the same number of acres took a drop in production from 8,262,000 pounds to 6,702,000 pounds, and the production value dropped from \$2,197,000 to \$1,419,000. It should be remembered that thousands of pounds of tobacco were destroyed during the hurricane when tobacco barns in all sections of the Connecticut Valley were demolished and the drying tobacco was crushed and destroyed.

Cranberry production took a drop in 1938 but we cannot attribute this to the hurricane. Other climatic conditions, including serious frosts during the late spring, were responsible factors in cutting the 1937 production of 565,000 barrels to 300,000 in 1938. The price, as might be expected for a short crop, was quite favorable and the estimated production value was \$3,150,000.

Our acreage of onions dropped from 3,550 in 1937 to 3,050 in 1938 and total production increased from 639,000 to 732,000 sacks in 1938. However, the quality of our 1938 onion was not as good as other years, due to excessive rain during the growing season, and the production value declined.

During the past ten years our poultrymen have given careful attention to breeding and the improvement of flock management. Egg production has increased from 222,000,000 eggs in 1926 to more than 400,000,000 eggs in 1938, and this increase is due in no small measure to the time and attention that has been given to R.O.P. work by the Department of Agriculture and a large number of progressive poultry raisers. The value of our chickens in 1938 was \$3,658,000 and when this figure is added to the value of our eggs there is indeed a very substantial value to our poultry industry. The progress of the turkey growers has been comparable. The value of turkeys raised on Massachusetts farms in 1929 was \$361,000 and in 1938 the production value was \$939,000. Our turkey industry is fast approaching the \$1,000,000 mark and this notable success is due primarily to the courage and foresight of a small group that has consistently fought disease and developed modern methods in raising turkeys in Massachusetts.

ROADSIDE MARKETS

The marketing of farm products by way of the roadside stand in Massachusetts becomes a very important phase of our agricultural activity. A group of our prominent market gardeners and other farmers have associated themselves together into an association of roadside market operators and the Department of Agriculture upon request established rules and regulations for the orderly management of these roadside stands. The Department also designed an attractive sign that is leased to certain roadside markets that comply with the rules and regulations. The sign was approved only on stands where homegrown produce is featured. The Department sign is a neat, yellow shield which can readily be seen at a distance by automobile drivers. In the middle of this sign is the New England Quality Farm Products Label, under which are the following words—"under supervision of the Massachusetts Department of Agriculture." Across the top of the sign in large letters are the following four words "Bay State Farm Products." The Department makes periodic inspections of these stands in order to see that the operators are living up to the regulations. In order for a roadside stand operator to retain the official sign, he must keep the stand clean and neat; the produce must be fresh and of good quality; the produce displayed must be of the same quality at the bottom of the container as at the top. In other words, a box of berries should not be overfaced with the best quality, or the poor quality camouflaged on the bottom of the package. In addition to the above requisites, there must be adequate parking space, and the prices must be comparatively reasonable. Produce purchased from outside the state, or raised on another's farm, should not be represented as having been grown by the operator.

CO-OPERATION WITH AGRICULTURAL FAIRS

The Department of Agriculture has consistently followed a course closely co-operating with the agricultural fairs and in sponsoring developments that would bring about a more prosperous agriculture in the Commonwealth. Massachusetts is a great industrial state and it will always be the purpose of its leaders to expand our industrial activities. This expansion means bigger and better markets for our farmers who are diligently applying themselves to the task of producing quality farm products to meet the consumer demand. It was with the thought in mind of co-operating more effectively with some of our larger fairs that a State building was erected on exposition grounds at Springfield and on the fair grounds at Brockton, wherein agricultural and other exhibits could be displayed for the purpose of emphasizing those phases of modern agriculture and allied industries that could be adapted most effectively to a general plan of agricultural progress, and I am satisfied that the original expense and the cost of maintenance of these buildings was a profitable investment. Everywhere throughout the spacious fair grounds at Springfield and Brockton one can observe the influence which these two fairs have had upon our farming population. However, I do not intend to limit that influence to these two larger fairs, because all our agricultural fairs, large and small, have been instrumental in stimulating a greater degree of achievement among our agricultural groups.

Each succeeding year brings a notable improvement in the quality of our farm products. Every new year brings livestock of superior quality to compete in this arena for special recognition. In every branch of endeavor on our farms there is a definite trend toward the production of better grade farm products. A high grade product brings a better price, and a more prosperous agriculture results. Our farm homes show an improved appearance, more attractive houses, better facilities, all of which combine to give our rural population the advantages they rightfully deserve as a reward for their greater effort and greater application of the principles of scientific agriculture.

It has always been of special interest to observe at these expositions the accomplishments of our 4-H Clubs and Junior Achievement Leagues. These boys and girls have worked faithfully and have demonstrated in their tender years a capacity for planning their work carefully and carrying out their plans to a successful conclusion. They have evidenced a practical and intelligent understanding of farm problems and the continuing success of our Massachusetts agriculture appears safe in their hands.

AGRICULTURAL LEGISLATION

During the year 1938 several rather important legislative bills were passed by our General Court and received the approval of His Excellency the Governor. Massachusetts has expended, during the past 16 years, more than \$4,000,000 in payments as indemnity to cattle owners in the eradication and control of bovine tuberculosis; and a health problem which is receiving serious consideration at this time is the control of Bangs disease. New legislation provides for the vaccination of cattle not less than

four nor more than eight months of age, and the work is done under rules and regulations established by the Department of Agriculture. A fee of fifty cents is charged for each animal vaccinated.

During the past several years considerable study has been given to the matter of selling eggs by size, and the reports that were received from different agricultural groups indicated that an amendment to existing laws relating to the sale of eggs was quite necessary. Apparently in certain sections of the state eggs were misrepresented as to size, and the consumer was placed at a serious disadvantage in purchasing eggs without definite information as to the approximate weight of a dozen eggs. With that thought in mind, the poultry associations recommended that eggs be divided into four sizes, namely: large, medium, pullets, and pewee; and that definite arrangements be made relative to the sale of eggs under these classifications. These requirements have been made a matter of law, and it is now necessary for all persons selling eggs to mark on the container the weight designation. The provisions of this law do not apply to cartons or other containers that are conspicuously marked "not sized."

Inspectors from this department are enforcing the provisions of this new law. These inspectors, employed primarily to carry out the provisions of the fresh egg law, are now doing double duty inasmuch as it is necessary for them to insist upon full compliance with this new legislation, and no additional inspectors have been employed for this purpose.

Considerable interest has been shown by many farmers, and by many persons with small acreage, not classified as farmers in the development of dairy goats; and the department has given every possible assistance to this development. The Goat Breeders' Association and many individual breeders have requested at various times that provisions be made in our laws for the same recognition to goats as now received by other livestock. Our laws have therefore been amended so that the goat breeders now have an opportunity to compete for prizes, and we can expect many more excellent exhibits at our major fairs.

Investigation of certain fees that were being charged to Massachusetts nurserymen indicated that several states were charging a substantial fee to Massachusetts nurserymen, and the nursery stock of these particular states was coming into our State without an inspection fee. It was thought advisable that we should have legislation that would permit the department to enter into reciprocal agreements with the various states and to charge a fee to outside nurserymen from states that were charging a fee to our nurserymen; and to admit nursery stock free from growers in states that were not charging a fee to Massachusetts nurserymen. Accordingly, the department sponsored legislation that would provide for reciprocal agreements with other states under which nursery stock could enter this state under conditions similar to the entrance of our nursery stock into said states. In most cases, our nursery stock is now permitted to enter without a fee, and it has not been our practice to make any charge for nursery stock entering Massachusetts. We have confidence that a few states that are now charging an inspection fee to out-of-state nurseries eventually will find it convenient to rescind any law or regulation dealing with this matter.

Amendments were made to our seed law in the 1938 session of the Legislature. The more important provisions deal with the requirement that percentages of germination on vegetable seeds be indicated on each container, provided such vegetable seed germination is less than the standard germination test as determined by the director of the Massachusetts Agricultural Experiment Station, and approved by the Commissioner of Agriculture.

Provisions were also made to include flower seeds under the regulatory work of the seed law, and this amendment gives our seed laboratory an opportunity to study the quality of flower seeds that are being sold in Massachusetts and to issue a report that will give the users of flower seeds all the facts relating to such quality. Under the new provisions of the seed law the Commissioner of Agriculture has authority to withhold from sale seeds that are not properly labeled or which do not conform to the statements made upon attached tags or labels. This is an important change in the seed law and will assist materially in the program of the department to exact a better compliance with the provisions of the seed law.

REPORT OF THE DIVISION OF DAIRYING AND ANIMAL HUSBANDRY

INSPECTION OF BARNs AND DAIRIES

Under authority of Chapter 305, Acts of 1932, the supervision of the inspection of all dairy farms supplying milk for our markets has continued to occupy the major part of the activities of the division. This type of work occupies the full time of eight inspectors, who visit and inspect an average of about 1650 farms each year. Many of

these farms do not pass inspection on first visit, due to one or more of several reasons, such as, lack of proper facilities for the production of a clean, wholesome supply of milk consistently throughout the year; or certain other things, such as, poor stable floors, windows lacking in stable or milk room, cooling tank or the like in need of repairing, prior to approval, etc. Thus it is necessary to make reinspection on such farms. Should the second inspection reveal a lack of definite cooperation on the part of the dairyman, or a still unpassable place, a hearing is called by the director with these dilatory individuals, and instructions are given relative to causing conditions on these farms to be made satisfactory. Such a process has resulted in the following record for the past year:

Number of farms inspected	13,879
Number of reinspections	4,366
Hearings	1,191
Miles traveled in course of inspection	216,000
Other farms inspected by local inspectors — (Approx.)	18,000

Butterfat tests, quality tests, complete sample work, etc.

Babcock tests made of producer samples	4,499
Resazurin test (to determine quality, methods, etc.)	1,808
Reductase test (supplanted largely by resazurin)	51
Lactometer	25
Bacteria	24
Sediments made on producer milk at dealer plants	534
Temperatures taken at small dealer plants	5,821
Dealer's samples condemned	27

Thousands of pounds of milk had to be returned to producer, because of being poorly or inadequately cooled.

The registering of all dairy farms of more than two cows, producing milk for our Massachusetts markets, entails a considerable amount of work. The law states the director shall inspect, or cause each farm to be inspected, at least once annually; that he shall accept the reports of local or municipal inspectors or agents or Boards of Health, and forthwith register each farm. There are approximately 200 persons in the Commonwealth who have been so designated, of which number about 75 inspect from a very few farms to several hundred. The uncertainty of how many some of them will inspect to completion made for the necessity of our knowing when all supplies were inspected and when they should again be inspected, and has made it necessary for us to tabulate, in detail, all records received at our office. Such tabulations have been made by means of punch card records and business tabulating machines. Since the inclusion of this machine tabulation into our system we have been able, over the period covered, to tell the exact number of inspections made by all local and state inspectors; the condition of each dealer's supply; detect any tendency to use milk from unregistered sources; or, in substance, to know the actual condition of our milk supply.

Every possible step is being taken to simplify the work of registering dairies promptly, after the receipt of the approved inspection report and the application. Further simplifications are thought possible, and will be used if found, after careful study, to be practical.

Temperature and quality tests were made in the shipping areas on many thousands of samples of producers' milk, in all parts of the milk shed. These tests revealed, beyond any doubt, the value of the inspection program that has been in use since 1933, showing that program has steadily improved the general methods, and, in turn, the quality of the milk we receive. It was found necessary to return several thousands of pounds of improperly cooled milk last year, which in itself is a direct loss to the producer and behooves him to guard against such losses with good cooling facilities, ample ice, or other cooling mediums, with due regard for losses entailed by frozen milk where poor tanks or air cooling is used.

Many hundreds of rusty pails, broken-seamed pails, rusty cans, improper strainers, etc., were condemned because they were definite hazards to the quality of the milk to be offered for sale.

The resazurin test was used at creameries and dealer's plants to considerable extent during the past year, to determine the keeping quality. This test reveals the use of good or poor methods on the farm where the milk was produced.

ANIMAL HUSBANDRY

This branch of the Division covers a broad field of activity, dealing with all of our farm animals, including a few species that by many might rightfully be classed as animal hobbies, namely, rabbits, guinea pigs, goats, ponies, etc.; while in some instances

there are persons in these fields of activity who are dependent upon their special stock to yield a living income for them, such as many of our goat breeders. These good folk have spent a great deal of time, effort, and money to develop their animals properly, create a market, and build confidence in their branch of our Agriculture. The division has been instrumental in arranging programs of promotion, and in bringing advanced information to them upon several occasions during the past year. Numerous meetings were attended by the director to advise the growers, at their request.

Sheep.—Sheep promotion and rehabilitation has gone on at a steady pace. During the past year 20 persons were started in with new flocks of a fine type and character, which should be a real factor to the further development of this good little animal on our Massachusetts farms. Many of the established breeders of our State have enlarged or extended their flock activities. Two of our fine purebred flocks brought real laurels to our Commonwealth by their winnings at the great International Livestock Exposition at Chicago.

Sheep Demonstration Farm.—This privately owned farm, under contract to the department to serve as a demonstration farm, has very materially helped sheep owners with flock management problems. The owners also have set the new sheep growers up with stock purchased from reliable sources and dispensed to buyers at cost. A demonstration of special methods of drenching, shearing, docking, etc., was held and these methods illustrated to a large group of interested sheep owners, or potential owners.

Sheep programs were arranged where speakers of renown were brought in from other states to bring out the values of proven practices, rotation of supplementary crops, pasture fertilization, and other sound ideas of general value to sheep owners.

The Massachusetts Wool Pool, handling growers' virgin wool for blanket manufacture, continued in its sixteenth year to return a handsome profit to growers who had these quality blankets made from their wool. The pool handled about 11,000 pounds of wool, and had about 1,300 blankets made.

Sheep are splendid animals to have on many of our upland farms that have pasture and buildings for other farm stock, and where such farms can, without a large outlay, include sheep in the farm management program. They should improve the land and help balance the farm budget. There is a decided gain in interest in sheep in Massachusetts right now.

Horses.—The actual numbers of horses undoubtedly lowered in the Commonwealth during the past year, which fact is due, probably, to the influence of the disease known as Equine-Encephalomyelitis, or sleeping sickness, that took a heavy toll by death in that area of the state affected by the disease; and the further inroad made on the uses of horses by machinery. However, in the face of these obviously damaging agencies, the interest in the use of pleasure horses has been on the upturn in our Commonwealth. The importation of work horses for farm and lumbering operations has been as heavy or heavier than in the past few years, there being no more economical form of power for small farms, or rough lumbering conditions. Horses represent a very definite means of securing good, wholesome exercise, health-yielding diversion of free time, while affording a means of consuming home-produced crops, returning needed fertility to our soil, and keeping a friendly, intelligent animal in our industry. Horse breeding, has, at least, held its own in the Commonwealth during the past year.

Beef Cattle.—There continues to be considerable interest on the part of a certain few of our farmers in beef cattle, as a part of their farm operations. Some of these farmers have improved their pastures, culled their animals carefully, and tightened up their belts to get a better profit by means of higher production, by reason of better gains, quicker growth, earlier marketing condition.

New beef herds have been imported into our state, some of very outstanding type and quality. Such herds undoubtedly will furnish many fine 4-H Club calves to be grown and trained by the youngsters whose pride is at the peak during our fair season, when they exhibit their works of artistic Animal Husbandry. Beef cattle offer a medium of using many rough, back country, low-priced farms having abundant pastures, plenty of water, and reasonably fair fences. They require only ordinary shelter from winter or stormy weather, being adaptable to the poor buildings found on many deserted or unworked farms. Beef bulls may be bred to advantage with dairy cows, where the calves are not to be raised, thus increasing the net return on veal.

Dairy or Milk Goats.—This branch of our dairy industry has been advancing very rapidly. The type of animals being bred show a very marked improvement over the goat common to most of us many years ago. The people interested in this animal now are the business man or woman of all walks of life, rather than the tenement dweller of years ago. These people have spent many thousands of dollars to provide the finest type of quarters, up-to-the-minute equipment, and are gravely concerned in producing

the very best quality product possible. To this end numerous meetings have been held, with the division co-operating, to consider ways and means of regulating this interesting, fast growing branch of dairy industry. The goat breeders are concerned with how they may interest the public in the use of their products, which are said to carry nature's remedies for many ailments apparently unyielding to any other treatment. Thus, much time and study is being given this branch of our large dairy industry in assisting the breeders to find their proper market outlets, independent of our present cow milk markets.

FAIRS, AGRICULTURAL MEETINGS, EXPOSITIONS, AND RADIO AND AGRICULTURAL PUBLICATION RELEASES

The attention necessary to the promotional type of work of the division has been as liberal as time and finances would allow. The division furnished the Superintendent and Chairman for horse, sheep, poultry, dairy, beef, and goat classes at several of our larger Fairs, the Eastern States Exposition, and the Union Agricultural Meetings. These shows and meetings were well patronized. The benefit derived from such exhibitions of selected type animals or birds, where their real values are displayed to public attention, in our opinion does much good in fixing type, production, or work qualities to be sought for in the acquiring of such animals by the growers; hence has a lasting benefit on the improvement of the stock produced by the individual growers thereafter.

POULTRY WORK

Poultry Record of Performance:

For this year the Grade known as Massachusetts Record of Performance Pullorum Clean was carried on with very good results. There were 16 poultry plants under the supervision of the Department, and unannounced visits were made to these plants, taking over the trapnesting work for the day, and checking the trapnests for accuracy. In addition, the private advertising of the breeders was checked, and all the birds in special mating pens were inspected and approved before the breeders were allowed to sell pedigreed stock. Records were sent to this office by the breeders on all of their breeding activities, including the trapnest records, reports on the eggs set, chicks hatched, and stock sold.

At various times throughout the year articles were prepared for magazines, explaining the meaning of Record of Performance work in this State, and the results of our R. O. P. breeders were compared with the results of breeders in other states, both in connection with the R. O. P. project and the birds entered at Official Egg Laying Contests. In both cases the records of our R. O. P. breeders were above those of breeders in other states.

A number of state, sectional and national meetings were attended in the interest of our R. O. P. program.

In working with the Breeders Association an R. O. P. circular was prepared and distributed to 7,000 persons in the state and throughout the country generally.

The annual summary of our R. O. P. work was prepared and distributed to poultrymen in this state and to interested persons throughout the country. The following is a brief summary of the results obtained by our R. O. P. breeders for the 1937-38 season:

Summary

Number of birds entered under R. O. P. supervision.....	7,948
Number of birds passed R. O. P. supervision.....	3,991
Average production all birds passing R. O. P. supervision.....	244.47
Average egg weight all birds passing R. O. P. supervision.....	25.75 oz.
Average body weight all birds passing R. O. P. supervision.....	5.99 lbs.
Number of birds in individual pedigree pens.....	2,854

The above records are the best records obtained by our R. O. P. breeders to date, showing consistent improvement under our breeding program.

Poultry Certification.—Under our Massachusetts Certified Pullorum Clean Grade there were 18 breeders having their flocks supervised, with a total of 67,467 birds individually inspected and banded. Each bird was inspected and leg-banded, provided it met the grade requirements for pullorum disease freedom, health and vigor, productive capacity, and reasonable freedom from standard disqualifications. During the hatching season two visits were made to check the size of all hatching eggs set by breeders under this Grade, making sure that the grade requirements were lived up to.

Pullorum Clean Grade.—Under this grade we supervised 177 flocks that applied for and met the requirements for this grade. There were a total of 358,559 birds under this grade. All of these birds passed at least two consecutive 100% pullorum disease free tests. A list of the flocks meeting the requirements of this grade was compiled and distributed.

Pullorum Passed Grade.—This grade allowed for the listing of flocks passing one 100% free pullorum disease test. Under this grade there were 37 flocks qualifying, with a total of 45,314 birds. Lists of these flocks were prepared and distributed.

Poultry Transportation Law.—During the year there were 610 Massachusetts poultry transportation licenses issued. Considerable work was done with local and state enforcement agencies in policing the buying, selling and transporting of poultry in this state, and during the year it was necessary to revoke four poultry transportation licenses after a hearing had been granted and it had been found that the holders of these licenses had violated the provisions of the law.

Poultry Tattooing.—During the year the tattooing program was continued, with meetings and demonstrations being held throughout the state, at which time the program was explained to the poultrymen. The tattooing program, in connection with the poultry transportation law, has been successful in practically eliminating poultry stealing from this state. Up to November 30, 1938, there has been a total of 840 poultry tattoo numbers issued by the department. These numbers are registered in this office and in the office of the State Police.

Miscellaneous Poultry Work:

During the course of the year, all of the poultry correspondence and requests for information pertaining to the division work were handled.

In cooperation with certain of the County Agents we were able successfully to prevent the spread of certain infectious poultry diseases in the State.

In cooperation with the U. S. Department of Agriculture we handled the operation of the National Uniform Plan in this state.

We assisted also at certain fairs and exhibits in promoting the work of the division, and in cooperation with other groups prepared a poultry exhibit showing the position of our Massachusetts poultry breeding stock. This exhibit was shown at the Poultry Industries Exposition held in New York City the first part of November.

LICENSING AND BONDING OF MILK DEALERS

In 1938 there were 568 applicants for a license under the Bonding Law. The statutory fee of \$5 was received at the time application was made. On April 30, 1938, there were on file with the Commissioner of Agriculture notes showing a face value of \$621,092.74. During the year, notes valuing \$177,996.33 were received and notes valuing \$171,601.17 were returned. Securing these notes,—\$626,675.90 at the end of year,—we had on file collateral which showed a book value of \$849,016.31. This collateral consisted of surety bonds, bank books, United States Government bonds, industrial bonds, stocks, certificates of deposit, mortgages and life insurance policies.

During the year, hearings were held in Fall River, New Bedford, Springfield, Pittsfield, Worcester and Boston. Fifteen dealers were restrained from operating a milk plant because these dealers would not conform to the requirements of the Bonding Law. One hundred forty-one dealers were checked regarding their method of payment to farmers. Two dealers were forced to re-finance and pay up balances to the farmers. Rubber checks given by two dealers in payment for milk were investigated and the condition corrected. Twenty dealers were forced to substitute quick collateral for chattel mortgages that were on file at the beginning of the year.

It is difficult to state how much money was collected for the farmers of the state through the efforts of the department, because the law itself has a moral effect on many dealers who might be inclined to neglect their contractual duty to pay for milk delivered to the plant. Over \$50,000 was involved on complaints sent in by farmers, and this money was satisfactorily settled or the bonds of these dealers were foreclosed after due process of law.

The law has another aspect that should be kept in mind. Financially irresponsible individuals do not find it advantageous to jump into the business of distributing milk for a time, buying their product from the farmer, and not paying for it in full or not at all, then getting out of the business and going to work in another industry. This force has a stabilizing effect on the wholesale and retail price, and helps the farmer maintain better relations with proper distributors of milk.

REPORT OF THE DIVISION OF MARKETS

POULTRY AND EGGS

The poultry and egg business of Massachusetts is continuing to show gains in growth. The eggs alone, according to the United States Department of Agriculture, have a value of close to \$11,000,000. In such times as these, when industries are leaving the state and others threatening to leave, it is sound business policy to aid new and growing business enterprises. The Massachusetts Department of Agriculture has been working with the poultry industry in Massachusetts in educational programs as well as carrying out its regulatory functions. Twenty-two meetings have been held in various parts of the state at which grading demonstrations were given as well as talks on compliance with the egg laws. These talks and demonstrations were for the benefit of producers, dealers, and consumers. During 1938 there were 8,083 inspections made at establishments where eggs are sold. In addition to the above duties, work of a promotional nature was carried on. Radio talks, exhibits, sales promotions were part of the program.

At Worcester 60 storekeepers competed in a store window egg display contest. The department initiated the contest, which was immediately copied in Baltimore, Maryland; Providence, R. I.; Concord, N. H.; and at the time of this writing, Connecticut is planning a state-wide contest. The sales increased from 30% to 300%, according to reports of storekeepers. This does not imply that the contest was entirely responsible for the increase, because prices had dropped and supplies of eggs were ample. However, the experiment was timely and its use in future market gluts is assured.

Egg shows were held in various parts of the state at which eggs were judged by members of the department and prizes awarded for the highest scoring entries.

Cooperative egg marketing organizations have also been given marketing assistance in the form of instructions in candling and grading eggs.

Another law relating to the sale of eggs by sizes has recently been given the department to enforce. This work is being carried on by the present inspectors of the so-called fresh egg law. It is too early to report its effectiveness. However, favorable changes have been made in the industry since the law was passed. Advertisements relating to size now have a definite meaning.

Turkeys

The turkey industry of Massachusetts is also growing each year. The department is aiding this industry by means of promotional as well as regulatory work. Inspections are made in connection with the enforcement duties assigned to the department in the Farm Products Grading Law. Thousands of turkeys are purchased by large organizations such as the chain stores on the basis of official state grades, which require inspection. Again, exhibits, radio talks, grading demonstrations, making sales contacts, are part of the function of the department. Inspections are mainly seasonal due to the fact that the bulk of the crop is marketed from October through December.

FARMER ROADSIDE STANDS

Roadside stands selling farm products also receive the cooperation of the department in the form of inspections and promotional work. Due to competition of stands which purchase practically all of their products, bona fide producers want to be identified by an official sign which designates that the products they sell are produced largely by themselves. Regulations regarding the operation and appearance of these stands are made by the department.

STATISTICAL INFORMATION

Factual records of sources, seasons and prices of food supply are essential basis for constructive changes and adjustments in production and marketing practices. Data on amounts and sources of foodstuffs coming to the Boston consuming and distributing center were compiled and the delayed publication of "Receipts and Sources of Boston Food Supply 1935 and 1936" was released. Other statistical tabulations summarized for special requests included egg data, turkey prices, a brief review of the relation of Massachusetts food production and consumption.

RETAIL MARKET REPORT

Retail prices on fresh foods were gathered weekly in Boston and Springfield. The Boston Retail Report issued regularly includes a market news paragraph directing attention to products in season, plentiful and relatively low priced. The retail price

report and other market reports figured prominently in food cost and budget studies worked on cooperatively with agencies such as the State Division of Aid to Dependent Children and the Leominster Welfare Commissary.

CONSUMER INFORMATION

The kinds of food market information prepared for consumers and the ways of disseminating it are varied. The information includes radio broadcasts, market reports, exhibits, and talks to groups. Besides the retail price report, a weekly news release "Fresh Food Facts" presents market information in popular style. Both these publications, distributed by mail, are used by individual homemakers, welfare and social agencies, dietitians, schools, commercial organizations, retailers, including farm roadside stand operators, newspapers and radio stations. Newspaper and radio programs give the publications extended publicity. Deserving of special mention was the effective cooperation from home page editors and radio women in the apple use emergency following the hurricane.

Numerous special consumer broadcasts were given through the year, chiefly on the New England Radio News Service programs over the Colonial network. Arrangements were made and script prepared for the week of daily broadcasts from a local station in connection with the intensive McIntosh apple drive in Fall River.

Food and marketing exhibits, usually featuring apples and eggs, were arranged for such as the Family Information Center of Jordan Marsh Co., Massachusetts State Federation of Women's Clubs, Home Economics Association, and the Union Agricultural Meeting.

Among groups addressed on the subject of marketing, particularly as it pertains to consumers and consumer demand, were granges, women's clubs, school lunch room managers, meeting of meat packers, wholesalers and retailers, home economic student and graduate student classes.

Further consumer information was given out through articles written for farm and other publications, and by the distribution of recipes and marketing calendars. A fruit and vegetable selection guide was prepared especially for consumers and large buyers. Assistance was given in outlining consumer education courses being introduced into curricula of schools and colleges.

While the immediate aim of this work is toward better and more intelligent buying by consumers, its application tends to synchronize demand with supply and stabilize prices, thus promoting greater efficiency in the whole scheme of production and distribution.

APPLE INSPECTION

In addition to the regular apple inspection work carried on in principal markets and at country points, the division was called upon to do emergency inspection work on the salvaging of wind-blown apples caused by the hurricane of September 21. In order that a substantial part of this fruit could be saved, the Federal Surplus Commodities Corporation set up purchasing offices in Massachusetts to buy wind-blown fruit and ship it to welfare centers.

Because of the fact that all F.S.C.C. purchases must be certified as to grade, it was necessary for this Division to employ twelve emergency part-time inspectors to assist in this work. This inspection was done under the joint federal-state agreement, which has been in operation for a number of years. All of this work was done at no expense to the Commonwealth. While we hired and paid the inspectors, we were reimbursed in full by the Federal Government. Apples purchased by the F.S.C.C. in Massachusetts totalled about 325,000 bushels, a major part of which were shipped to distant welfare points, many in the southern states, well out of the ordinary channels of distribution of our fruit.

Regular apple inspection was carried on in the Boston, Springfield, and Worcester markets, and at important country points. Shipping point inspection was in operation throughout the season, with the greatest amount of work occurring during the export season on early apples.

MARKET NEWS

Market Reports were issued regularly from the Boston, Springfield, and Worcester offices. Apple reports were issued during nine months of the marketing season. Full use of the radio has been made in distributing market report information. Radio is becoming an increasingly important medium of disseminating market news, with less and less dependence being placed on mail distribution.

REPORT OF THE DIVISION OF PLANT PEST CONTROL

A thorough inspection of the Massachusetts nurseries was made during the past summer, at which time special attention was given to scales, borers, common insects and plant diseases. In addition to this inspection, special examinations were made for white pine blister rust, Japanese beetle, and gypsy moths. These inspections showed that the nurseries were freer from insect pests and plant diseases than they have been for several years. This is due partially to the fact that a protective belt has been maintained around all of the larger nurseries, thereby reducing the danger of insect infestations coming in from surrounding properties.

The inspections that were made of nursery stock coming into Massachusetts from other States showed the stock to be in good condition and apparently free from injurious pests.

We were able to issue all of our certificates at an early date, which fact was appreciated by the nurserymen.

Japanese beetles were found in two nurseries, but the infestations were so light that they caused little concern. This insect is well established now in Massachusetts, but is considered serious only in the city of Springfield where considerable trapping is carried on in an effort to control it.

The usual enforcement of the European corn borer law was undertaken during the first part of December, and while a large number of violations were reported by the inspectors, it is pleasing to note that they were all first violations. This would indicate that the educational campaign that we are carrying on is proving beneficial. The corn borer does not seem to be increasing in intensity throughout the State as a whole, although in the Connecticut Valley the corn seems to be more heavily infested at this time than it was a few years ago. Thorough cleaning up of crops and plowing the stubble in the fall are still the best control measures. This practice can be supplemented by spraying, which is now advocated by the United States Department of Agriculture.

The Dutch elm disease has not as yet been found in Massachusetts. It is, however, considerably nearer the border than it was a year ago. It has been found within 10 miles of the Massachusetts line. The known carrier beetles of this disease are well established in both the eastern and western parts of the State and we have realized for some time that if the disease is brought into the State, it probably will spread rapidly. Some scouting has been carried on for the disease, principally from the Experiment Station at Amherst, and it would not be surprising if the disease was reported at most any time.

APIARY INSPECTION

In 1938 it was decided to concentrate apiary inspection in the central part of the State, covering as much area as the funds would permit. The towns immediately west of the Connecticut River, east to Essex or Norfolk Counties were inspected, although some towns were necessarily omitted due to the exhaustion of funds. A few towns were also inspected in Essex and Norfolk Counties. In the inspection of a town, each known apiarist was visited and all of the colonies were examined as well as the stored combs.

Very little European foulbrood was found. This disease is of slight importance at present. American foulbrood, however, was found indiscriminately scattered throughout the area. Few localities were seriously infected. Some towns were entirely free from disease.

At the close of the season practically all apiaries where disease had previously been found were re-visited. In most instances the disease had been suppressed, which enabled the release of the apiary from quarantine.

With the small appropriation allotted, 2,247 inspections were made. The area which was covered during the year will again be inspected in 1939, but only the apiaries in which disease was discovered in 1938 and adjacent apiaries will be examined, unless further disease is discovered. Towns which were necessarily omitted in the area, will be thoroughly inspected. It is hoped also, to expand the area on all sides in 1939, particularly in Essex and Norfolk Counties.

WHITE PINE BLISTER RUST

Local and Federal agencies in Massachusetts cooperating with this division, were instrumental in continuing efforts to prevent further damage by the white pine blister rust disease. The disease results from the growth of a parasitic fungus within the inner bark of white pine trees. This fungus, however, aside from its growth on white pines has what is known as an alternate stage; that is, a part of its life is spent in the

leaves of currant and gooseberry plants technically referred to as Ribes. This dual requirement of the fungus means that if the currant and gooseberry host plants can be eliminated in pine growing areas, the spread of the disease to white pines can be definitely prevented.

Activities during the year were conducted primarily in cooperation with the Bureau of Entomology and Plant Quarantine of the United States Department of Agriculture through a grant of funds from the Works Progress Administration to that Bureau. During the winter and fall months, the field personnel was engaged in the preparation of maps definitely reording 61,290 acres of white pine in control areas aggregating 179,846 acres. These maps are prepared for use in the direction of subsequent control activities. In connection with spring and summer activities, Ribes were cleared from a combined control area of 117,774 acres of land. In this work 924,695 wild and 4,071 cultivated Ribes were uprooted.

In the combined activities of the year, relief workers were provided with 105,965 man hours of useful employment. Seven temporary employees of this division worked 4,378 hours during the approximate period from May 1 to October 15.

REPORT OF THE DIVISION OF RECLAMATION, SOIL SURVEY AND FAIRS

All signs pointed toward making 1938 a banner year for the Division of Reclamation, Soil Survey and Fairs until that memorable day, September 21, when that great catastrophe—the hurricane—struck us. The fairs showed a very marked improvement over 1937 up to this time. The total exhibits and the total attendance at all the fairs which were held before this time showed an increase over 1937.

Let us compare the total attendance at the fairs during the past three years. Included in these figures are the Eastern States Exposition at Springfield and the Brockton Fair at Brockton:— 1936—657,632; 1937—805,657; and 1938—555,179. This falling off in attendance was caused by the hurricane which reduced the attendance at Springfield by at least 200,000, it occurring after the Eastern States Exposition had run for three days and those first three days showing an increase over previous years. They were unable to continue and suffered a severe loss estimated at approximately \$80,000. Many of the smaller fairs suffered losses from which they will doubtless never be able to recover. The Sturbridge Fair suffered an estimated loss of about \$12,000.

Now to compare the exhibits: The total agricultural exhibits at the fairs numbered in 1936, 75,194; in 1937, 78,512; and in 1938, 72,190. Again the falling off can be laid to no other cause but the hurricane.

Let us consider the report of the fairs held previous to the hurricane. Previous to September 21 when the hurricane struck Massachusetts, the eleven fairs held showed a decided increase both in attendance and agricultural exhibits displayed. Some of the figures taken from our records for the 1937 and 1938 reports of the eleven fairs held, which I am sure will be of interest to you, are as follows:

Attendance—1937—11 fairs	131,942
Attendance—1938—11 fairs	143,743

which gives us a total increase in attendance of 11,801 over 1937. The agricultural exhibits also show a decided increase. In 1937 there were 19,953 agricultural exhibits and in 1938, 22,215 agricultural exhibits—an increase of 12,262 over 1937. Another increase was shown in the total number of exhibits—in 1937, the total exhibits at the 11 fairs were 24,596 and in 1938, 27,915, an increase of 3,319. These figures show increases from the eleven fairs prior to the date of the hurricane and do not include the Brockton Fair or the Eastern States Exposition.

The Division assisted, in 1936, 109 fairs; in 1937, 110 fairs; and in 1938, 105 fairs, with allotments of State prize money. The Division has the allotting of \$29,000 of State prize money and this allotment in 1931 was \$35,000, and back in 1914 the Department paid in bounties to agricultural societies as high as \$44,000. The Division during the year awarded 320 ribbons to grange, community and major fairs, garden clubs, etc.; and also awarded 85 medals and 44 trophies for agricultural accomplishment. As a result of the Act of 1937 we are now allowed to offer prize money for the suppression of insect pests.

The Division is responsible for the care, maintenance and upkeep of two State buildings—one on the Eastern States Exposition grounds at West Springfield and the other on the Brockton Fair grounds at Brockton. The grounds upon which these buildings are situated cover approximately an acre each and have been suitably landscaped with lawns and flower beds as well as hedges and base plantings and are taken care of by the Department. The Division also installs in these buildings, during the weeks of the East-

ern States Exposition and the Brockton Fair, agricultural, industrial and educational exhibits. In addition fifteen or twenty other special exhibits were installed at fairs, in railroad stations and in other public places/

The Massachusetts Building was also open as a tourist information center from August 15 to September 6 under the direction of the Massachusetts Industrial and Development Commission and between 300 and 400 people were registered during that period.

TENT CATERPILLAR CAMPAIGN

General Laws, c.128, section 2f, as amended by Section 1 of Chapter 415 of the Acts of 1937 permitted the Department to offer prizes for and in aid of the elimination and suppression of insect pests, and as a result of this change in the statute, a 4-H Club Tent Caterpillar Contest was carried on most successfully. Boys and girls registered in 4-H Club Work in twelve counties took part in this contest.

The two hundred towns reporting in the campaign showed that a grand total of 1,323,326 egg clusters were collected and destroyed. The prizes were awarded on a county basis and in addition there were special town prizes offered for the town in which the greatest number of egg clusters was collected.

SUMMARY OF PRIZE MONEY ALLOTMENTS AND EXPENDITURES (13 Agricultural and Horticultural Societies)

Hillside Agricultural Society, \$1,000; Marshfield Agricultural and Horticultural Society, \$1,000; Highland Agricultural Society, \$1,000; Franklin County Agricultural Society, \$2,000; Plymouth County Agricultural Society, \$700; Hampshire, Franklin and Hampden Agricultural Society, \$1,866.50; Union Agricultural and Horticultural Society, \$1,000; Essex County Agricultural Society, \$2,000.90; Littleville Community Fair Association, \$750.05; Martha's Vineyard Agricultural Society, \$500; Sturbridge Agricultural Association, \$1,103; Barrington Fair Association, \$1,200; Acton Agricultural Association, \$600; total, \$14,723.45.

(37 Community Fairs, Shows and Exhibitions)

Agawam Community Fair, \$49.55; Bolton Farmer's Fair, \$35; Burlington Community Fair, \$14.75; Cape Cod Horticultural Society, \$252; Chicopee Garden Club, \$24.50; Dahlia Society of New England, \$35; Dalton Community Fair, \$10; East Blackstone Community Fair, \$50; East Bridgewater Community Fair, \$75; East Longmeadow Community Fair, \$15; Elizabeth Peabody House Science Fair, \$35; Future Farmers of America, \$50; Granville Community Fair, \$75; Heath Agricultural Society, \$200; Hampden Community Fair, \$14.80; Hampden County Boys' and Girls' Club, \$198.50; Hingham Agricultural and Horticultural Society, \$100; Lexington 4-H Club, \$25; Massachusetts Horticultural Society, \$79.50; Monson Community Fair, \$99.95; Montgomery Junior Fair, \$15; Natick Community Fair, \$186.20; Norfolk County Junior Fair, \$46.50; North Shore Horticultural Society, \$85; Orange Boys' and Girls' Club, \$75; Peabody Garden Club, \$10; Public Speaking Contest, \$50; Rehoboth Community Fair, \$174.25; Southwick Community Fair, \$125; Spencer Driving Club, \$123; Sterling Farmers' Club, \$299; Springfield Onion Show, \$206.50; Suffolk County Apple Pie Contest, \$15; Upton Farmers' Club, \$50; Woronoco Harvest Festival, \$13.85; Westfield Young People's Agricultural Fair, \$50; West Springfield Junior Fair, \$15; total, \$2,977.85.

(48 Grange Fairs)

Acushnet, \$20; Assonet, \$15; Acton, \$10.25; Boylston, \$7; Boxboro, \$15; Brimfield, \$38.45; Chelmsford, \$10; Cheshire, \$20; Cochrane, \$10; Dedham, \$21; Dracut, \$14.75; Dunstable, \$24.50; Eastham, \$10; Fairhaven, \$25; Granbury, \$12.25; Holden, \$10; Leicester, \$18.50; Lexington, \$17; Ludlow, \$20; Mansfield, \$15.25; Marlboro, \$17; Merrimac, \$20; Nauset, \$10; Needham, \$10; Norfolk Pomona, \$10; Northboro, \$15; Norton, \$10; Palmer, \$15; Richmond, \$20; Riverdale, \$25; Rochester, \$24.25; Rockland, \$7.50; Rutland, \$12; Seekonk, \$13.50; Sherborn, \$10; Stockbridge, \$13; Sturbridge, \$15; Townsend, \$15.15; Tyngsboro, \$15; Warren, \$35; Westboro, \$15; Westford, \$25; Westport, \$10; West Stockbridge, \$9.75; West Wareham, \$14; Wilbraham, \$25; Wilmington, \$24.60; Williamstown, \$25; total, \$794.70.

(8 Poultry and Rabbit Associations)

Boston Poultry Association, \$157.50; Essex County Poultry Association, \$42; Essex County Rabbit Breeders Association, \$75.50; New England Poultry Association, Inc., \$250; Holyoke Poultry and Rabbit Breeders' Association, \$185.50; Suburban Rabbit Breeders' Association, \$45; Springfield Poultry Club, \$175; Massachusetts State Show Circuit, \$98; total, \$1,028.50.

SUMMARY OF STATE AGRICULTURAL PRIZE MONEY PAYMENTS

Community Fairs and Exhibitions	\$ 2,962.85
Grange Fairs	809.70*
Agricultural and Horticultural Societies	14,723.45
Poultry and Rabbit Associations	1,028.50
Boys' and Girls' Club Work	1,524.78
Badges, Medals, Cups, etc.	1,140.68
Furniture and equipment	148.50
Lantern slides and Photography	150.43
Miscellaneous payments	132.00
Special exhibitions	6,965.78
	\$29,586.67

* \$15 listed under Grange Fairs which should have been charged to Community Fairs.

Financial Statement verified.

Approved.

GEO. E. MURPHY, *Comptroller*.

REPORT OF THE STATE RECLAMATION BOARD

The State Reclamation Board, which is the successor to the old Drainage Board, was evidently put into the Department of Agriculture because its original purpose was to hear petitions on problems affecting lowlands and to create reclamation or drainage districts where it was found advisable to drain wet lands to make possible their use for agricultural purposes. The Drainage Board, which was created in 1918, was authorized to perform functions previously exercised by the Superior Court. In 1929 when the demand became general for legislation which would be helpful in carrying on the war against the mosquito the Reclamation Law (Chapter 252 of the General Laws) was amended. This amended act provided that towns and groups of towns could petition the Reclamation Board, requesting a survey of mosquito breeding conditions in their vicinity. It also provided that after such a survey and report, if funds were appropriated or contributed to carry out the suggestions of the report, the Reclamation Board should create projects for mosquito control work along somewhat the same lines as they had formerly been created in districts for drainage purposes.

Since the enactment of this so-called Mosquito Control Act in 1929, the supervising of these mosquito control projects and the making of surveys for municipalities requesting same has been the principal activity of the State Reclamation Board. In the last nine years there have been expended on mosquito control construction work under the supervision of the Board sums of money amounting to \$1,253,496.20. Of this amount the state contributed \$600,000 during the years 1931, 1932, and 1933, as a relief measure for unemployment. The balance of the money was from local appropriations and contributions. Every one of these expenditures for payroll and other items was paid out from schedules approved by the Board, and the entire work was supervised by the Board.

During the year 1938 the Reclamation Board has supervised the usual maintenance work on the mosquito control ditches in the 51 cities and towns in the Commonwealth under the provisions of Section 4, Chapter 112 of the Acts of 1931. Total expenditure for maintenance work in these 51 cities and towns was \$28,970.62. The above expenditures for maintenance were made from money sent in for this purpose by the cities and towns concerned. The cities and towns thus served were the following:

Acushnet	Fairhaven	Medford	Salem
Berkley	Freetown	Milton	Salisbury
Boston	Gay Head	Nantucket	Saugus
Chelsea	Gloucester	Newbury	Scituate
Chilmark	Hingham	Norwell	Somerset
Cohasset	Hull	Oak Bluffs	Swansea
Danvers	Ipswich	Peabody	Tisbury
Dartmouth	Kingston	Plymouth	Wareham
Dighton	Lynn	Orincy	Wenham
Duxbury	Malden	Rehoboth	Westport
Edgartown	Marblehead	Revere	Weymouth
Essex	Marshfield	Rockport	Winthrop
Everett	Mattapoisett	Rowley	

In addition to the above work there have been supervised the following mosquito control projects: Cape Cod Project comprising the fifteen towns of Barnstable County, Nantucket Project, and the Belmont Project. In these three projects the total expenditure for the year was \$40,566.12.

The Board has also made numerous surveys and layouts for cities and towns which were desirous of securing WPA projects for carrying out mosquito control operations. The Works Progress Administration of Massachusetts has insisted that all such projects should be endorsed by the Reclamation Board before they could be put in operation, so that many requests were received for assistance and advice in making project proposals for this type of work. Assistance in preparing these proposals was given to the following towns during the fiscal year 1938:

Braintree	Quincy	W. Springfield
Framingham	Revere	Westwood
G. Barrington	Scituate	Weymouth
Nantucket	Seekonk	Winchester
Norton	Springfield	

The Reclamation Board also assisted in WPA projects which were operated in the following towns and cities:

Ashland	Longmeadow	Rowley
Brockton	Nantucket	Salisbury
Canton	Needham	Sunderland
Dartmouth	Newbury	Wareham
East Longmeadow	Norwood	West Bridgewater
Holbrook	Orange	Westport
Kingston	Pittsfield	Wrentham

Requests were received from the boards of selectmen of the following towns and cities, or from community groups interested in mosquito control work, for surveys and suggestions as to how mosquito breeding areas could be reduced and the local situation improved thereby:

Dover	Georgetown	Needham
East Otis	Lexington	Plymouth
Framingham	Marion	Watertown
Franklin		

SS.
CS.
LL.

The Commonwealth of Massachusetts

ANNUAL REPORT

OF THE

COMMISSIONER
OF AGRICULTURE

FOR THE

Year Ending November 30, 1939



The Commonwealth of Massachusetts

DEPARTMENT OF AGRICULTURE

To the Honorable Senate and House of Representatives:

In compliance with the provisions of Chapter 128 of the General Laws, I am herewith making my annual report for the year ending November 30, 1939, for the Department of Agriculture.

Respectfully submitted,

WILLIAM CASEY, *Commissioner*.

PERSONNEL OF THE DEPARTMENT

COMMISSIONER OF AGRICULTURE—WILLIAM CASEY, SPENCER.

Executive Secretary to the Commissioner—MICHAEL J. CARROLL.

ADVISORY BOARD APPOINTED BY THE GOVERNOR AND COUNCIL

STUART L. LITTLE, NEWBURY, Term expires November 30, 1939.

GEORGE A. WELLS, WORCESTER, Term expires November 30, 1939.

JOHN T. GOGGIN, SEEKONK, Term expires November 30, 1940.

JAMES O'BRIEN, LEE, Term expires November 30, 1940.

JOHN BURSLEY, BARNSTABLE (WEST), Term expires November 30, 1941.

HERBERT N. SHEPARD, WARREN, Term expires November 30, 1941.

DIVISIONS AND ORGANIZATIONS

LIVESTOCK DISEASE CONTROL—*Director*, MARK H. GALUSHA, WILLIAMSTOWN.

DAIRYING AND ANIMAL HUSBANDRY—*Director*, LESTER T. TOMPKINS, ESSEX.

MARKETS—*Director up to October, 1939*, GEORGE O'BRIEN, BRAINTREE; *Director from October, 1939*, LOUIS A. WEBSTER, BLACKSTONE.

PLANT PEST CONTROL—*Director*, R. HAROLD ALLEN, TAUNTON.

RECLAMATION, SOIL SURVEY AND FAIRS—*Director*, ROBERT F. CROSS, OSTERVILLE; *Assistant Director*, A. W. LOMBARD, ARLINGTON.

AGRICULTURIST—DANIEL J. CURRAN, MARLBOROUGH.

STATE RECLAMATION BOARD

Chairman, DANIEL J. CURRAN, MARLBOROUGH

EDWARD WRIGHT, DEDHAM

ROBERT F. CROSS, OSTERVILLE

Secretary, GEORGE R. STRATTON, HOPKINTON

REPORT OF THE COMMISSIONER

Agriculture in Massachusetts continues to be an important industry with a cash farm income from marketing and government payments of more than \$73,000,000. The farmers of Massachusetts have concentrated on specialized farming and have produced maximum crops on available land. In the past year the cash income has increased on the following crops: potatoes and truck crops, pears, grapes, cranberries, small fruit, other fruit crops, maple sugar and miscellaneous crops (including forest, nursery and greenhouse). Our tobacco crop has shown less cash farm income, but there remains a large part of the 1939 crop which has not been sold, and sale of this carry-over at prevailing prices will give the tobacco crop a substantial increase over the 1938 cash farm income.

In a large part, our \$73,437,000 income to Massachusetts farmers results from the sale of dairy products at a value of \$24,763,000 and this amount is \$1,000,000 greater than 1938. Prices for poultry products during 1939 were lower than during any year for the past five years, and while the production of eggs increased in Massachusetts, the value of poultry and eggs dropped approximately \$3,000,000.

Massachusetts has exceptional market outlets and all farmers have a large consuming center within a radius of twenty-five miles in which to market

fresh farm products. Grading laws have been passed by our Legislature that give the progressive farmer an opportunity to pack, grade and mark his products on the basis of quality, and gives the consumer adequate protection in the purchase of such graded products. We have a primary market in Metropolitan Boston with an approximate population of 2,000,000 and six secondary markets with populations in excess of 100,000 consumers.

Several types of market outlets play an important part in the sale of local farm products:

1. Municipal markets. Municipal markets have been established in several of our largest industrial centers, including Boston. The farmers arrive early in the morning and find a convenient place for the truck or wagon in the market place. There is no charge for the space. Farm products are quickly disposed of to wholesale houses, commission men, jobbers, or retail establishments and the farmers return home in time to start another day.

2. Farmer-owned or operated markets. Farmers in the vicinity of some of our larger secondary markets have rented or purchased land for a market place and charge a nominal rental to farmer members. This type of market has excellent opportunities for co-operative effort. The success of these market outlets depends to a great extent upon the character of management and leadership.

3. Roadside markets. The farming sections of Massachusetts are fortunate in having the best of hard surface roads passing through the production areas. Roadside markets are operated by farm owners on many of these main highways, and the Department of Agriculture inspects and supervises a substantial number of these markets. It is expected that the number of roadside markets will increase from year to year and the consumer will be able to purchase local farm products with both the owner's guarantee of freshness and quality and the Department of Agriculture's mark of approval based on frequent inspection.

4. Chain stores. The chain stores have shown a tendency during the past few years to offer our Massachusetts farmers a cash market for local farm products. Co-operative effort among the farmers will be necessary to obtain the volume that big chain stores need, and this marketing trend gives hopeful assurance to certain commodity groups that are now struggling with burdensome surpluses.

LEGISLATION

During the legislative season of 1939 special attention was given to every possible means of obtaining greater economy in the functioning of State Departments. With this thought in mind it was considered advisable to consolidate the Divisions of Reclamation, Soil Survey and Fairs and the Division of Plant Pest Control into one division, namely: the Division of Plant Pest Control and Fairs. This change was accomplished by the enactment of Chapter 405, Acts of 1939.

Another matter that was given serious consideration by the farm organizations in this Commonwealth was the possible transfer of the activities of the Milk Dealers Bonding Law to the Milk Control Board. It was thought that the work connected with bonding of milk dealers was closely associated with the work of the Milk Control Board and that a closer co-ordination of these two groups would result in more economical and more effective service for the dairy farmers of Massachusetts. Under the provisions of Chapter 421 of the Acts of 1939 this change was effective and while the responsibility of the bonding law continues with the Commissioner of Agriculture, the immediate supervision of bonding activities is under the Administrator of the Milk Control Board.

REPORTS OF DIVISIONS

The following detailed reports of the various divisions of the department give a brief description and explanation of important functions that were carried on during the past year:

REPORT OF THE DIVISION OF LIVESTOCK DISEASE CONTROL

The report of the work of this Division for the year ending November 30, 1939, is submitted herewith.

On January 25 Mark H. Galusha of Williamstown was appointed to succeed Charles F. Riordan as Director of the Division.

No serious outbreak of disease over which this Division has control occurred in animals during the year.

The prevalence of tuberculosis in cattle, as revealed by the tuberculin test, was further reduced from the low percentage of 1938—namely, forty-nine hundredths of one per cent—to forty hundredths of one per cent.

There has been a marked reduction in the number of cases of rabies reported—namely, 38—the smallest number for any like period for the last forty years.

The anticipated reappearance of encephalomyelitis in horses, epidemic in extent, did not materialize.

BOVINE TUBERCULOSIS

The work of tuberculin testing of all cattle in the Commonwealth regardless of age continued as in the past years. A total of 22,704 herd tests, 232,443 animal tests were made, as compared with 23,370 herd tests, 226,325 animal tests in 1938—a decrease in the number of herd tests, but an increase in the number of head tested.

The finding of reactors in herds supposedly tuberculosis-free—so-called “breaks”—continues to be a serious problem which requires careful attention and study. Nine hundred twenty-eight (928) head of cattle reacted, as compared with 1,122 in 1938—.4% of the total number tested, 232,443—the smallest number of reactors and a lower percentage than at any time since tuberculin testing under the accredited herd plan for the eradication of tuberculosis was started in the year 1922. Of the 928 reactors, 224, or 24.13%, were reported at time of slaughter as showing no visible lesions of tuberculosis. Seven (7) were condemned at time of slaughter as unfit for food, due to extensive lesions of tuberculosis.

One thousand twenty-nine (1,029) herds and 3,236 head of the total of 22,704 herds and 232,443 head are recorded as first tests, indicating original tests for the person or persons under whose name the tests were conducted.

Testing, as in previous years, was conducted in cooperation with the United States Department of Agriculture, Bureau of Animal Industry. The following tabulation is a summary of the work by veterinarians in tuberculin testing for the year:

	<i>Herds</i>	<i>Head</i>	<i>Reactors</i>
Veterinarians paid by the State on an annual salary basis	7,008	70,138	206
Veterinarians paid by the State on a per diem basis	12,149	127,044	531
Veterinarians paid by the owners	52	1,295	1
Veterinarians paid by the Federal Government	3,495	33,966	190
	<hr/>	<hr/>	<hr/>
	22,704	232,443	928

TUBERCULIN TESTS BY MONTHS—1939

FIRST TESTS	CLEAN				WITH REACTORS								
	Tested				Tested				Reacted				
	Herds	P. B.	Gd.	Total	Herds	P. B.	Gd.	Total	P. B.	Gd.	Total		
1938													
December 1939	75		234	234									
January	81	16	238	254	1		6	6		1	1		
February	91	10	186	196	2		43	43		4	4		
March	131	24	362	386	2		51	51		2	2		
April	97	12	324	336	2		3	3		2	2		
May	121	6	348	354	1		15	15		2	2		
June	83		221	221	3		18	18		3	3		
July	65	15	174	189	1		1	1		1	1		
August	39		122	122									
September	55	2	153	155									
October	125	10	479	489									
November	66	11	289	300									
Total ..	1,029	106	3,130	3,236	12		137	137		15	15		

RETESTS	CLEAN				WITH REACTORS								
	Tested				Tested				Reacted				
	Herds	P. B.	Gd.	Total	Herds	P. B.	Gd.	Total	P. B.	Gd.	Total		
1938													
December 1939	2,037	2,997	21,572	24,569	32	66	1,596	1,662	8	75	93		
January	2,438	2,833	21,844	24,677	40	114	969	1,083	1	82	83		
February	2,208	2,711	22,209	24,920	53	73	1,399	1,472	12	90	102		
March	2,447	3,183	22,850	26,033	41	96	1,992	2,088	3	118	121		
April	2,444	3,589	23,197	26,786	60	26	1,418	1,444	1	95	96		
May	2,081	2,476	21,398	23,874	46	219	1,505	1,724	17	96	113		
June	1,383	450	10,160	10,610	15	13	257	270		26	26		
July	723	369	4,322	4,691	7	10	240	250		38	38		
August	718	307	3,798	4,105	5	5	148	153		6	6		
September	1,235	374	9,548	9,922	12	8	280	288	2	34	36		
October	2,160	1,650	17,102	18,752	51	62	1,543	1,605	7	77	84		
November	1,395	2,184	14,833	17,017	32	126	949	1,075	43	82	125		
Total ..	21,269	23,123	192,833	215,956	394	818	12,296	13,114	94	819	913		

TOTAL	TESTS				REACTORS		
	Herds	P. B.	Gd.	Total	P. B.	Gd.	Total
1938							
December 1939	2,144	3,063	23,402	26,465	8	75	83
January	2,560	2,963	23,057	26,020	1	83	84
February	2,354	2,794	23,837	26,631	12	94	106
March	2,621	3,303	25,255	28,558	3	120	123
April	2,603	3,627	24,942	28,569	1	97	98
May	2,249	2,701	23,266	25,967	17	98	115
June	1,484	463	10,656	11,119		29	29
July	796	394	4,737	5,131		39	39
August	762	312	4,068	4,880		6	6
September	1,302	384	9,981	10,365	2	34	36
October	2,336	1,722	19,124	20,846	7	77	84
November	1,493	2,321	16,071	18,392	43	82	125
Total ..	22,704	24,047	208,396	232,443	94	834	928

TUBERCULIN TESTS BY COUNTIES—1939

FIRST TESTS	CLEAN				WITH REACTORS								
	Tested				Tested				Reacted				
	Herds	P.B.	G.d.	Total	Herds	P.B.	G.d.	Total	P.B.	G.d.	Total		
Barnstable	28		43	43									
Berkshire	111	13	500	513				2			2	2	
Bristol	117	1	352	353	3		61	61			3	3	
Dukes	7	11	13	24									
Essex	74	4	235	239	1		15	15			2	2	
Franklin	71		158	158									
Hampden	91	4	236	240									
Hampshire	40	8	166	174									
Middlesex	139	6	367	373	1		14	14			1	1	
Nantucket	2		2	2									
Norfolk	75	5	152	157	2		4	4			2	2	
Plymouth	75	12	231	243									
Suffolk													
Worcester	199	42	675	717	3		41	41			5	5	
Total	1,029	106	3,130	3,236	12		137	137			15	15	

RETESTS	CLEAN				WITH REACTORS								
	Tested				Tested				Reacted				
	Herds	P.B.	G.d.	Total	Herds	P.B.	G.d.	Total	P.B.	G.d.	Total		
Barnstable	492	94	1,766	1,860	2		43	43			2	2	
Berkshire	1,744	2,939	21,590	24,529	34	19	823	842	2	49	51	51	
Bristol	2,367	2,375	19,296	21,671	59	67	1,186	1,253	5	98	103	103	
Dukes	123	22	722	744									
Essex	1,488	1,861	13,258	15,119	29	49	2,045	2,094			44	44	
Franklin	1,902	2,081	19,403	21,484	6	9	106	115	3	18	21	21	
Hampden	1,787	1,483	13,706	15,189	17	141	443	584	10	27	37	37	
Hampshire	1,931	2,888	17,366	20,254	13	141	186	327	1	15	16	16	
Middlesex	2,344	2,227	21,026	23,253	47	22	1,682	1,704			101	101	
Nantucket	38	11	405	416									
Norfolk	987	1,500	8,631	10,131	30	12	914	926			49	49	
Plymouth	1,513	1,182	10,765	11,947	47	118	2,043	2,161	8	134	142	142	
Suffolk	20	75	119	194									
Worcester	4,533	4,385	44,780	49,165	110	240	2,825	3,065	65	282	347	347	
Total	21,269	23,123	192,833	215,956	394	818	12,296	13,114	94	819	913	913	

TOTAL	TESTS				REACTORS		
	Herds	P.B.	G.d.	Total	P.B.	G.d.	Total
Barnstable	522	94	1,852	1,946		2	2
Berkshire	1,891	2,971	22,915	25,886	2	51	53
Bristol	2,546	2,443	20,895	23,338	5	101	106
Dukes	130	33	735	768			
Essex	1,592	1,914	15,553	17,467		46	46
Franklin	1,979	2,090	19,667	21,757	3	18	21
Hampden	1,895	1,628	14,385	16,013	10	27	37
Hampshire	1,984	3,037	17,718	20,755	1	15	16
Middlesex	2,531	2,255	23,089	25,344		102	102
Nantucket	40	11	407	418			
Norfolk	1,094	1,517	9,701	11,218		51	51
Plymouth	1,635	1,312	13,039	14,351	8	134	142
Suffolk	20	75	119	194			
Worcester	4,845	4,667	48,321	52,988	65	287	352
Total	22,704	24,047	208,396	232,443	94	834	928

COUNTY INFECTION
STATUS OF HERDS ON NOVEMBER 30, 1939, 1938, 1937

1939	TESTS		REACTORS		
	Herds	Head	Herds	Head	Reactors
Barnstable	526	1,909			
Berkshire	2,088	26,649	16	336	26
Bristol	2,479	21,364	9	224	23
Dukes	139	801			
Essex	1,509	14,602	5	127	7
Franklin	1,978	20,943	1	19	1
Hampden	1,879	15,315	2	23	4
Hampshire	1,977	20,250			
Middlesex	2,556	23,902	10	233	13
Nantucket	39	416			
Norfolk	1,056	9,182	6	59	7
Plymouth	1,490	11,181	10	560	20
Suffolk	21	182			
Worcester	4,817	49,648	36	854	160
Total	22,554	216,344	95	2,435	261

1938	TESTS		REACTORS		
	Herds	Head	Herds	Head	Reactors
Barnstable	557	1,939			
Berkshire	2,107	25,935	7	200	21
Bristol	2,536	20,977	7	91	12
Dukes	138	751			
Essex	1,567	13,964	10	673	25
Franklin	2,016	20,609			
Hampden	1,935	15,070	2	19	2
Hampshire	2,082	20,099	7	217	15
Middlesex	2,574	23,468	12	381	24
Nantucket	41	414			
Norfolk	1,067	8,953	4	41	6
Plymouth	1,612	10,988	4	79	4
Suffolk	22	175			
Worcester	4,941	49,399	18	480	37
Total	23,195	212,741	71	2,181	146

1937	TESTS		REACTORS		
	Herds	Head	Herds	Head	Reactors
Barnstable	572	1,909			
Berkshire	2,153	26,194	3	64	9
Bristol	2,590	20,454	9	163	12
Dukes	143	703			
Essex	1,614	13,924	11	543	28
Franklin	2,050	20,590			
Hampden	1,958	14,866	4	102	14
Hampshire	2,152	19,633	4	149	7
Middlesex	2,645	23,054	8	151	39
Nantucket	45	452			
Norfolk	1,079	8,842	1	141	4
Plymouth	1,620	10,453	4	88	23
Suffolk	22	176			
Worcester	5,008	48,951	25	549	41
Total	23,651	210,201	69	2,255	177

A U T K A I S A L S

PUREBREDS

Head

	Head	PUREBREDS		GRADES		TOTAL	
		Amount	Average	Amount	Average	Amount	Average
December, 1938	9	\$1,345.00	\$149.33	\$7,100.00	\$95.95	\$8,445.00	\$101.75
January, 1939	1	90.00	90.00	8,320.00	101.45	8,410.00	101.33
February	12	1,815.00	151.08	10,005.00	106.44	11,820.00	111.51
March	3	560.00	186.67	13,320.00	111.00	13,880.00	112.85
April	1	145.00	145.00	9,850.00	101.55	9,995.00	101.99
May	17	2,800.00	164.70	10,690.00	109.08	13,490.00	117.30
June	—	—	—	2,910.00	100.34	2,910.00	100.34
July	—	—	—	4,850.00	124.36	4,850.00	124.36
August	—	—	—	555.00	52.50	555.00	52.50
September	2	200.00	100.00	3,690.00	108.53	3,890.00	108.06
October	7	1,170.00	167.14	7,697.50	101.28	8,867.50	106.84
November	43	7,410.00	172.33	9,400.00	114.63	16,810.00	134.48
Total, 1939	95	\$15,535.00	\$163.52	\$88,387.50	\$106.36	\$103,922.50	\$112.23
Total, 1938	71	\$11,015.00	\$155.14	\$102,122.50	\$98.77	\$113,737.50	\$102.37

SALVAGE

PUREBREDS

Head

	Head	PUREBREDS		GRADES		TOTAL	
		Amount	Average	Amount	Average	Amount	Average
December, 1938	9	\$276.90	\$30.77	\$2,865.60	\$38.72	\$3,142.50	\$37.86
January, 1939	1	26.25	26.25	3,400.07	40.96	3,426.32	40.79
February	12	422.65	35.22	3,845.72	40.91	4,268.37	40.27
March	3	138.47	46.16	4,839.99	40.33	4,978.46	40.64
April	1	32.50	32.50	3,881.18	40.01	3,913.68	39.94
May	17	711.81	42.26	4,203.14	42.89	4,914.95	42.74
June	—	—	—	1,074.74	37.06	1,074.74	37.06
July	—	—	—	1,487.15	88.13	1,487.15	88.13
August	—	—	—	200.64	33.88	200.64	33.88
September	2	81.00	40.50	1,222.07	35.94	1,303.07	36.20
October	7	241.95	34.56	2,512.74	33.06	2,754.69	35.21
November	43	1,495.75	34.78	2,887.28	35.21	4,383.03	35.06
Total, 1939	95	\$3,427.28	\$35.92	\$32,120.32	\$38.96	\$35,547.60	\$38.67
Total, 1938	74	\$2,899.16	\$39.18	\$37,356.09	\$35.99	\$40,255.25	\$36.21

INDEMNITY

PUREBREDS

Head

	Head	PUREBREDS		GRADES		TOTAL	
		Amount	Average	Amount	Average	Amount	Average
December, 1938	9	\$529.06	\$58.78	\$2,033.57	\$28.24	\$2,562.63	\$31.64
January, 1939	1	31.88	31.88	2,500.04	30.49	2,531.92	30.51
February	12	687.51	57.29	2,901.55	32.97	3,589.06	35.89
March	3	210.76	70.25	4,218.93	35.45	4,429.69	36.01
April	1	56.25	56.25	2,860.05	30.75	2,916.30	31.02
May	17	1,034.66	60.86	3,091.26	32.20	4,125.92	36.51
June	—	—	—	917.66	31.64	917.66	31.64
July	—	—	—	1,644.29	42.16	1,644.29	42.16
August	—	—	—	177.19	29.53	177.19	29.53
September	2	350.50	29.75	1,228.54	36.13	1,579.04	35.78
October	7	426.78	60.97	2,581.40	33.97	3,008.18	36.24
November	42	2,689.35	64.03	3,199.58	39.50	5,888.93	47.88
Total, 1939	94	\$5,725.75	\$60.91	\$27,354.06	\$33.56	\$33,079.81	\$36.28
Total, 1938	71	\$4,090.52	\$57.61	\$30,605.25	\$33.74	\$34,695.77	\$35.48

INTERSTATE MOVEMENT OF CATTLE

The full effect of the law (Chapter 168, Acts of 1938), by which cattle transported into the Commonwealth, if intended for dairy purposes, must have been negative to an agglutination blood test for Bang's abortion disease, is shown by the decrease in the number of cattle received interstate this year at both the quarantine station at Brighton and points other than Brighton, the first full year of operation under said law—namely, a grand total this year of 21,637, as compared with 24,513 for the year 1938.

QUARANTINE STATION AT BRIGHTON

The following tabulation is a record of receipts and disposition of dairy cattle at Brighton for the year 1939:

ORIGIN		DISPOSITION		
Maine	4,319		<i>Inter-</i>	
New Hampshire	1,116		<i>state</i>	<i>State Total</i>
New York	1	Connecticut	4	— 4
Rhode Island	4	Massachusetts	5,444	2,132 7,576
Vermont	1,192	New Hampshire	4	— 4
		Rhode Island	1,179	6 1,185
	6,632	Slaughtered	1	— 1
Massachusetts	2,138			
	<hr/>			
	8,770		6,632	2,138 8,770

As a means of checking the accuracy of the blood tests as reported on certificates which accompanied the cattle arriving at Brighton, agglutination blood tests were conducted at frequent intervals throughout the year by drawing samples from cattle consigned by the different owners and arriving from the several states. The findings obtained have not always proven as satisfactory as should be expected, a fact which is being given careful consideration and study.

There were also received for slaughter at the Brighton station the following diseased cattle:

	<i>Conn.</i>	<i>Mass.</i>	<i>N. H.</i>	<i>R. I.</i>	<i>Vt.</i>	<i>Total</i>
Tuberculin test reactors		574		1		575
Tuberculin test suspects		15			1	16
Bang's disease reactors	2	18	9	1	23	53
Bang's disease suspects		1				1
Actinomycosis		2				2
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	2	610	9	2	24	647

These cattle were checked for identification, tagged, and released to slaughtering establishments for immediate slaughter.

Forty-four (44) head of Canadian cattle were received at the stock yard station by rail and were released and allowed to proceed to the destination named in the permits by which they were accompanied.

Six hundred seventy-three (673) trucks and 3 railroad cars were cleaned, washed, and disinfected under direct supervision of an employee of the Division. The sales barn is cleaned, washed, and disinfected at regular intervals.

One thousand six hundred seventy-three (1,673) head of cattle were given hemorrhagic septicemia (shipping fever) treatments. This service is given only upon request of the owners of cattle and a nominal fee is charged to cover the cost of the biologic used.

ARRIVALS AT POINTS OTHER THAN BRIGHTON

Three thousand (3,000) permits, required by law to accompany cattle when transported into Massachusetts (Division Order No. 43), were issued in 1939, as compared with 3,729 in 1938. Of this number, 225 were for shipments of

cattle for exhibition purposes. There were received on these permits 15,005 dairy cattle, 888 exhibition cattle, and 5,762 cattle consigned for immediate slaughter.

The dairy cattle originated at the following points:

Canada	3,147	New Hampshire	1,414
Connecticut	847	New Jersey	5
Illinois	3	New York	1,227
Maine	511	Ohio	680
Maryland	3	Oklahoma	1
Michigan	492	Pennsylvania	99
Minnesota	236	Rhode Island	340
Missouri	103	Vermont	5,129
Nebraska	54	West Virginia	1
		Wisconsin	713
Total			<u>15,005</u>

Of the number received, 14,547 were released on certificates of health issued by the state or country of origin; 151 were held, retested for tuberculosis, and released; and 307 were held and subjected to an agglutination blood test—300 were negative and released; 5 positive, 1 suspicious, and 1 doubtful were refused release and were disposed of by owners for slaughter.

RECAPITULATION

The total number of cattle received interstate is 21,637 (6,632 at Brighton and 15,005 at other points).

The following tabulation indicates the section from which cattle were received interstate:

Canada	3,147
New England	14,872
New York	1,228
Southern states	108
Western states	2,282
	<u>21,637</u>

CATTLE EXPORTS

One thousand one hundred ninety-three (1,193) head of cattle, identified and released at the dairy section of the quarantine station at Brighton, were transported direct to other states. In addition, interstate shipping certificates were issued by the Division covering 3,604 head of Massachusetts cattle for consignment to other states and countries. The following tabulation is a record of cattle exports:

From the quarantine station at Brighton:

<i>Destination</i>	<i>Head</i>
Connecticut	4
Rhode Island	1,185
Vermont	4
	<u>1,193</u>

From Massachusetts herds:

<i>Destination</i>	<i>Head</i>	<i>Destination</i>	<i>Head</i>
Alabama	2	North Carolina	2
California	1	Ohio	13
Colorado	1	Oklahoma	5
Connecticut	1,197	Pennsylvania	25
Illinois	11	Rhode Island	1,357
Indiana	6	South Carolina	1
Iowa	3	Texas	3
Kansas	5	Vermont	253
Maine	79	Virginia	2
Maryland	23	West Virginia	3
Michigan	5	Wisconsin	14
Minnesota	2		
Montana	1	Bermuda	6
Nebraska	1	Canada	7
New Hampshire	455	Jamaica	1
New Jersey	20	Venezuela	2
New Mexico	9		
New York	89	Total	3,604

LICENSED DEALERS IN BOVINE ANIMALS

The licensing of persons engaged in the business of dealing in cattle intended for dairy purposes, with frequent inspection of dealers' premises and herds by agents of the Division, and periodic retesting of such herds is undoubtedly of great value to prospective purchasers of dairy cattle by giving assurance to a considerable extent of the status of cattle purchased through licensed dealers. Dealers as a whole are cooperating exceptionally well with the Division in furnishing weekly reports of their transactions in the purchase and sale of cattle.

Two hundred seventy-two (272) licenses were issued in 1939; 10 were temporarily suspended or revoked during the year for non-compliance with the rules and regulations in connection with sales and weekly reports. Twenty-six thousand eight hundred sixty-six (26,866) head of cattle were reported as sold for dairy purposes and were checked, identified, and approved; 3,199 were reported as sold for slaughter.

As a result of court action against a dealer in the City of New Bedford for dealing in bovine animals without a license, the dealer entered a plea of nolo at the Fourth District Court of Plymouth at Middleborough and paid a fine of \$25.00.

BANG ABORTION DISEASE

With increased interest in Bang abortion disease manifest during the year, it is apparent that the trend on the part of owners of dairy cattle is toward establishment of disease-free herds through calfhood vaccination. The general opinion appears to be that by this method cattle will be less susceptible to the disease and that ultimately the same results—namely, Bang abortion disease-free herds—will be acquired with less financial loss than would be possible through any bloodtest-and-slaughter plan.

Although because of lack of legislative authority this Division has taken no active part in either the eradication or control of Bang abortion disease, it has continued to supply vials for use in obtaining blood samples, together with laboratory service for examination of same. Both vials and laboratory service are provided without cost to the owner of cattle.

The awarding of certificates under the Massachusetts plan for the establishment of Bang abortion disease-free herds has been continued. Thirty-five (35) of the 42 herds that were accredited as of November 30, 1938, were re-accredited during the year; 9 herds which had been accredited prior to 1938,

but had failed to qualify that year, were reaccredited this year, in addition to which 30 new herds were awarded certificates, 2 of which were afterward suspended; making a total of 72 herds, 2,990 head fully accredited on November 30, 1939.

In accrediting herds it is required that the blood samples be drawn by a veterinarian, that samples be submitted from all cattle in the herd six months of age or over, that all bloods be negative to dilutions of 1-50 and higher, that the herd be negative to two or more tests covering a period of at least twelve months, and that all cattle check with the tuberculin test records for a like period. The drawing of the blood is arranged for by the owner and at his expense.

Legislation for authority to engage in testing for Bang abortion disease was sought by the Division through a bill introduced at this year's session of the General Court—a bill drawn along lines similar to the law under which tuberculin testing is conducted. The bill, however, was referred to the next General Court. The failure to obtain legislation by which compensation could be paid for cattle declared to be affected with Bang abortion disease resulted, on May 1, in the withdrawal by the Federal government of further payment of compensation for blood reactors in Massachusetts.

During the year 24,153 blood samples drawn from cattle were submitted to the laboratory of the Division, as compared with 19,629 in the year 1938. These samples were submitted in connection with cattle undergoing tests for accreditation, cattle intended for interstate shipment, check tests on cattle received interstate, cattle in herds from which persons affected with undulant fever had obtained their milk supply, as well as samples received from veterinarians, owners of cattle, and others.

Of these blood samples, 20,336 were negative in all dilutions, 1,309 positive, 2,346 doubtful or suspicious (positive to 1-25 or 1-50), and 162 unsatisfactory (hemolyzed, or containers broken).

Blood samples from 246 goats, 22 horses, and 8 swine were also examined.

CALFHOOD VACCINATION

That calfhood vaccination will have an important place in the establishment of Bang abortion disease-free herds is evidenced by the ever-increasing number of requests received by the Division for information regarding such method, as well as the apparent tendency on the part of many state livestock officials to modify views formerly held against such measures.

The favorable results obtained by the use of vaccination, as reported by herd owners who have been using this method over various periods of time is without question tending toward a more general use of vaccination in combating Bang abortion disease.

Regardless of the fact that Massachusetts, through this Division, is authorized by law (Chapter 314, Acts of 1938) to provide service in the vaccination of calves between the ages of four and eight months, there has been little demand for such service, presumably due to the limited age period during which the service can be rendered, and to the requirements as to identification of calves, and the submitting of blood samples.

During the year this service was furnished 32 owners to 99 calves located as follows:

Bristol County	4 owners, 9 calves
Franklin County	1 owner, 3 calves
Hampden County	15 owners, 55 calves
Hampshire County	1 owner, 4 calves
Middlesex County	3 owners, 6 calves
Norfolk County	1 owner, 5 calves
Plymouth County	1 owner, 1 calf
Worcester County	6 owners, 16 calves

RABIES

A total of 38 cases of rabies (37 dogs and 1 cat) were reported for the year, as compared with 60 cases (58 dogs, 1 cat, and 1 cow) for the year 1938—the lowest number for any like period for the past forty or more years. With a record of only 7 cases reported during the first four months of the year, followed by three months in which there were no cases, a rabid dog was reported in July in the town of Plainville, followed by what virtually appeared an epidemic of cases in Foxboro, Franklin, and contiguous towns, resulting in a total of 26 cases reported in that district between July 1 and November 30, the end of the fiscal year. As rabies had previously been reported in Rhode Island, it is possible that this outbreak originated by or through contact with a rabid animal from that state.

As in all cases of reported rabies, inspectors of animals were immediately instructed to see that all contact animals were quarantined and, in cooperation with the State Department of Public Health, the town officials of the towns involved were advised as to the adoption of general quarantine measures, resulting not only in the imposing of town quarantines in many instances, but also in the holding of so-called "rabies clinics" by local boards of health for the purpose of providing preventive rabies vaccination of dogs.

In addition to towns and cities in which preventive rabies clinics for dogs have been held yearly for several years, such clinics were held also in many of the towns in which rabies was diagnosed during the outbreak, resulting in clinics in a total of 45 towns, at which single injection prevention inoculations were administered to 14,635 dogs out of a total of 37,786 dogs licensed.

RABIES

	SHOWING SYMPTOMS				CONTACT			BITE CASES			Total	
	Positive	Negative	Questionable	Released	Killed or died, no symptoms	Killed—Positive	Disposal pending	Released	Killed—no examination	Killed—negative		Disposal pending
Forward, Year 1938	—	—	—	14	—	—	—	172	—	—	—	186
December, 1938	2	—	—	25	—	—	—	398	1	10	—	436
January, 1939	2	1	—	—	—	—	—	404	1	11	—	419
February	1	2	—	3	—	—	—	355	1	12	—	374
March	2	6	—	7	—	—	—	576	2	12	—	605
April	—	2	1	—	—	—	—	739	2	25	—	772
May	—	1	—	—	—	—	—	1,055	11	21	—	1,088
June	—	1	1	—	—	—	—	1,095	3	25	—	1,125
July	7	2	2	14	2	—	—	877	7	20	—	931
August	3	3	5	26	11	—	—	786	5	31	—	870
September	5	4	—	1	—	—	—	721	2	22	—	755
October	4	1	—	5	—	1	—	564	2	17	—	594
November	10	—	1	3	—	1	—	372	2	18	—	407
Forward	—	—	—	—	—	—	4	—	—	—	177	181
Total	36	23	10	98	13	2	4	8,114	39	227	177	8,743

The above record refers to the following animals:

Cats	1	1	2	1	13	—	—	82	3	44	2	149
Cattle	—	1	—	16	—	—	—	—	—	—	—	17
Chipmunk	—	—	—	—	—	—	—	—	—	1	—	1
Dogs	35	21	8	79	—	2	4	8,022	35	173	175	8,554
Horses	—	—	—	2	—	—	—	1	—	—	—	3
Muskrat	—	—	—	—	—	—	—	—	—	1	—	1
Monkeys	—	—	—	—	—	—	—	8	—	—	—	8
Rabbits	—	—	—	—	—	—	—	1	1	3	—	5
Raccoon	—	—	—	—	—	—	—	—	—	1	—	1
Rat	—	—	—	—	—	—	—	—	—	1	—	1
Squirrels	—	—	—	—	—	—	—	—	—	3	—	3

Total positive cases, 38

RABIES BY TOWNS

Bedford	3	Hingham	1	Randolph	1
Bellingham	2	Manchester	1	Waltham	1
Blackstone	1	Marblehead	1	Wayland	1
Canton	1	Mendon	1	Webster	1
Foxboro	7	Milford	1	Winchester	*1
Franklin	9	Norfolk	1	Woburn	1
Grafton	1	Plainville	1	Wrentham	2
Haverhill	1			*cat	

Only one of these animals was reported as a stray (owner unknown).

RABIES BY COUNTIES AND MONTHS

County	Dec.	Jan.	Feb.	Mar.	July	Aug.	Sept.	Oct.	Nov.	Total
Essex	1			1	2	1				4
Middlesex		2	1		2					5
Norfolk				1	4	1	4	4	9	23
Plymouth									1	1
Worcester	1					1	1	1	1	5
Total	2	2	1	2	7	3	5	5	11	38

The heads of 292 animals were received for laboratory examination. Of this number, 1 cat and 31 dogs were reported as positive; 47 cats, 1 chipmunk, 1 cow, 194 dogs, 1 muskrat, 3 rabbits, 1 raccoon and 4 squirrels as negative; and 2 cats and 6 dogs as questionable.

Fifty-four (54) persons were reported as bitten by rabid animals or exposed to them. Seven thousand nine hundred forty-two (7,942) persons were reported as bitten or scratched by animals.

HOG CHOLERA

During the year 82,056 head of swine were given treatments for and in prevention of hog cholera on 825 premises by veterinarians in the employ of the Division. In addition, 39,586 head were treated on 197 premises by veterinarians in private practice.

In addition to the above, 24,402 head of swine were treated on 184 premises for infections other than cholera by State-employed veterinarians and 5,233 head were treated on 27 premises by veterinarians in private practice.

EQUINE ENCEPHALOMYELITIS (SLEEPING SICKNESS)

That the theory that weather conditions favorable to the propagation of blood-sucking insects, such as the mosquito, are a factor, if not a principal cause, for the spread of equine encephalomyelitis is to some extent justified, was apparently substantiated by the fact that, although a few scattered cases of the disease occurred during the past season, its generally anticipated re-appearance in epidemic form failed to materialize.

Instead of a long period of warm, damp weather, such as prevailed throughout the summer of 1938, the weather this year was unusually dry, resulting practically in drought conditions, and therefore especially unfavorable to the breeding of mosquitoes and other blood-sucking insects.

During the spring of the year regional meetings were held in cooperation with county agents, at which the nature of the disease and ways and means of prevention were discussed. The Division also prepared and furnished 20,000 copies of a pamphlet entitled "Equine Encephalomyelitis (Sleeping Sickness)," containing information in the form of questions and answers. These pamphlets were distributed with the cooperation of county agents to farmers, horse owners, etc. In the pamphlets, at the meetings, by radio broadcasts, and through newspaper releases stress was placed on the advisability of early preventive or protective vaccination of horses.

Questionnaires were sent out by this Division to veterinarians requesting information as to the cases observed in their practice, outcome of same, number of horses vaccinated, etc. Replies were received from 144, of which 120 reported vaccinating 13,509 horses with so-called "chick vaccine"—two injections, seven to ten days apart, being generally employed. With few exceptions no serious after-effects resulted from this treatment.

During the season all reports of suspected cases were investigated. A positive diagnosis was accepted in 13 cases, of which recoveries were reported in 5—East Bridgewater (April), Gardner (August), Granby (October), North Brookfield (May), Wareham (October)—and deaths in 8—Dartmouth (August), Easton (July), Hopkinton (July), Lancaster (August), New Braintree (August), Northfield (July), Westboro (July and August). A positive diagnosis was confirmed by laboratory examination of brains of two horses—New Braintree and Westboro (August).

Regardless of the fact that early attention to vaccination may have been beneficial, failure of the anticipated return of equine encephalomyelitis, epidemic in extent, is believed to have resulted mainly because of weather conditions.

EQUINE INFLUENZA

Horse influenza, a disease generally associated with the transportation of horses by rail and generally known as shipping fever, was reported early in April. First reported in connection with a consignment of horses received at a sales stable located in Lowell, it became practically epidemic, appearing in widely separated sections of the Commonwealth, but traced more or less directly to horses from the Lowell stable or to contact with such horses. Unusually virulent in type and exhibiting symptoms varying to a considerable extent in character, and with an exceptionally high mortality rate, it was somewhat confused with equine encephalomyelitis in many instances. Fortunately, with the advent of warmer weather the outbreak abruptly subsided.

AVIAN TUBERCULOSIS

An investigation by the Division of a report from the State College that avian tuberculosis had been identified in dead poultry sent to the college laboratory for diagnosis resulted in the finding of extensive infection by tuberculosis of a flock of poultry located in the eastern part of the State.

From the history of birds in the flock "going light," frequent deaths, and by finding tuberculosis in birds selected from the flock at random, it was decided that in the interest of public health the entire flock should be condemned and killed. Following this decision an order of killing was issued in accordance with the law (Chapter 129, section 11, General Laws). The birds in the flock were duly appraised by a representative of the Middlesex County Farm Bureau and the poultry were slaughtered under inspection of two veterinarians—one from this Division and one representing the State Department of Public Health. One hundred seventy-eight (178) birds were killed, of which 58 were found diseased and the carcasses condemned. The carcasses in which no disease was found were sold for food purposes, the proceeds reverting to the owner of the flock. In addition, reimbursement was made by the State in an amount to equal the full appraised value. No compensation was allowed for the 58 condemned birds.

Following condemnation and removal of the flock, the premises were thoroughly cleansed and disinfected, old woodwork was torn out and the ground was turned over.

The handling of this case brought to the attention of the Division certain facts: (1) avian tuberculosis is more prevalent in Massachusetts than is generally suspected; (2) poultry prepared for market are dressed but not drawn and, when sold to the consumer and drawn, no governmental inspection is provided or required by law; (3) with few exceptions, the carcasses which were condemned appeared to be in first class condition; and (4) with the few exceptions mentioned above, all of the birds slaughtered, including the diseased birds, would under ordinary circumstances have been disposed of for food purposes through the usual market.

FOWL TYPHOID

An outbreak of fowl typhoid, which was confined to a relatively small area in Middlesex County, was called to the attention of the Division in the month of August by the county agent in that county.

The Director, accompanied by a representative of the county extension service, visited several premises on which there were poultry affected with this disease. The flocks were mostly small. In many cases poultry on adjoining premises were also diseased. Some owners, as soon as infection was found in their flocks, disposed of their healthy birds for slaughter, while in some cases other owners reported losses as high as ninety per cent.

A letter suggesting proper control measures, which was endorsed by the Department of Veterinary Science of the Massachusetts State College, was sent by the Division to poultry owners in the infected area.

MISCELLANEOUS DISEASES

Actinomycosis—Fourteen (14) head of cattle were reported, of which 12 were slaughtered and 2 are now under quarantine.

Blackleg—Preventive vaccination treatment was applied to 2,143 head of young cattle in 201 herds located in 57 towns.

Glanders—Agglutination blood tests were made on bloods from 6 horses reported as suspected of having glanders. The results were all negative.

Mange—Approximately 188 head of cattle in 22 herds were reported. These cattle were held in quarantine until cured and then released.

Hemorrhagic septicemia—Forty-seven (47) head of cattle in 3 herds were given preventive hemorrhagic septicemia inoculations.

GOATS

Tuberculin tests and agglutination blood tests were applied under State supervision to 232 goats in 15 herds, with negative results.

ANNUAL INSPECTION OF NEAT CATTLE, SHEEP, AND SWINE

In accordance with section 19, Chapter 129 of the General Laws, the annual inspection of neat cattle, sheep, and swine, and of the premises where kept was ordered on November 4, 1938, to be completed on or before January 1, 1939.

From reports received from 351 cities and towns in the Commonwealth, inspections were made of 22,290 premises, on which were located 213,614 head of cattle, 6,008 sheep, 85,492 head of swine, and 3,117 goats. Of the total number of cattle reported, 145,492 were listed as dairy cows; 2,350 bulls and 15,860 cows were recorded as purebreds.

Regional meetings of inspectors of animals were held in the month of November at Boston, Greenfield, Pittsfield, Springfield, and Worcester, for the purpose of giving information and instruction relative to the duties of the inspectors of animals.

DIVISION OF LIVESTOCK DISEASE CONTROL

FINANCIAL STATEMENT

APPROPRIATION CLASSIFICATION	APPROPRIATION	EXPENDITURES
Directors' salary	\$ 4,000.00	\$ 4,000.00
Personal services	26,400.00	25,843.44
Expenses (office)	8,838.58	
Brought forward, 1938 appropriation	115.96	8,670.05
Personal services, veterinarians and agents	68,000.00	67,577.83
Traveling expenses, veterinarians and agents	15,107.85	
Brought forward, 1938 appropriation	121.19	14,735.07
Extermination	3,024.06	
Transferred, appropriation for small items	21.00	
Brought forward, 1938 appropriation	24.22	2,003.73
Reimbursement for certain cattle killed	35,000.00	
Brought forward, 1938 appropriation	8,432.26	29,466.72
Reimbursement to towns for inspectors of animals	5,200.00	5,063.28
	<hr/>	<hr/>
	\$174,285.12	\$157,360.12
Unexpended balance		16,925.00
	<hr/>	<hr/>
	\$174,285.12	\$174,285.12

Financial Statement Verified.

Approved

GEO. F. MURPHY,

Comptroller.

Respectfully submitted,

MARY H. GALUSHA,

Director.

REPORT OF DIVISION OF DAIRYING AND ANIMAL HUSBANDRY

The Division of Dairying and Animal Husbandry continues to stress the importance of quality milk production, not only in Massachusetts but in the entire milk shed that is supplying our Massachusetts markets.

However, during the past year the work of the Division in connection with other animals has received the personal attention of the director. Meetings were attended in all parts of the State where breeders or growers of cattle, sheep, goats or horses gathered to discuss the matter of increased production of farm animals. Talks were given to those groups. Counsel was given wherever such was sought or needed for the advancement, protection and extension of improved marketing. Persons inquiring about the management of livestock farms were urged to visit one of our progressive farms where livestock was raised and where the topography and soil were similar to the inquirer's farm, and make a study of the methods employed on a successful farm that could be used to advantage on other farms.

During the year the division has been able to help a great many farmers who carry sheep as part of their livestock interests, through the fine work of the Massachusetts Sheep Demonstration Farm located at North Hatfield. The following is a summary of distinctive features connected with the operation of this privately-owned, State-contracted farm. (As provided by the statutes, for the establishment of Sheep Demonstration Farms.)

- 81 Crossbred ewes imported from other sheep growing states and sold to eight new sheep growers; one a former grower buying for replacement.
- 29 Purebreds were sold from the flock maintained by the owners of the farm to eight sheep growers. Seven of the twenty-nine were rams to head flocks, thus fixing or improving the conformation, matured market size, etc., of the flocks where used.
- 123 Persons from within the State, who were interested specifically in stock, or information on the care, feeding, breeding or general information visited the farm during the past year.
- 70 Persons attended a sheep demonstration program on April 8, 1939. The said program arranged to bring to them, through practical demonstrations information on pertinent flock management subjects.
- 4 Times during the year stock judging teams from the Massachusetts State College spent several hours studying and judging sheep at the farm.
- 1 Group from Smith Agricultural School spent an afternoon studying the sheep and their management.

Several persons including one farm manager spent from one day to a week working on the farm for practical experience with sheep farm management methods. The manager mentioned was from a farm that had imported 110 ewes to start a new flock.

Purebred sheep from the demonstration farm were exhibited at the International Livestock Show against the world's best and came home with many fine prizes.

Incidentally a Massachusetts Dorset breeder carried his sheep from coast to coast, and in Canada, winning many firsts and grand championships wherever shown. Massachusetts sheep are becoming sought for their quality. We hope for great strides in this field within the next few years.

POULTRY INSPECTION

The division has continued its activity with the poultry industry of our State and has enjoyed the fine cooperation of the flock owners who have come under our supervision.

In view of the fact that Massachusetts has a national reputation for breeding stock, baby chicks and hatching eggs as well as being the possessor of many disease-free flocks, our department is doing everything possible to maintain that reputation and possibly improve upon it. There are four

classes of poultry flocks in the state that the department supervises and identifies for the purpose of providing reliable sources of healthy, high-quality stock, and to enable the producers of such stock to be properly identified. The pullorum disease-free grades are known as Massachusetts Pullorum Passed and Massachusetts Pullorum Clean. The Massachusetts Pullorum Passed grade allows for the listing of flocks which are officially tested by the Massachusetts State College Veterinary Department and are found 100% free from this disease. Names and addresses of owners of these flocks were prepared and distributed.

Massachusetts Pullorum Clean grade is the next higher grade which calls for two consecutive tests, similar to the Pullorum Passed Test. The total number of non-reacting flocks for the past season was 289 (100% tested), according to the Massachusetts State College, Department of Veterinary Science.

Poultry Certification: 16 breeders throughout the state had their flocks supervised by the department. Each bird was individually inspected and banded, provided that it met the grade requirements for freedom from pullorum disease. Likewise, these birds had to show health, vigor, productive capacity and reasonable freedom from standard disqualifications. At least two visits were made during the hatching season of 1939 for the purpose of checking the size of hatching eggs, set by the breeders. If the grade requirements are satisfied the flocks are then officially recognized as being Massachusetts Certified Pullorum Clean.

Record of Performance. This year 16 breeders met the requirements of the grade known as Massachusetts Record of Performance Pullorum Clean. These flocks must meet the requirements of the Massachusetts Certified Pullorum Clean Grade. In addition, unannounced inspections are made of these flocks throughout the year. The inspector at this time takes charge of the trapnets, the records, and checks for accuracy. Such additional information as number of birds in breeding pens, pedigree eggs set, chicks hatched and stock sold, is filed with the department. Private advertisements of the breeders are also checked and approved. In order to retain the fine reputation enjoyed by Massachusetts breeders many state, sectional and national meetings are attended in the interests of our R.O.P. program. Circulars are prepared and published in which these high quality products of the Massachusetts poultry industry are advertised. The department also prepares an annual summary of the breeding work connected with the various flocks under the supervision of the state.

The following is a brief summary of the results obtained by our R.O.P. breeders for the 1938-39 season:

Number of birds entered under R.O.P. supervision.....	8,013
Number of birds passed under R.O.P. supervision.....	3,990
Average production of all birds passing under R.O.P. supervision	247.07
Average egg weights of all birds passing under R.O.P. supervision	25.72
Average body weights of all birds passing under R.O.P. supervision	5.95 lbs.
Number of Pedigree Pens	257

Poultry Tattooing. The program for tattooing has been continued during the past year. This program is carried on in connection with the Poultry Transportation Law which is a check on thieving. There has been distributed to date 701 tattooing outfits. Poultry flocks are coded and the State Police receive a copy of the number assigned to each poultryman. Should tattooed birds be stolen the police are notified. In this manner stolen poultry can be identified either through the police department, or the State Department of Agriculture.

Poultry Transportation Law. During the past year 576 licenses have been issued to persons and firms regularly engaged in the business of transporting poultry over the highways. The purpose of this law is to check the buying,

selling, and transportation of poultry. It is another method of eliminating poultry stealing in the state.

Miscellaneous Poultry Work. Exhibits were displayed at the World's Poultry Congress in Cleveland, and at the Eastern States Exposition in Massachusetts, as well as at other fairs in the state. The purpose is to advertise the poultry industry of Massachusetts and the breeding work that is being conducted within the state. The World's Poultry Congress Exhibit was financed by the Massachusetts Industrial and Development Commission.

During the past year the poultry inspector of the department acted as secretary for the Massachusetts Federation of Poultry Associations and the Massachusetts Record of Performance Association.

In co-operation with the Massachusetts State College and County Agents a disease eradication program is being carried out successfully.

GOAT BREEDING

Goat breeding maintains its interest in Massachusetts and production has increased over former years. The milk goat will unquestionably continue to be an important domestic animal in Massachusetts. This industry is being promoted by men and women of sound judgment, from the many professions and walks of life. They are determined to have high-grade animals and produce quality milk and milk products.

The effort expended by the milk goat breeders is evidenced by the increased number of entries of goats of high quality at many of the fairs conducted throughout the State. Their interest is also apparent by such activities as running milk scoring contests for super quality exhibits, and by adopting a method of scoring and inspecting goat dairies by duly assigned members. A certificate of merit to be presented to those who meet their exactly high standard has been designed and made available to the several associations by the united effort of the Massachusetts Milk Goat Breeders' Council. All of this activity within their circles on the scoring of goat dairies is predicated by the desire to run these advanced experiments as feelers to ultimate laws and regulations suited to their product and their production conditions.

Goat milk and dairies producing it are just as much a consumer hazard as is cow's milk or the dairy farms producing such milk. We, therefore, believe that not only those involved in the production of goat milk, but all who are concerned with continued milk sanitation and a protected milk supply should give thought of the need for proper legislation to take care of this situation.

SWINE

The swine producers in the Commonwealth believing they could find a greater degree of satisfaction in their work by banding together organized the Massachusetts Hog Growers' Association. Regular meetings have been held at which time speakers have been present to discuss various phases of their important industry. The division has assisted in such matters by furnishing suggestions for better regulation of feeding garbage, housing, etc., by giving aid and advice with production, breeding and feeding problems. Dressed pork, however, continues to bring a low price and a more economical production is necessary to counteract the effects of decreased income.

FURTHER DEVELOPMENT IN RAISING HORSES

The horse breeders, particularly those interested in pleasure type horses have been forging ahead, by unified efforts through their organization, even though the horse population has steadily decreased. This decrease has been largely by reason of the fact that machinery replaced draft horses on farms and in industry. Light horses are actually becoming more popular. The

efforts of the department and others to show the business man or woman the advantages gained through improved health, and the wholesome diversification of their time by the use of good horses is yielding results. To ride a well mannered horse through the miles of planned trails out over the beautiful countryside will do much to have one fully realize the true values of our fine State. The greater use of pleasure horses will keep more of our land in use to supply feeding materials, more men in employment, and a more healthy populace. The division has felt the work spent on light horses was a very worth-while promotion.

PROMOTIONAL ACTIVITIES

The activity in promotional fields of endeavor has been aggressively carried on by means of articles written for publication in farm or daily papers, by means of prepared radio talks, and by assembled group meetings throughout the Commonwealth. The director has been called to various meetings throughout the New England area to discuss the regulation of milk produced for our markets or subjects pertinent to its production. The division has worked in complete harmony with the various other established agencies within our industry such as producers, dealer organizations, the farm bureau, the extension service, the State college, the various fairs and market outlets for the better handling of dairy or livestock products.

INSPECTION OF DAIRY FARMS

Dairy farm inspection under Chapter 305 of the Acts of 1932 has progressed with varying degrees of improvement. The progress has been very good along the lines of uniform interpretation of regulations. Several meetings of our inspectors have been held to discuss uniformity. One meeting was held at a farm where actual scoring was done and every detail discussed, and after this discussion a very definite progress was made on uniform interpretation. The problem of local inspectors interpreting the regulations of the Milk Regulation Board along with their own local ordinances is still a problem. There seems to be no practical way of accomplishing a method to bring about uniformity of the inspection of dairy farms, particularly on our Massachusetts dairy farms, and the only logical way is to enact legislation along this line. I particularly recommend that some form of legislation be passed that would enable the director to assign, allot or supervise the territory or farms to be inspected by local inspectors.

The limits of the milk shed remain about the same except that within the area many requests for inspection of dairy farms reveal the cream shippers are constantly changing to fluid milk producers. One prosecution and conviction resulted from a shipment of Michigan milk to Massachusetts markets from unregistered farms. In accordance with figures from the Federal Milk Administrator's office more milk is being produced per dairy and more dairies are shipping milk, the result being that surplus milk is increasing and lowers the blended price returned to producers. Some definite steps should be taken to control this increase of milk into Massachusetts in order that the Massachusetts producers can expand without being penalized.

Dairy exhibits were installed at New Bedford Food Show, Marshfield Fair, Topsfield Fair, Brockton Fair, Eastern States Exposition, Great Barrington Fair, the Boston Food Show, and the Trade Show at the Union Agricultural Meeting.

One hundred twenty-two certificates of registration were refused or revoked after hearings; 55 were reinstated and 67 stand refused or revoked to date.

Complete inspections were made of all dairy farms supplying the following creameries or plants out-of-State:

- H. P. Hood & Sons—Belfast, Maine
 West Farmington, Maine
 Lancaster, New Hampshire
 Colebrook, New Hampshire
 West Canaan, New Hampshire—Grade A
 Barnet, Vermont—Grade A
 Barton, Vermont
 Newport, Vermont
 Orleans, Vermont
 Fairfield, Vermont
 St. Albans, Vermont
 Sheldon Junction, Vermont
- New England Dairies—Colebrook, New Hampshire
 East Berkshire, Vermont
 Enosburg Falls, Vermont
 McIndoes, Vermont
 Chelsea, Vermont
 Concord, Vermont
- Whiting Milk Company—Newport, Maine
 New Sharon, Maine
 Harmony, Maine
 Skowhegan, Maine
 Colebrook, New Hampshire
- W. T. Boyd & Sons—Laconia, New Hampshire
 Nashua, New Hampshire
 West Rumney, New Hampshire
- Cummings Creamery—Newport, New Hampshire
 Laconia Creamery—Laconia, New Hampshire
 D. Buttrick & Son—West Lebanon, New Hampshire
 Green Valley Creamery—Passumpsic, Vermont
 Milton Cooperative Creamery—Alburg, Vermont
 Richmond Cooperative Creamery—Richmond, Vermont
 Seven Oaks Dairy—Newport, Vermont
 Bethel Cooperative Creamery—Bethel, Vermont
 Cabot Cooperative Creamery—Cabot, Vermont
 Caledonia County Cooperative Creamery—West Barnet, Vermont
 C. W. Coburn—West Fairlee, Vermont
 Findeisen Farms—Lyndonville, Vermont
 South Royalton Creamery—South Royalton, Vermont
 Lakeside Creamery—Craftsbury Common, Vermont
 Grand Isle Cooperative Creamery—Grand Isle, Vermont
 Lyndonville Creamery Association—Lyndonville, Vermont
 Riverside Dairies—St. Johnsbury, Vermont
 St. Albans Cooperative Creamery—St. Albans, Vermont
 Shelburne Cooperative Creamery—Shelburne, Vermont
 Mountain View Creamery—Starksboro, Vermont
 Tunbridge Cooperative Creamery—Tunbridge, Vermont
 White River Cooperative Creamery—Rochester, Vermont
 Fairfield Farms—East Corinth, Vermont

In addition to these supplies several independent dealers having a small number of dairies were inspected and registered.

The dairy farm inspectors spent a great part of the year inspecting dairies outside of Massachusetts whose milk was being sold in Massachusetts markets. The following tabulation indicates the number of inspections made during the year:

Inspections	Approved		Re-inspections	Approved		Other Farms Visited	Hearings Scheduled
	Yes	No		Yes	No		
1,131	791	340	423	312	111	233	160
1,879	1,685	194	133	105	28	135	—
869	307	562	914	600	314	226	170
1,282	892	390	243	209	34	320	94
1,202	702	500	403	295	108	245	79
729	284	445	185	352	133	100	87
1,057	773	284	363	236	27	132	20
107	71	36	41	36	5	43	12
1,136	611	495	623	485	138	279	379
84	61	23	26	20	6	—	2
559	455	104	112	78	34	213	—
Totals	10,035	6,662	3,373	3,666	2,728	938	1,003

In addition to the above inspections of dairy farms the following work was done:

Babcock tests	1,827
Sediment tests	270
Resazurin tests	160
Reductase tests	43
Phosphatase tests	21
Producers samples tested	2,961
Complaints investigated	101

MILK DEALERS' LICENSING AND BONDING LAW

To December 1, 1939 there were 615 applications on file under the Milk Licensing and Bonding Law, Chapter 94 of the General Laws, section 42A to 42K. These dealers filed with the Commissioner of Agriculture surety bonds or notes secured by collateral totaling \$638,981.95. The collateral, securing the notes, has been reviewed during the year. Chattel mortgages have not been accepted as security for the past three years. All dealers securing notes with such mortgages have been asked to substitute better security. Several cases are on file in which dealers have co-operated with the department by substituting.

Bonds have been foreclosed on two dealers and moneys totaling \$675.00 have been distributed to the proper parties. Four dealers have been restrained from operating milk plants and have retired from the milk business without the need of court action. Complaints have been received from fifty-three farmers.

Forty-eight cases were pending December 1, 1939. Two cases of re-organization were reported which affected security filed under the Bonding Law.

Area 17 (Boston). Several dealers contemplated changing their status from partnerships to corporations due to the effect of the Supreme Court decision regarding legality of the Federal Milk Marketing order. These changes affect collateral filed with the Commissioner.

Twenty-five dealers were summonsed into the office regarding their operations under the law. Approximately 350 dealers and 600 farmers were interviewed in the field.

In November, 1939, by law, the personnel of the department was assigned to the Milk Control Board to co-ordinate the activities of the two departments.

REPORT OF THE DIVISION OF MARKETS

The work of the division might be divided into three definite parts:

- (1) Regulatory work
- (2) Market reporting
- (3) Marketing counsel or promotional work.

REGULATORY WORK

The regulatory work of the Division of Markets consists of inspection work on seeds, eggs, poultry, apples, and at certain times, onions and other vegetables. The regulatory work consists of inspection of commodities where laws or voluntary grades have been established and it is the duty of this division to maintain adherence to established grades.

Turkeys

Marketing turkeys becomes a greater problem each year, due to the gradual increase in production. Massachusetts, while essentially an industrial state, is taking advantage of the increased demand for this nationally known bird. According to the United States Department of Agriculture, 302,000 birds were produced in Massachusetts in 1939. This is an increase of 25% over 1938. In 1929 the production for the state was 61,000, and since then there has been a gradual increase, so that now Massachusetts by far leads the New England States—in fact, it almost triples the production of Vermont, which state has enjoyed the reputation of producing many turkeys.

In connection with this expansion of the turkey industry, the Massachusetts Department of Agriculture has rendered definite service to the industry, in order that the prosperity and well-being of this agricultural group might be increased. A member of the department attended the many meetings of the Massachusetts Turkey Growers' Association. Assistance was given wherever possible in carrying out the marketing program of this organization. Radio broadcasts were arranged and inspections of several thousand turkeys were made on the basis of the officially established grades of the Department. Assistance by way of establishing a brand mark was also given. There were many other ways in which the Department contributed toward the successful operation of this marketing project.

Eggs

The production of eggs constitutes a major phase of our poultry industry. Few people realize the contribution that poultrymen make toward the wealth of Massachusetts. The income from the production of eggs alone is over \$10,000,000. When combined with poultry meat and hatching eggs, the value of poultry and poultry products sold approximates \$17,000,000, according to the 1938 figures issued by the U. S. Department of Agriculture. Perhaps the biggest contribution which the Massachusetts Department of Agriculture makes toward the poultry industry is through the law enforcement work. The Fresh Egg Law and the Egg Sizing Law enable the consumer to buy fresh, large eggs with confidence, when eggs are offered for sale or advertised for sale as fresh, strictly fresh, new laid or nearby, and the container is marked with "large size" designation. Inspections are being made by three inspectors.

Educational work is also carried on in connection with this law enforcement program. Last year 8570 inspections were made. Many hearings were held and violators were brought to the attention of the court in a few instances. The percentage of fresh egg violations has been reduced to less than 4%. Egg sizing law violations averaged approximately 23%, and the majority of these had to do with advertisements which stated prices, but which did not designate the size. The next most important reason for the violations was due to cartons not being marked.

The growth of the poultry industry has increased employment, has brought a much desired food product to the consumer at lower prices. The fresh egg law has been an important factor in the improvement of the quality.

MARKET REPORTING

Market reporting has long been a function of the Division of Markets, and the service has been modified from time to time to meet the needs of changing conditions. The mailed report has given way largely to the newspaper report and more especially to radio reports. Ninety-two per cent of our farmers have radios and radio reports are available at 6:30 a.m. and at 12:15 noon. The highlights of the market at 6:30 a.m. have proven of distinct advantage, as they represent actual going prices at the moment.

The division recently conducted a poll to ascertain the value, timeliness and use of the market report from Boston. It is found to be practically impossible with present mail and train facilities to deliver reports much beyond

the city of Boston on the day they are printed. Several suggestions for improvement were suggested, and as far as possible they have been adopted.

The Worcester and Springfield market reports have excellent circulation by newspaper and over the radio.

Worcester Market Report

The regular detailed report covering wholesale prices of native and shipped-in vegetables and fruits and including daily quotations on nearby eggs has been issued daily except Saturday. Information contained in these reports was gathered from local commission houses and from the farmers' market. Reports were mailed to various departments at the Massachusetts State College, to neighboring State Agricultural Departments, and to the U. S. Agricultural Marketing Service in Washington. The reports also were published in the Worcester Telegram, a morning paper, and in the Worcester Evening Gazette. In addition the reports were broadcast each day from Station WTAG at approximately 12:25 p.m. Each Saturday, instead of a market report, a summary of the week's activities on the produce market was issued and broadcast, along with any bits of agricultural or market news which might be of local interest.

A daily record has been kept of receipts of native produce arriving for sale at the farmers' market. The number of farm trucks using this market in 1939 averaged 41 per day, as compared with an average of 34 in 1938.

Special Apple Reports were issued, covering the apple market in detail, during the local season, roughly from the middle of August to the middle of March or early April. These were broadcast on the days issued. Cold storage holdings of apples in Worcester were obtained from local cold storage during the season. These figures were broadcast when obtained, and also included on the printed market reports for local publication.

Carlot receipts of fruits, vegetables, and other agricultural products have been obtained daily from the railroads and included on the daily market reports as a matter of record. Monthly and annual summaries of these receipts have been mimeographed.

Springfield Market Report

Wholesale market reports, covering wholesale prices of fruits and vegetables sold in this market, were tabulated and issued daily. This information was obtained from producers, wholesalers, buyers, commission dealers and jobbers, and covered sales on carlot and less than carlot receipts of both local and shipped-in products.

The local Farmers' Market was canvassed daily and prevailing prices received from the growers. This information and the general trend of the market were transmitted to the producers, so that a more nearly normal price range prevailed, as growers realized in a short time just what the situation was, and whether or not they were in line with the market. This was done without mentioning names, but by giving the price range as requested on any given commodity. The market period was from about 6:00 a.m. to 4:00 p.m., with trading completed during these hours.

The Farmers' Market enjoyed a good season for the Association, and also for the growers. Prices held within a satisfactory range over an extended period on a great many commodities offered. The dry weather did not affect the crops materially, and in a great many cases it was necessary to transplant, but favorable receipts were offered nearly every day.

The central location of the Springfield Market makes it a terminal receiving and shipping section. Dealers make daily trips into the northern valley section, with coverage extending as far north as Keene and Brattleboro; westerly coverage extends to Pittsfield and Albany; easterly through the Brookfields and Ware section; and southerly to the New York Market.

Wholesale reports were issued through the local newspapers and radio stations, also on the early morning broadcasts from WBZ, Boston, twice a week. Newspaper dissemination was through the early editions, which

reached the suburban population with a combined circulation of 150,000. This gave the producer a definite picture of the market, the day of release. Radio stations WSPR and WMAS broadcast the reports daily at noon time, which was considered the most desirable period, when the grower would be able to tune in without loss of time. The reports allowed growers to make more careful preparation for the following day's market.

A weekly review of the Springfield Wholesale Market was released on Saturdays, giving a report of the volume of business, condition of the market, price report and summary of what happened of interest to growers in their marketing program.

A retail price report was released twice weekly after a canvass of the retail stores, giving information to consumers of the best buys at the counter and roadside stands, with the object of relieving the market of products in heaviest supply during the season when each commodity came into heavy bearing with resulting reasonable prices. Consumers aided in this program and purchased at a substantial savings. Growers likewise moved a greater volume of their products, which increased their net returns.

A special market article was released each week giving canning recipes and menus of locally grown products. This service was originated to encourage the use of growers' produce and fruits during the season when they were at their height and suitable for canning and preserving. These articles were prepared by the Home Bureau of the Hampden County Improvement League staff, and released through the press and radio.

Wholesale Egg and Poultry Auction Reports were prepared on Mondays and Thursdays, and released through the press and radio.

A special apple report was issued daily in conjunction with the Wholesale Produce Market Report, prepared to give a clearer indication of market values and possible marketing factors which would help in moving the abundant offerings. Cold storage figures were released the first of each month, with comparisons for the benefit of producers.

MARKETING COUNSEL OR PROMOTIONAL WORK

As to the third phase of the work of this division, there we enter upon new fields rich in possibilities and capable of producing enormous returns for the labor involved, but fraught with dangers if not prosecuted honestly, carefully and systematically.

The promotional work is dependent for its success on the foundation work carefully done in inspection and market reporting.

INSPECTION OF SURPLUS CROPS

During the early fall months serious surplus problems arose in respect to the apple and squash crops.

Apple Inspection

The McIntosh apple crop was the largest ever produced in the state, resulting in a burdensome surplus, which threatened to disrupt the normal marketing procedure of our fruit growers.

Because of this unusual situation the Federal Surplus Commodities Corporation came into the market with a buying program in early October. Because of the F.S.C.C. requirements that all purchases carry a federal or federal-state certificate showing grade, condition, etc., it was necessary for this division to employ six emergency apple inspectors to handle this work.

Fees Charged

These men worked under the co-operative agreement in operation between this department and the U. S. Department of Agriculture, which has been in effect for several years. Fees were charged for the inspections at rates varying from one to one and one-half cents per box, depending on size of shipments. Up to the end of the fiscal year purchases had totaled about 180,000 boxes, all of which had been examined and certified by our inspectors.

Collection of fees were practically equal to the extra expense of carrying on this emergency work, so that the service was self-supporting.

Clerical Work

As a part of this work, it was necessary for us to establish a temporary district office at Concord, where we were provided office space without charge, at the Middlesex County Extension Service. Much of the clerical work was handled at this Concord office, and the additional expense of clerical personnel, as well as that of the inspections, was covered by the inspection fees.

Check-Loading

Our inspectors also served in the additional capacity as check-loaders for the F.S.C.C., for which we were reimbursed by the Corporation at the rate of $\frac{1}{4}$ ¢ per box or approximately \$1.50 per carload.

Squash Inspection

The squash situation became acute in mid-October. Supplies on the farms of the Commonwealth were fully 50 per cent larger than average. Because of the fact that production had been unusually heavy, and because much of this had been grown by new producers who did not have adequate storage space, a serious problem arose regarding the prompt movement of this crop before hard freezing weather set in.

F.S.C.C. Purchases

The Federal Surplus Commodities Corporation started buying in November and in a period of about three weeks purchased 1100 tons of Massachusetts squash, a large part of which came from the Connecticut valley sections. Here again it was necessary for this division to perform this inspection work. For this purpose five additional inspectors were hired and the clerical work was handled in conjunction with the apple work from the Concord office.

Fees for squash inspection were charged at the rate of 60 cents per ton. Inspectors also acted as check-loaders as in the apple deal, for which we were reimbursed at the rate of 13c per ton.

Consumption—the aim and purpose of production

Low farm prices and lack of balance between industrial and agricultural incomes prompted local agricultural food producers to take serious interest in the consumer end of their business. With the realization that agriculture, like any industry, depends on demand for and consumption of the products, Massachusetts farmers now strongly support the Division's consumer information and promotional work which, as conducted, sometimes takes on an advertising character. Consumer demand for more information had already given impetus to this phase of the Division's work, but it was special promotional programs for relieving market situations on eggs, apples, and some other Massachusetts products that demonstrated to local producers the possibilities of this means for helping the agriculture of the State. Success of the "squash campaign" in the fall of 1939 was convincing proof. The squash program involved the efforts of the Division of Markets, the State Extension Service, and the cooperation of other agencies and consumers.

Market facts that encourage consumers to buy products when seasonal supplies are liberal and moderately priced benefit more than consumers. Guiding demand according to supplies helps stabilize the market and prevent extreme price fluctuations. While the natural tendency is to concentrate attention on native products, the viewpoint of the consuming public must not be slighted and the market situation as a whole must be fairly considered.

Consumers, bewildered by the mass of consumer material thrust upon them, turn to state agencies for market facts and ask for grades by which to judge and compare values. Various means of disseminating the information are used—(1) publications such as retail market reports, Fresh Food Facts, special releases, and inexpensive illustrated material. (2) radio broadcasts and talks to groups. (3) exhibits at fairs and in windows.

Weekly issuance of the Boston Retail Price Report (started in 1920) and collection of similar data in Springfield for file reference has been continued. Retail reports, crops and wholesale market data are basis for much of the consumer market advice prepared and distributed by the Division. Highlights of the brief market news paragraph heading the retail report are expanded for more popular presentation as "Fresh Food Facts". A mailing list (request only) of about 500 sends these reports to homes, schools, hospitals, food dispensing establishments and to newspaper household editors and radio stations. Recipients extend the publicity by posting the releases on bulletin boards, reprinting, re-editing for news articles, and broadcasting on regular household programs. During the year, several thousand copies of the egg law resumés prepared for consumers were distributed. Demand exceeds the supply of the marketing calendar which graphically pictures the seasons when different fruits and vegetables are in liberal supply and moderately priced. For the guide chart on the actual selection of fruits and vegetables demand comes chiefly from younger, inexperienced buyers.

In addition to the broadcasting of consumer market information by outside agencies as mentioned in the preceding paragraph, news of the retail markets was prepared for the regular Saturday noon broadcasts of the New England Radio News Service, and numerous special broadcasts featuring native products were presented. In discussion of food buying with clubs, classes and other groups, attention was also directed to the Massachusetts agricultural industry and its close relationship to other industries of the State.

Producers and distributors join in the sales efforts. The store egg window contest in Worcester resulted in many excellent displays. Egg and apple mechanical exhibits shared by the Department and the Extension Service have been loaned. These exhibits were designed to promote interest in the locally grown products by showing uses and dietary values. The fruit and vegetable models showing what to consider when buying have been sent about the state for demonstrations. At the Eastern State Exposition and the Boston Food Show a turntable exhibit showed the kinds of native grown products as they become available in market from month to month.

Besides three general ways of disseminating market information, other means are used to promote more orderly marketing and to increase consumption of native products,—the 302,000 turkeys and the \$17,000,000 worth of poultry products and the large squash crop, etc. Thousands of egg, cranberry, apple and squash recipes were distributed, arrangements were made for showing such movies as "Give the Fresh Egg a Break", stories were written for courtesy space in trade magazines, and the state egg meal menu contest was conducted in conjunction with the World's Poultry Congress.

The Director of the Division attended the annual meeting of Marketing Officials in Florida, November 13-18, 1939 and discussed with representatives from many of the different states problems relating to the marketing of agricultural products. Each agricultural section in this country has its special problems relating to either production, sale or distribution, and a frank discussion of the many phases of these important subjects is of great importance in a detailed study of analysis of the problems in Massachusetts.

The Division of Markets is fully aware of the magnitude of its responsibility to assist the farmers in every way possible under a more orderly and more profitable marketing plan. It will continue to develop its marketing service with the thought in mind of bringing to the farmers of Massachusetts a greater measure of prosperity in the marketing of local farm products.

REPORT OF THE DIVISION OF PLANT PEST CONTROL

(This division became the Division of Plant Pest Control and Fairs effective November 3, 1939)

The duties in the Division of Plant Pest Control which are chiefly regulatory in their nature, are especially involved with the inspection of nursery and garden pests; the control of the white pine blister rust and apiary inspection. The greater part of eight months is consumed with the inspection of the stock growing in the nurseries. This past season light infestations of the European Pine Shoot Moth were found on Mugho and Scotch pines. The infested shoots were removed and burned. Several years ago this insect was quite prevalent, but in recent years it has been almost absent from the nurseries. The same holds true for the white pine blister rust in the nurseries. This is due to the vigorous campaign carried on against this disease, both by eliminating diseased trees and the removal of the alternate host for a distance of 1500 feet from nursery five-leaved pines.

A careful inspection was made for San José and Oystershell scale, and where infested plants were found they were destroyed or quarantined. When quarantined it is required that the infested plants be treated before being offered for sale. The amount of scale found, however, was almost negligible.

The Japanese Beetle is firmly established in Massachusetts and has been known to be in Springfield for more than ten years. Thousands of beetles are collected there each summer, but as yet, no appreciable damage has been noticed. This insect has been found in two nurseries, but only in small numbers. The quarantine covering the area infested by this insect is rapidly increasing and this should eliminate some of the inconveniences encountered in making shipments from Massachusetts. The nurseries were considerably freer of gypsy moths than for several years, and for this reason our inspections were completed and certificates granted to 328 nurseries at an early date. A great deal of time has been spent in recent years in cleaning the property surrounding the nurseries of various pests. The benefits of this work are shown in the lack of infestations in the nurseries and a decided advantage is obtained by being able to issue certificates in time for fall use.

The European Corn Borer continues to be a serious pest to farmers and market gardeners who desire to raise corn. The infestation in certain areas was lighter than in previous years, while in other areas it was more pronounced. Probably in the State as a whole it remains about the same as in the past few years. There is no question but what the European Corn Borer law is instrumental in keeping the insect in check, but because of the large variety of plants infested by this pest, additional control measures should be practiced. In the case of sweet corn, it is suggested that the cultural control be augmented by spraying—using nicotine or Derris sprays. The Division is continuing the practice of bringing violators of the European Corn Borer law into a hearing where the benefits are explained and a feeling of cooperation assured.

Last winter a check up was made to determine the area infested by the Oriental Moth. This insect was brought into Massachusetts 35 years ago, and a check up in 1930 showed that it had spread approximately 25 miles north of Boston and about the same distance south, while its spread inland had been only a few miles. The recent survey showed that the spread had been very slight in the last 10 years. The insect seems to be more prevalent in the section of Revere where an occasional report is received of both Norway Maples and fruit trees being stripped.

The area infected with the Dutch Elm Disease has increased slightly during the past year, and has brought the disease to a point in New York State only three miles from the Massachusetts border. Hundreds of dead and weak elms within the State have been removed, thereby eliminating many breeding places for the Bark Beetle which is responsible for the spreading of the disease. It is almost a foregone conclusion that it will be only a short time before the Dutch Elm Disease is reported in Massachusetts.

The 1939 season of Apiary Inspection was particularly satisfactory. In Massachusetts, as elsewhere in the country, the prevailing bee disease is American foulbrood; the few mild cases of European foulbrood found are of slight significance. These apiaries in which American foulbrood had been found in 1938, as well as the adjacent apiaries, were re-inspected in 1939. In a large percentage of these apiaries, the disease was found to have been suppressed. Forty-five towns in which disease occurred in 1938, were apparently free from American foulbrood in 1939. If, however, disease had persisted, the apiary was continued in quarantine until such time as the disease could be suppressed. Thus, all the quarantined apiaries were continued under observation and control.

Essex County was thoroughly examined where considerable, but localized American foulbrood was found. The situation in this county is thought to be under control, and in 1940, a noticeable decrease in the prevalence of disease is anticipated. Inspection was extended to include towns not previously visited in Middlesex County and about half of Norfolk County. Additional towns in the Connecticut Valley were also inspected. By means of this "area clean-up" during the past two years, a satisfactory control of American foulbrood has been obtained from the northern boundary of Bristol and Plymouth Counties, north to the State line and west into the hill-towns, to a line between Heath and Granville. Relatively few colonies are kept in the Berkshire hill-towns; ultimately, it is intended to inspect all of these towns. It is hoped to continue the "area clean-up" policy established in 1938 and 1939 gradually enlarging the area under control.

It is apparent that the American foulbrood condition in a major part of the State has been vastly improved during the last two years; further improvement may be anticipated in 1940. New work is desirable south of Boston, as soon as practicable.

During the season, 2,503 calls were made as compared with 2,247 in 1938. The Deputy Apiary Inspectors were—Fred E. Challet, Northampton; Raymond Prud-homme, Lowell; and Howell W. Shuman, Billerica, working under the supervision of Dr. Burton N. Gates, Worcester, as Chief Apiary Inspector.

Continued progress was made in combating the white pine blister rust disease in the State. This fungous disease which is transmitted to white pines by means of wind-borne spores produced on wild and cultivated Ribes (currant and gooseberry) plants is quite generally present throughout the Commonwealth. Control is accomplished by the eradication of Ribes where they are growing within infecting distance of white pines worth protecting.

As heretofore, control work was conducted under the cooperative direction of this Division and the Division of Plant Disease Control, Bureau of Entomology and Plant Quarantine of the U. S. Department of Agriculture. Federal emergency relief funds were allotted by the Work Projects Administration for control work in Massachusetts under the sponsorship of the Bureau of Entomology and Plant Quarantine. Six towns participated by providing transportation facilities for relief workers and 248 individual property owners cooperated in connection with the removal of European black currants and other cultivated Ribes. A limited number of man-days was allotted for work on State Forest lands by enrollees of two of the Civilian Conservation Corps camps in the State.

Excellent field conditions prevailed during the Ribes eradication season, the almost unprecedented drought making work in swamps less difficult and thus more efficient and effective. Control work was performed on a grand total of 109,217 acres from which 1,089,036 wild and 2,662 cultivated Ribes were cleared by the field personnel.

During the approximate periods from January 1-April 30 and from October 1-December 31, pine and control area maps were prepared in the field, on which control areas amounting to 138,972 acres were recorded. These areas included an aggregate of 41,560 acres of white pine.

Miscellaneous control activities included the elimination of blister rust cankers from certain pine plantations on the water supply reservation of the

City of Northampton in the towns of Whately and Williamsburg; a re-check of 67,641 properties in 28 towns in Bristol, Norfolk and Plymouth counties, in connection with the state-wide condemnation and elimination of the European black currant; and the re-examination of the environs of two State Forest Nurseries and four privately-owned nurseries, to insure the production of disease-free white pine planting stock through the maintenance of Ribes-free conditions.

Unusually heavy infection on Ribes was reported in all sections of the State. This fact emphasizes the urgent need for the continued efforts to eliminate Ribes from white pine producing areas in order to adequately maintain the control of the disease.

REPORT OF THE DIVISION OF RECLAMATION, SOIL SURVEY AND FAIRS

(This division was consolidated with the Division of Plant Pest Control into a new Division of Plant Pest Control and Fairs, effective November 3, 1939.)

AGRICULTURAL FAIRS

The season of 1939, from an agricultural fairs standpoint, was a most favorable one. Weather conditions were unusually good during August and September when most of the fairs are held and attendance figures showed a marked increase over those of 1938. A portion of this increase was due to the fact that the hurricane of 1938 reduced fair patronage, especially at the Eastern States Exposition and at fairs held after the day of the hurricane.

The total attendance at all fairs in Massachusetts in 1938 was 555,179, while in 1939 this number increased to 759,688. This shows that 204,509 more people visited fairs in 1939 than did in the previous year. The total number of agricultural exhibits also showed an increase from 61,100 in 1938 to 62,489 in 1939. These figures do not include the number of agricultural exhibits at the Eastern States Exposition at Springfield or the Brockton Fair at Brockton. Again leaving out the Eastern States Exposition and the Brockton Fair, the total number of all exhibits was 75,763, an increase of over 3,000 for the year.

During the year 1939 the Department received applications for an allotment of State prize money from 134 organizations and associations. Of this number 111 held fairs. State premium checks to the number of 2,281 were sent out and of this number boys and girls received 614 for entries in junior classes alone, while young people also entered in the open classes and won many prizes when competing against their elders.

The Department also awarded 269 special two and three streamer blue ribbons; 129 bronze medallions (all of which went to boys and girls), one gold and four silver medals, one certificate of merit and 40 special trophies.

Six fairs had light harness racing and two pari-mutuel racing with running horses. Three fairs had horse shows and draft classes for horses and oxen were put on at twelve fairs.

The Eastern States Exposition received an allotment of State prize money this year for the first time to help in making up the tremendous loss which the Exposition suffered as a result of the 1938 hurricane.

Fair inspection work was carried on as usual and statistical and other data compiled as a result of this work.

The Monthly Fairs Letter has been sent out and information furnished not only to fairs requesting a prize money allotment, but also to garden clubs, and local groups holding exhibits and shows. Speakers for group meetings have been furnished and studies made of local conditions in order to assist fairs in their operation and management.

A list of dates of all fairs has been compiled and that for major fairs printed. The lists of dates of grange and community fairs have been mimeographed and distributed upon request. Radio broadcasts have been prepared

and given during the year stressing the agricultural and educational value of fairs and their service in improving the agriculture of the state.

The division has also assisted fairs in revising their premium lists and bringing them up-to-date and has approved proof of these lists before they have been finally printed and distributed.

The division has also charge of the care, maintenance and upkeep of two State Buildings, one on the Eastern States Exposition grounds, West Springfield, and the other on the Brockton Fair grounds, Brockton. Each of these buildings, including adjacent grounds, cover an area of approximately one acre which is landscaped and laid out with flower beds, trees, and lawns. The West Springfield building was kept open from June until September as a tourist information center under the supervisoin of the Massachusetts Development and Industrial Commission and over 1700 people registered.

YOUNG PEOPLE'S WORK

The division has fostered 4-H club, vocational agricultural school and Future Farmers of America work by cooperating with the state and county 4-H club leaders, vocational departments of the Department of Education and the vocational agricultural departments in high schools and with the Future Farmers of America.

A part of the expense of the Massachusetts 4-H club camp at Amherst has been paid by the Department and 4-H pins have been purchased. Cash prizes have been offered to boys and girls exhibiting at fairs and special trophies, medallions and ribbons have been awarded in judging and other contests.

Vocational school students have been awarded prizes in speaking, judging and other contests and Future Farmers of America have been given prize money to be awarded at their fairs.

This work with young people is very important and the Department has cooperated in their activities to the fullest extent, believing that every encouragement should be given to young people actively engaged in agricultural work.

SPECIAL EXHIBITIONS

The exhibits in the Massachusetts Building on the Eastern States Exposition grounds, West Springfield, and in the Massachusetts Building on the Brockton Fair grounds, Brockton, are the most comprehensive and elaborate of any special exhibit set up by the Department during the year.

This year at Springfield the main part of the building was devoted to a combination agricultural and industrial exhibit and in the two wings the Department of Conservation installed in one an exhibit featuring the fish and game activities of the state and in the other forestry and recreational work. The agricultural activities featured were dairying, fruit growing, poultry and poultry products and a special feature, Massachusetts foods, month by month, showing what foods were available either fresh or processed, each of the twelve months in the year. The poultry exhibit featured R.O.P. and certification work while apple storages available was emphasized in the fruit exhibit. Confectionery, sporting goods, rubber and new products were featured in the industrial exhibits and special mention should be made of the new products display collected and arranged by the Associated Industries of Massachusetts.

The Massachusetts Development and Industrial Commission had a booth and distributed literature and furnished information on the industrial and recreational opportunities in Massachusetts.

The feature exhibit in the Brockton Building was the World's Poultry Congress exhibit which was shown for the first time in Massachusetts after its return from Cleveland, Ohio, where over 75,000 people stopped to see the exhibit during the World's Poultry Congress, July 28-August 7th. The shoe manufacturers of Brockton installed a fine exhibit of shoes made in the Brockton district and the Cambridge Chamber of Commerce put up an exhibit of products made in Cambridge.

Agricultural exhibits were set up by the Division of Dairying and Animal Husbandry, Markets and the State Reclamation Board. There was also an exhibit by the Department of Conservation, Division of Fisheries and Game and displays of vegetables and cut flowers.

Special exhibitions were set up by the Department at the following fairs: Marshfield, August 21-26; Topsfield, September 6-10; Great Barrington, October 2-7 and Bristol County at Segreganset, October 4, 5, 6. Mechanical exhibits, farm products and special set-ups were made at Marshfield, Topsfield and Great Barrington and at the Bristol County Fair the World's Poultry Congress exhibit was displayed set up complete as at Cleveland.

The Department also made an exhibit at the New England Foods Exposition in the Boston Garden, October 14-21, inclusive. Special mention should be made of the Massachusetts State Exhibit at the World's Poultry Congress. This exhibit was made possible through the cooperation of the Massachusetts Development and Industrial Commission. The Commission paid the entire cost of the exhibit, including the expense of transportation and cost of setting up at Cleveland, and the return expense to Massachusetts. The Division of Fairs, however, worked on the proposition from the start and the assistant director acted as chairman of the Massachusetts Exhibit Committee, going to Cleveland with the exhibit and staying throughout the duration of the Congress.

Requests for departmental exhibits of various kinds are constantly increasing which entails additional work and expense as in many cases special material has to be prepared and labor and transportation costs add up very rapidly. Calls for assistance and attendance at meetings are also increasing and result in increasing demands on the division's personnel.

SUMMARY OF PRIZE MONEY ALLOTMENTS AND EXPENDITURES

(15 Agricultural and Horticultural Societies)

Barnstable County Agricultural Society, \$99.50; Barrington Fair Association, \$1020; Bristol County Young Farmers' Show, \$340; Eastern States Exposition, \$4737.40; Essex County Agricultural Society, \$1711.20; Franklin County Agricultural Society, \$1700; Hampshire, Franklin and Hampden Agricultural Society, \$1709.75; Highland Agricultural Society, \$950; Hillside Agricultural Society, \$950; Littleville Community Fair Association, \$696.95; Marshfield Agricultural and Horticultural Society, \$850; Martha's Vineyard Agricultural Society, \$450; Middlesex County Fair, \$469; Plymouth County Agricultural Society, \$600; Union Agricultural and Horticultural Society, \$950; total, \$17,233.89.

(30 Community Fairs)

Agawam Community Fair, \$50; Bolton Farmers' Fair, \$25; Burlington Fair, \$15; Cape Cod Horticultural Society, \$224.50; Chicopee Garden Club, \$20; Dahlia Society of New England, \$50; Dalton Community Fair, \$10; East Blackstone Community Fair, \$50; East Longmeadow Community Fair, \$12; Future Farmers of America, \$45; Granville Community Fair, \$65; Hampden County Boys' and Girls' Exhibit, \$150; Hampden Community Fair, \$15; Heath Agricultural Society, \$175; Elizabeth Peabody House Science Fair, \$75; Massachusetts Horticultural Society, \$82.75; Monson Community Fair, \$89.85; Montgomery Junior Fair, \$12; Natick Fair, \$211.25; Norfolk Junior Fair, \$45; North Shore Horticultural Society, \$85; Orange Boys' and Girls' Club, \$65; Rehoboth Community Fair, \$125; Spencer Fair, \$235.60; Sterling Farmers' Club, \$289; Southwick Community Fair, \$114.75; Springfield Onion and Potato Show, \$219.50; Westfield Young People's Agricultural Fair, \$40; West Springfield Junior Fair, \$8; Woronoco Harvest Festival, \$12; total, \$2,616.20.

(56 Grange Fairs)

Abington, \$8; Acton, \$8.50; Acushnet, \$12; Assonet, \$12; Boylston, \$7; Boxboro, \$12; Brimfield, \$34.90; Cheshire, \$13; Cochituate, \$8; Dedham, \$15;

Dunstable, \$15; Dennis, \$8; Eastham, \$9; Fairhaven, \$20; Granby, \$12; Hanover, \$8; Hilltop, \$27*; Holden, \$8; Holliston, \$8; Leicester, \$15; Lexington, \$20; Ludlow, \$15 Lunenburg, \$12; Mansfield, \$11.25; Merrimac, \$15; Mattapoissett, \$5.50; Nauset, \$8; Nemasket, \$26.50*; Norfolk Pomona, \$8; Northboro, \$12; Norton, \$8; Palmer, \$12; Richmond, \$12; Riverdale, \$20; Rutland, \$12; Rochester, \$15; Stockbridge, \$12; Sherborn, \$8; Sturbridge, \$12; Swansea, \$8; Thrifty, \$15; Waltham, \$8; Warren, \$20; Westboro, \$12; West Boylston, \$8.50; Westford, \$20; West Newbury, \$8; West Springfield, \$7.75; West Stockbridge, \$11.75; West Wareham, \$8; Weymouth, \$8; Wilbraham, \$20; Williamstown, \$20; Wilmington, \$20; Worthington, \$8; total \$725.65.

* Prize money paid for two fairs during fiscal year.

(9 Poultry and Rabbit Shows)

Athol Poultry and Pet Stock Association, \$288.75*; Springfield Poultry Club, \$175; Massachusetts Federation of Poultry Associations, \$74; Boston Poultry Exposition, \$499; Massachusetts State Show Circuit, \$99; Essex County Poultry Association, \$63; Essex County Rabbit Breeders' Association, \$51.50; Holyoke Poultry and Rabbit Breeders' Association, \$149.75; New England Poultry Association, \$200; total \$1600.00.

SUMMARY OF STATE AGRICULTURAL PRIZE MONEY PAYMENTS

Agricultural and Horticultural Societies	\$17,233.89
Community Fairs and Exhibitions	2,616.20
Grange Fairs	725.65
Poultry and Rabbit Associations	1,600.00
Boys' and Girls' Club Work	1,796.80
Badges, medals, cups, etc.	903.69
Special Exhibitions	3,794.19
Miscellaneous payments	354.55
	<hr/>
	\$29,024.97

* Two shows held during fiscal year.

Financial Statement Verified.

Approved.

GEO. E. MURPHY,
Comptroller.

REPORT OF THE STATE RECLAMATION BOARD

The State Reclamation Board, which is the successor to the old Drainage Board, was evidently put into the Department of Agriculture because its original purpose was to hear petitions on problems affecting lowlands and to create reclamation or drainage districts where it was found advisable to drain wet lands to make possible their use for agricultural purposes. The Drainage Board, which was created in 1918, was authorized to perform functions previously exercised by the Superior Court. In 1929 when the demand became general for legislation which would be helpful in carrying on the war against the mosquito, the Reclamation Law (Chapter 252 of the General Laws), was amended. This amended act provided that towns and groups of towns could petition the Reclamation Board, requesting a survey of mosquito breeding conditions in their vicinity. It also provided that after such a survey and report, if funds were appropriated or contributed to carry out the suggestions of the report, the Reclamation Board should create projects for mosquito control work along somewhat the same lines as they had formerly been created in districts for drainage purposes.

Since the enactment of this so-called Mosquito Control Act in 1929, the supervising of these mosquito control projects and the making of surveys for municipalities requesting same has been the principal activity of the State Reclamation Board. During the year 1939, mosquito control activities in Massachusetts carried on under the supervision of the State Reclamation Board were:

1. Supervision of mosquito control projects organized under the "Mosquito Control Act".

2. Maintenance of mosquito control works largely in salt marsh areas, constructed with state funds as an unemployment relief measure during the years 1931, 1932 and 1933.

3. Surveys in cities and towns in response to petitions from municipal administrative officials.

4. Planning of W.P.A. projects for mosquito control drainage.

5. Technical assistance to individuals undertaking to control the mosquito nuisance on their own property, and,

6. Distribution of public information concerning the mosquito problem.

Under the first heading there are three mosquito control projects, funds for which are provided by municipal appropriations plus limited contributions from interested individuals and organizations.

The Cape Cod Project, comprising the fifteen towns in Barnstable County which is the largest single project in the state, carried on its usual construction and maintenance work during the year 1939, and for this purpose the sum of \$36,041.26 was expended. This project is now completing its tenth year of operation. It has reduced the prevalence of mosquitoes on Cape Cod to the point where they are no longer a nuisance. The first control work of the project was directed principally against the salt marsh mosquitoes, which, surveys showed to be responsible for about 90% of the trouble. The control of these mosquitoes is largely accomplished, and the work now consists principally of the maintenance of the extensive salt marsh drainage that has been installed to prevent breeding, and the locating and elimination of sporadic breeding areas that appear during exceptional conditions of tide and rainfall. An important part of the work of the project now is the controlling of other species of mosquito, which with the disappearance of the salt marsh mosquito as the preponderant element, has assumed greater proportional importance. Good progress in the control of fresh water breeding species is being attained. Drainage, oiling, and the elimination of opportunities for breeding near habitations are being carried on.

The records of the prevalence of adult mosquitoes for the last three years show the various species to be present in the following proportions:

Salt marsh species—21% *Mansonia perturbans* 29%;

Species of fresh water breeding—*Aedes* 34%;

Culex 13%, and *Anopheles* 3%.

Mansonia perturbans now presents the greatest difficulties of control on the Cape. Mr. H. J. Myhre, Superintendent, and Mr. R. L. Armstrong, Entomologist of the Cape Cod Project, have made considerable progress in locating the breeding places and determining the habits of *Mansonia perturbans* and in carrying on much-needed experimentation in the means of controlling this particularly baffling species.

The Nantucket Project does not cover as large an area as the Cape Cod Project, but the work was started in the same year and has been ably supported by the town of Nantucket and the summer residents. Expenditures for the Nantucket Project during 1939 were \$2,165.36.

The work of another small project in Belmont consists largely of oiling catch basins.

The projects organized under the state appropriations of 1931, 1932 and 1933 referred to in item 2 above, included practically all of the salt marsh areas of the state, other than those already a part of the Cape Cod and Nantucket projects. These projects consist of fifty-one seacoast cities and towns of the Commonwealth, and in these areas most of the salt marshes have been ditched except for certain sections of the North Shore between Cape Ann and the New Hampshire line. In this particular section much ditching has already been provided, but there are still breeding areas which should be ditched when funds are available. The state has made no appropriation for this construction work since the beginning of C.W.A. activities in the early winter of 1933-1934.

In the fifty-one communities mentioned above maintenance work is carried on annually under the direction of the State Reclamation Board. Funds for this work must be provided by the cities and towns concerned under assessments made annually by the Board. The money is deposited with the State Treasurer and expended at the direction of the Board. All labor is supplied by the towns in which the work is done and the actual supervision is carried on by field agents of the Reclamation Board. In the fiscal year 1939 the amount expended for maintenance work was \$29,158.40. This method of maintaining mosquito control ditching has proved to be a satisfactory one and has resulted in keeping the ditching in an effective condition.

Surveys for determining the source and means of control of the mosquito nuisance were made for some fifteen towns within the state during the year. These surveys were not always productive of action for in some cases the extent of the problem discouraged those interested. On the other hand these surveys have often resulted in increasing the effectiveness of mosquito control in certain communities and in the undertaking of control activities in others where the actual interest and enthusiasm had reached the point of providing funds for attacking the problem.

The officials of six cities and towns have requested surveys during the year for assistance in preparing proposals for W.P.A. projects on mosquito control drainage. In these cases the personnel of the Board has assisted in making out projects for the needed work, in making up the plans and in securing the approval of the state W.P.A. officials for the project. Under an arrangement with these officials all projects for W.P.A. mosquito control work are submitted to the Board before the funds are advanced. When the project is approved and put in operation the Board gives such field supervision as its field force permits.

During the year 1939 the Reclamation Board has given technical assistance to individuals who have undertaken mosquito control on their own property. In most cases such work has been limited to small operations benefiting principally the individuals concerned; yet one man has completed within the last year salt marsh drainage in an extremely bad breeding area involving a total expenditure of \$2500.00. This particular accomplishment has been of benefit, not only to the individual but to the whole community, and has been the incentive for undertaking further work on the part of the town.

Publicity on mosquito control has been given through special articles in the newspapers, radio broadcasts, and talks to Garden Clubs, Women's Clubs, and other organizations. The aim of this publicity has been to acquaint the public with the importance of the responsibility of the individual property owner in preventing on his own land the breeding of mosquitoes that may be the cause of a neighborhood nuisance. Emphasis was also made on the need of continuous public support of mosquito control activities undertaken by the community.

The Reclamation Board during the past year issued a revision of its bulletin, "The Mosquito in Massachusetts", and this bulletin was in considerable demand during the 1939 breeding season. The material in this bulletin is non-technical and is designed to acquaint the general public with the problems of mosquito control and the methods of procedure by which effective control of the pest may be carried on by communities.

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The Commonwealth of Massachusetts

ANNUAL REPORT

OF THE

COMMISSIONER
OF AGRICULTURE

FOR THE

Year Ending November 30, 1940



The Commonwealth of Massachusetts

DEPARTMENT OF AGRICULTURE

To the Honorable Senate and House of Representatives:

In compliance with the provisions of Chapter 128 of the General Laws, I am herewith making my annual report for the year ending November 30, 1940, for the Department of Agriculture.

Respectfully submitted,

WILLIAM CASEY, *Commissioner.*

REPORT OF THE COMMISSIONER

In Massachusetts we have come to a realization that greater diversification of farming is necessary. More attention has been directed during the past year toward the development of self-maintaining farm units in the establishment of a greater measure of independence in our rural sections. There has been a trend toward overspecialization in farm products during the ten-year period from which we are now emerging with its disastrous consequences when mounting surpluses caused low price levels and unprofitable returns to local farmers. In many parts of our state our farmers are making every effort to produce as much of the food supply for the family as possible, and I am committed to a program that will give all possible assistance to a progressive farming population that is concerned with a bigger agriculture on a stronger foundation. As a matter of fact, we are reaching back a few generations and taking a few practical ideas concerning self-maintaining farms that were successful then and applicable now.

During the depression years (and I do not want to give the impression that all Massachusetts agriculture has fully recovered from the stress and strain of 1932) it was quite evident that a shifting of population from urban centers to rural sections was taking place. A new class of part-time farmers now has been established in suburban areas where opportunities were found for the production of farm crops that could be used by the family and aid materially in adjusting the family budget. Food costs were cut to a minimum and the cash income from the mills and factories provided the family with all other essential needs. As a matter of fact, many of these part-time farmers have done an excellent job in 1940 and have produced a surplus of fruits or vegetables that have been in most instances canned or preserved for winter use. We are encouraged with the deep sense of appreciation which these families have for a more rural life and its accompanying advantages.

The agricultural leaders in Massachusetts are now very active in making a comprehensive plan of land utilization. It includes a mapping out of areas in all our cities and towns that are adapted for different agricultural uses. Information of this kind is valuable to part-time farmers and we emphasize the necessity of giving careful consideration to the fundamental principles of land utilization before any purchases of land areas are made. It is a most discouraging outlook for a person who has been working for many years in a factory or mill, always with the hope that eventually he might settle upon a small farm and enjoy the happiness of rural surroundings, to find himself eventually located on land that was never intended for the successful production of agricultural crops.

We have small farms in practically every rural settlement in Massachusetts, and we have fertile land joining our large cities that can produce good crops under wise management; and it is the purpose of the Department of Agriculture and the leaders of other agricultural agencies to assist the part-time farmers in selecting the type of soil that will bring forth a good harvest with the least possible expense. It may be very necessary in the permanent adjustment of our industrial problems in Massachusetts to develop a plan that evolves a permanent part-time farming program combined with part-time in the industries. We enjoyed during the summer months of 1940,—in fact during our normal growing period for farm crops,—shorter hours of labor in the mills and factories and daylight saving during the summer months. The worker has more hours to spend in the garden or participating in other part-time activities under daylight saving schedules.

One of the most serious problems that will confront the farmers during the national defense program is a shortage of trained farm labor. This condition could be relieved

to a great extent by de-centralization of industry that would give rise to working units in rural sections where farm boys and girls could divide their time with agricultural and industrial defense programs and make a substantial contribution to both.

We have in Massachusetts excellent opportunities for agricultural education at schools and colleges, and these educational institutions attracted a greater number of students during the past year. We are proud of the high character of agricultural education that is available to the boys and girls who want to be successful farmers and leaders in rural life.

It has always been extremely interesting to observe the accomplishments of the 4-H Clubs and Junior Achievement Leagues. These boys and girls were especially active during this past year, and worked faithfully and demonstrated a capacity for planning their work carefully and carrying out plans to a successful conclusion. Their exhibits were of excellent quality and were presented to the public in a very attractive way. Anyone enjoying the privilege of attending the Eastern States Exposition certainly was impressed with the practical and intelligent understanding which these boys and girls indicated on farm problems, and must have been quite satisfied that the continuing success of our agriculture appears safe in their hands.

The Massachusetts Development and Industrial Commission has given considerable assistance to agriculture in advertising our products during the past few years, and in 1940 the work of the Commission, through its advertising programs on agricultural products, was quite effective in stabilizing market and preventing heavy losses at critical periods. This type of assistance to our farming population is to be continued, and it is expected to act as an incentive and a stimulus to greater advertising effort on the part of commodity groups themselves to cooperate in developing a greater consumer demand for quality farm products.

Massachusetts is a small state, and primarily industrial, but in all sections of the state from the Berkshires to the sandy beaches of Cape Cod and the North Shore, in our small area of 8,266 square miles we have 35,000 farms that are producing as many as thirty-one separate farm products for the family table during the months of August and September and lesser amounts during other months, but in no case are these farms turning out less than fifteen separate farm products during any one month, and these are in addition to milk, eggs, poultry, and meat products. Our markets are so located that practically every farmer is within 25 miles of a large consuming center where the demand for fresh farm products is much greater than our Massachusetts supply.

The following data shows the value and importance of our agriculture:

Number of farms—1940 US AGRICULTURAL CENSUS	31,897
Value of Farms (Land and Buildings)	\$212,014,287
Total Acres in Farm Land	1,937,963

Detailed Information on Farm Income:

Value of Production (1939)	
Milk (804,000,000 lbs.)	\$25,916,000
Eggs (405,000,000)	9,585,000
Chickens (8,914,000)	5,935,000
Cranberries	4,200,000
Apples	3,000,000
Strawberries	400,000
Pears	60,000
Peaches	40,000
Grapes	40,000
Vegetables	10,000,000

As of January 1, 1940

Cattle (193,000 head)	13,621,000
Sheep (8,000 ")	50,000
Swine (100,000 ")	958,000
Horses (23,000 ")	3,312,000
Hay (594,000 tons)	9,223,000
Tobacco (6,100 acres—9,281,000 lbs.)	2,438,000

REPORTS OF DIVISIONS

The following detailed reports of the various divisions of the department give a brief description and explanation of important functions that were carried on during the past year:

REPORT OF THE DIVISION OF LIVESTOCK DISEASE CONTROL

BOVINE TUBERCULOSIS

During the year a total of 22,821 herd tests representing 238,546 individual animal tests were made. As a result of these tuberculin tests 1,060 cattle were declared "reactors," 295 of which were reported at time of slaughter as showing no visible lesions of tuberculosis.

Interstate movement of cattle.—There were 7,376 head of dairy cattle from outside the state received at the dairy section of the quarantine station at Brighton, and 15,532 head at points other than Brighton—a total of 22,908.

Cattle exports.—Interstate certificates of health were issued and approved on 4,186 head of cattle consigned from Massachusetts to thirty states and three countries.

Licensed dealers in bovine animals.—Licenses were issued to 276 dealers engaged in the business of buying and selling dairy cattle. Thirty-one thousand two hundred forty-five (31,245) cattle were reported as sold for dairy purposes and 4,760 cattle were sold for slaughter.

BANG'S ABORTION DISEASE (Brucellosis)

Fourteen herds were given accredited certificates during the year, and seventy-seven herds were reaccredited—making a total of ninety-one accredited herds containing 3,915 head of cattle. One hundred twenty-three (123) calves were vaccinated by veterinarians in the employ of the Division. Twenty-seven thousand one hundred two (27,102) blood samples were submitted to the laboratory of the Division.

RABIES

Seventy-one cases of rabies (sixty-five dogs, two cows, one calf, one sheep, one pig, and one fox) were reported from forty cities and towns. The heads of 308 animals were received for laboratory examination. Of this number, fifty-three dogs, one fox, and one sheep were reported as affected with rabies. Eight thousand eight hundred seventy-five (8,875) animals were reported as inflicting injuries by biting or scratching persons.

DISEASES OF SWINE

Treatment in prevention of hog cholera was applied to 74,617 head of swine by veterinarians employed by the Division. In addition, authorized treatments were also applied at the owners' expense to 38,160 swine by veterinarians in private practice. Treatments for hemorrhagic septicemia and infections other than hog cholera were applied to 20,454 swine by veterinarians employed by the Division.

EQUINE ENCEPHALOMYELITIS

Reports were received of eleven horses showing symptoms of encephalomyelitis. Of these, eight were classified as positive cases and resulted in four deaths and four recoveries.

GOATS

Tuberculin tests were conducted in nine herds containing seventy-five goats, all of which were negative to the test. Agglutination blood tests were applied in six herds containing fifty-seven goats.

MISCELLANEOUS DISEASES

Actinomycosis. Twenty cases.

Anthrax. One case.

Avian tuberculosis. Infection was found present in two flocks.

Blackleg. Preventive vaccination treatment was applied to 2,001 head of cattle.

Mange. A total of 227 head of cattle affected was reported.

ANNUAL INSPECTION OF NEAT CATTLE, SHEEP, AND SWINE

Inspections were made of 21,237 premises on which were located 215,325 head of cattle, 7,196 sheep, 84,617 head of swine, and 3,531 goats.

(Details of this report are available at the Division office, 100 Nashua Street, Boston, Massachusetts)

Respectfully submitted,

MARK H. GALUSHA, *Director.*

REPORT OF DIVISION OF DAIRYING AND ANIMAL HUSBANDRY

INSPECTION OF DAIRY FARMS

The dairy industry of the state represents an approximate income of twenty-four million dollars annually. Our milk production is approximately 374,000,000 quarts of milk, from 140,000 cows. The value of milk cows and heifers as of January 1, 1940, was figured as \$12,320,000. There is in addition a very sizeable cream and ice cream business, a portion of which must be figured very directly as an integral part of our dairy industry.

Under the statutes the director is required to inspect or cause to be inspected each dairy farm within or without the Commonwealth offering or exposing milk for sale within the Commonwealth. Farms were inspected and registered as follows during 1940:—

Inspected by division employees, 13,230 farms; inspected by milk inspectors or agents of Boards of Health of fifty-eight towns and cities, 12,949 farms; total farms inspected within the fiscal year, 26,179. There were, however, approximately 8,000 farms that had been inspected within a period of less than a year prior to the start of the 1940 work, on which temporary certificates were issued pending current inspection in 1941.

Under Inspection of Barns and Dairies we submit the following:—

- 13,230 farms inspected
- 19,606 temperatures taken of individual producers' milk
- 26,179 individual farms registered—with regular certificates
- 8,000 individual farms registered—with temporary certificates
- 2,098 dealers registered under Section 16F, Chapter 305, Acts of 1932
- 123 country creameries assembled milk for use or sale in the Commonwealth
- 416 hearings held
- 935 Babcock tests made
- 31 weight and test complaints checked
- 180 producers excluded from our market for lack of essential sanitary requirements
- 93 producers reinstated upon compliance with requirements

Numerous tests were made to determine the actual condition of suspicious milk samples. These tests were made to check for specific organisms indicative of mastitis, rropy milk, dirty utensils, or high count milk.

ANIMAL HUSBANDRY

Under the Animal Husbandry activities a great deal of work has been done, for the farmers and for the newly-interested persons who inquired concerning sheep, goat, beef cattle, draft horse, and swine husbandry.

The division was called upon to assist in the establishment of a large sheep farm on Martha's Vineyard. Very rapid progress has been made in the development of this farm. Numerous other small flocks of sheep have been built up by sheep purchased through the division's efforts.

Wool Marketing.—For the sixteenth year the division supervised the Massachusetts Wool Pool, marketing much wool in the grease and manufacturing several thousand pounds of wool into virgin wool blankets. This service was available to all wool growers of the State, and wool was assembled from 384 producers.

Dairy Goat production continues to occupy the interest of more and more people. The seven local associations and the Massachusetts Council of Dairy Goat Breeders have always worked very closely with the department, presenting all problems for our consideration and advice.

Promotional Activities have been carried on by means of hundreds of letters written; numerous meetings attended; radio addresses prepared; and contests arranged, perhaps the most prominent of which were those planned to cover general livestock in connection with the Union Agricultural Meetings. Another outstanding activity was the Junior Fat Lamb and Pig Contest at the Eastern States Exposition, with which the division assisted.

Poultry Work was active with the usual inspections in connection with the grade known as Massachusetts Record of Performance Pullorum Clean. There were fifteen breeders whose plants were inspected. The department is cooperating with the Federal Government in its National Poultry Improvement Plan. Sales records are kept of stock sold, and are verified and sent to purchasers.

1940 SUMMARY OF R. O. P. WORK

Number of birds entered in R. O. P.	11,961
Number of birds passing R. O. P. requirements	4,465
Percent of birds entered that passed R. O. P. requirements	37.32
Average yearly egg production of all birds that passed R. O. P. requirements	247.77
Average yearly egg weight of all birds passing R. O. P. requirements—oz. per dozen	25.76
Average body weight of all birds passing R. O. P. requirements—in pounds per bird	6.19

It is interesting to note that the average yearly egg production of all birds that passed R. O. P. requirements is 247.77 eggs, whereas the state average for all birds is 155 eggs. Yet, Massachusetts has the highest state average in the United States. It is obvious that the breeding influence of R. O. P. flocks is very beneficial to the flocks in the state as a whole.

Poultry Certification.—This work continues with flocks meeting definite requirements in the grade known as Massachusetts Certified Pullorum Clean. All such birds are individually inspected and leg-banded.

Poultry Transportation Law.—The law under which 579 licenses were issued to transport poultry has very quietly, but effectively, proved its value in curtailing poultry thieving.

Poultry Tattooing.—The continued use of the tattoo outfits registered by the State Police and distributed to the poultrymen of the state has been a decided help in checking reported stolen poultry and in apprehending thieves.

MILK DEALERS' LICENSING AND BONDING LAW

The bonding of milk plant operators has continued to function during 1940 from the offices of the Milk Control Board. During the year 611 dealers applied for licenses to operate milk plants. Surety bonds and notes payable to the Commissioner of Agriculture totalled \$642,000.00

The department, in routine fashion, has contacted dealers for producers regarding payments due for milk. The department was able to settle these problems, in most

cases, without drastic action. Adjustments were made with the farmer and dealer which were acceptable to both.

Several dealers voluntarily retired from the milk business after conferences with this department. The businesses were sold in such a way that the producers affected did not lose their market. Other dealers were induced to buy their product from larger dealers and the farmers affected were given a more substantial market.

Collateral was reviewed and the books of the department were audited.

Bonds of seven dealers were distributed, and approximately \$10,000.00 was distributed directly to Massachusetts milk producers. The proper legal procedure was taken before the collateral was seized.

REPORT OF DIVISION OF MARKETS

MARKET REPORTS

Daily market reports are published five days a week covering the Boston, Worcester, and Springfield wholesale and vegetable markets.

For the first full year, the Boston Wholesale Fruit and Vegetable Report has been broadcast from WEEI at 6:45 a.m. and from WBZA at 6:55 a.m. Thus 1940 has been the first year when farmers could get up-to-the-minute prices before starting the work in the fields. The wholesale prices are again broadcast at 12:15 and at 1:30 p.m. The number of radio stations carrying the report has increased, and it definitely is reaching thousands of additional listeners.

A special report dealing with apples and other fruits has been issued regularly through the principal marketing season.

INSPECTIONS

The inspection of fruits and vegetables was done by one permanent and five temporary inspectors. The season of 1939-1940 was an active buying season for the Surplus Marketing Administration, and Government purchases of 326,000 bushels of apples were inspected by our men. The division's permanent inspector spent what time he could in the inspection of commercial packs of apples for sale in the state.

Fresh Egg and Egg Sizing Laws.—The Massachusetts Department of Agriculture is continuing its regulatory functions in connection with the so-called Fresh Egg Law and the Egg Sizing Law. From the results obtained following several thousands of inspections, it very definitely appears that the consumer is reaping the benefits of such legislation. When the law first was enacted, our inspectors found in some cities as many as 50 violations in 100 inspections. At the present time there are, on the average, not more than 5 violations in 100 inspections, taking the state as a whole.

Turkeys.—The inspection of turkeys at Thanksgiving and Christmas is becoming more of a problem each year, and is handled by the egg inspectors. The turkey inspection, in policing the grading of New England "Blue Tag" turkeys, has been a large factor in the sales of Massachusetts turkeys.

Massachusetts is producing in the neighborhood of 275,000 to 300,000 turkeys per year. This represents approximately \$1,000,000 gross income.

Co-ordination of Advertising of Farm Products.—For many years some agricultural products, such as cranberries and oranges, have been widely advertised and the results have been outstanding. The producers of other farm products have found that although the human stomach is rather inflexible, it is necessary continually to inform the public of the value of any commodity to attain its normal sales.

Just within a few years the advertising of farm products has increased by leaps and bounds, and a large part of most commodities are sold under brand names and with extensive advertising. Most Massachusetts crops are not yet sold under brand names, and producers and groups of producers have not the capital or knowledge of advertising necessary for an extensive advertising campaign.

With the intention of leading the way in starting an advertising campaign for Massachusetts farm products, the Development and Industrial Commission, of which the commissioner of agriculture is a member, has appropriated substantial sums which

have been an excellent investment. The advertising budget was made up by key men in the different commodity groups, and the program consisted of certain sums for exhibition of Massachusetts products at national events; such as a poultry exhibit at the Northeast Poultry Producers Council at Atlantic City, assistance in events like the Nashobs Apple Blossom Festival, and other promotional work.

The greatest expense was in a three-fold advertising program of:

- (a) Eleven hundred and seventy-six car cards in cars and busses in Greater Boston. This was accompanied by reprints of these very attractive car cards for store window displays.
- (b) One-minute radio spots on leading radio stations in the state, acquainting consumers with the value of each commodity as it reached its peak of production and low point in price.
- (c) Publication and dissemination of booklets on eggs, vegetables, and apples in co-ordination with the car card and radio advertising.

This advertising program showed definite results. The fact that early crops, such as asparagus, dandelions, early spinach, and rhubarb were not advertised and brought less money in 1940 than in 1939, seemed to show that the market was not too good. The advertising program started in June, and such crops as corn, tomatoes, iceberg lettuce, beans, and bunched carrots received the benefit of the program. They rallied, and brought in the Boston Market over a half-million dollars more than in 1939. This could not have been entirely a coincidence.

Promotional Work.—The Division of Markets, besides furnishing market reports, furnishes five regular weekly radio features of five to ten minutes each, and is frequently called on for additional broadcasts.

The regular broadcasts include a vegetable marketing talk every Wednesday morning at 6:10 over WEEI, and a summary of growing and market conditions and crop and sales prospects of apples over WEEI each Thursday at 6:10 a.m.

Massachusetts is a leading consumer state, and always has been a leader in consumer education. Every Thursday at 1:30 p.m. our retail market investigator broadcasts over WBZ on food values and the condition of the retail food market, and conducts a special broadcast for farm women every Friday at 6:10 a.m. At 12:15 p.m. on Saturday there is a Colonial Network broadcast covering bargains of the week, and featuring health and budget values of local products at their prime.

By cooperation with the Department of Public Works and fruit and vegetable growers, many promotional pictures of native products have been obtained without expense, and have been widely used in newspapers, farm and grocery magazines. In 1940 literally millions of copies of pictures were published featuring the value of native apples, squash, tomatoes, and a variety of commodities. Through the State House News Service the newspapers have been most cooperative, and the news on Massachusetts agriculture has appeared quickly and fully in the press.

The division is really making a worthwhile contribution to the educational programs of several radio stations, and in return the radio stations become of enormous advertising value to Massachusetts agriculture and Massachusetts farm products.

Public Relations Counsel.—Too frequently in the past farmers have assembled in convention and made some very far-reaching decisions and proposed legislation without much thought of the functions and difficulties of the distributors or the attitude of the consuming public. Grocers have not always been fully aware of the problems of the producers, and consumer groups have arisen who have had their own problems only in mind. It has been the policy of the Division of Markets to familiarize each group with the work of all factors in the food business, so that we may all work for orderly marketing without overlapping, and without factional or vocational warfare.

For the first time in the history of the National Association of Marketing Officials their annual convention was held in the Hotel Bradford in Boston. The convention was addressed by the Governor, and the group visited the Cape Cod cranberry bogs and the old and new marketing facilities of the state. It was an opportunity to show Massachusetts agriculture to a national group interested in agriculture, and also it gave the representatives of large shipping states a first hand opportunity to visit one of their best markets.

REPORT OF DIVISION OF PLANT PEST CONTROL AND FAIRS

The inspections in the Massachusetts nurseries are made in order that we might prevent the spread of insect pests and plant diseases. This is accomplished by a careful examination of all growing plants offered for sale and the licensing of all stock brought in from other States. These inspections also assure the purchaser of clean, healthy stock. Each nursery is inspected at least once each year and several inspections are made in the larger nurseries during the growing season.

The first annual inspection is made early in the spring at which time all five-leaved pines are examined to determine whether or not they are infected with the white pine blister rust. This disease is occasionally found, but only in limited numbers. The surroundings of establishments growing five-leaved pines are carefully examined for a distance of 1200 feet from the growing stock and Ribes (currant and gooseberry bushes) are not permitted to be grown in this area.

During the spring and fall an inspection is made of stock sent into the state from outside nurseries. This is accompanied by certificates from the state of origin and is usually free from pests. Whenever it is found that this stock is not up to the Massachusetts standard, it is either subject to treatment, returned to the consignor or destroyed.

The examination of the growing stock in our nurseries this season showed it to be in excellent condition. The policy of not allowing infested stock to remain in the nurseries (and a source of infestation) has for the past several years been very helpful. It has made the inspection less burdensome, both to the inspector and the nurseryman and has eliminated a dangerous source of infestation. Considerable time is spent in maintaining a clean area outside the nurseries, as a protection, and the results fully justify this practice. There are 330 nurseries in Massachusetts holding grower's certificates permitting them to sell nursery stock.

The Japanese Beetle has been found in all of the New England States, but is not as yet so prevalent in Massachusetts as to cause any appreciable damage. Infestations as reported to this department are usually on ornamental plants and may be controlled by spraying, trapping or hand picking. We have not as yet had our attention called to infestations heavy enough to cause defoliation of a single tree. Since this insect passes a part of its life in the soil, it can be controlled there. Treating the soil with arsenate of lead at the rate of 10 lbs. per 1,000 square feet of ground, is a satisfactory control. The department scouts commercial establishments for Japanese Beetles during July and August, in order to eliminate the possibility of spreading the insects on plants consigned to points outside the known infested area.

Infestations of the European Corn Borer were very much reduced in 1940. Many growers reported fewer borers in sweet corn than had been in evidence for several years. Federal and state surveys confirmed this. Many factors could have contributed to the reduction, but quite likely much of it can be credited to the fall plowing. The Massachusetts law requires that corn stubble be plowed or destroyed by December 1. The department is enforcing this law vigorously. A corps of twenty inspectors make a thorough canvass starting December 1 and report all violations to this office. Hearings are held throughout the winter, at which time the violators are asked to appear and explain their failure to comply with the regulation. Fewer violations were reported this year than last, and it is hoped that the number will decrease each year.

The Dutch Elm Disease is within a few miles of Massachusetts, both to the West in New York State and South in Connecticut, but as yet has not been found in this state. The control in the states where it is known to be present is very encouraging.

Apiary Inspection.

All apiaries in which American foulbrood had been found in 1939, were reinspected in 1940. In most instances, these apiaries showed a marked reduction in or a complete disappearance of the disease and in none of these localities has the disease spread. This reinspection reveals a steady improvement in formerly diseased areas. Other bee diseases are seldom encountered today and cause slight damage in Massachusetts.

As in the preceding two years, the established policy was one of "area-clean-up". As fast as the disease has been eliminated or brought under control, it has been possible to extend inspection in adjacent localities. Thus in 1940, it was possible

to substantially extend systematic inspection so that work in Norfolk County was completed; considerable new work was also done in certain sections of Berkshire County; and a beginning made in Bristol and Plymouth Counties. Thus the greater part of Massachusetts has been inspected and in it, American foulbrood is under control or suppressed.

In 1941, it is anticipated that the inspection can be further extended, so as to complete the work in Berkshire County and extend it in Plymouth and Bristol Counties. It may also be possible to reach Barnstable County. The extension of the inspection area will depend in part on the results of reinspection, in all localities where disease occurred in the inspection of 1940.

White Pine Blister Rust.—Substantial progress was made during 1940 in the continued effort to prevent further damage to the forests in Massachusetts by white pine blister rust. The control of this fungous disease is accomplished by the elimination of the alternate host plants (currant and gooseberry bushes) from areas in proximity to valuable white pines.

Following a retarded spring, excellent field conditions prevailed during the summer permitting the effective eradication of currants and gooseberries on control areas aggregating 83,442 acres. From these areas the field personnel removed 491,449 wild and 777 cultivated bushes. The control program during 1940 involved work in 28 towns in the State and provided 79,942 man-hours of useful employment for relief workers. Enrollees at three of the Civilian Conservation Corps camps in the state worked a total of 12,087 man-hours on State-owned lands.

Blister rust control work in Massachusetts is administered by this Division with the active participation of the Bureau of Entomology and Plant Quarantine of the United States Department of Agriculture. Labor is furnished through certification by the local representative of the Federal Work Projects Administration and by the Civilian Conservation Corps. Towns and cities and other state departments in possession of forest lands are also active cooperators in local control programs.

Fairs.—The agricultural fairs of Massachusetts were generally successful in 1940, although during the latter part of the fair season weather conditions were not ideal for open air activities. The weather handicaps, however, did not prevent an increase in attendance over the previous year.

The total attendance at all Massachusetts fairs in 1940 was 776,809, an increase of 17,121 over that of 1939. Agricultural exhibits also showed an increase and totaled 73,858, as against 62,489 in 1939. The grand total of all exhibits for the year was 87,228. This again was more than the figure of the previous year by 11,465. These figures do not include the exhibits of agricultural and industrial products shown at the Eastern States Exposition in West Springfield, and the Brockton Fair at Brockton.

During the year the department received applications for an allotment of State Prize Money from 132 organizations and associations. Of this number 112 held either fair exhibits or shows at which State prizes were awarded. State premium checks were sent out to the number of 1977 and of this number boys and girls received 806 checks for prizes won in Junior Department classes. The department also awarded 287 ribbons, 125 bronze medals, 29 trophies, 4 silver medals and one Certificate of Merit.

Four fairs had light harness racing, and two fairs running horses with pari-mutuel betting. The other fairs with race tracks used them for automobile and motorcycle races, thrill shows, rodeos and the like. Many fairs put on very fine parades of farm livestock, and the owners and animals were announced as the parade passed in review in front of the grandstand. Draft horses and oxen furnish a real attraction at many fairs, and drawing contests on the stone boat are one of the most popular features at fairs today.

All major fairs have been inspected by a representative of the department, and records kept of the number of exhibits, and of all special features and activities of the fair. The smaller fairs have been visited so far as possible, and their exhibits carefully examined.

The department has issued regularly a monthly fairs news letter containing information of value and interest to all fairs. Material for the letter has been received from

fair inspection reports, letters and news releases sent out by fair secretaries and managers, and contributions for the issue have been received from the State College, the State Fairs Association, Extension Service staff, and from other agencies interested in agricultural fairs. Speakers have been supplied when requested to address groups of fair officials, civic and other organization meetings. Studies of fair activities and departments have been made in order that the department might render every assistance possible which would tend to increase the value of fairs to agriculture and the agricultural interests of the State. A printed list of dates of all major fairs has been compiled and printed, and copies made available for distribution upon request. Radio broadcasts have been given from time to time, stressing the educational and agricultural value of fairs, and the service which they render in encouraging boys and girls to become interested in agriculture.

Special assistance in revising and improving premium lists, the introduction of new classes, and in the arrangement of exhibits, as well as suggestions for programs and special features, has also been given, and many fairs have availed themselves of this service.

The State Buildings on the Eastern States Exposition grounds at West Springfield, and the Brockton Fair Grounds, Brockton, are under the direct supervision and control of the department. The care of the grounds, including lawns, plant outs, flower beds, gardens, etc. on which these buildings are situated and the care and maintenance of the buildings is also included.

The division has cooperated with and actively assisted Boys and Girls Work. The 4-H Club members have received not only cash prizes for their exhibits at fairs, but have also been awarded medals, ribbons and trophies, and the Massachusetts 4-H Club Summer Camp at Amherst has received financial assistance which has made this activity possible. Students in vocational schools and departments in high school have had funds made available for many features of their work where there is competition and where prizes are offered for meritorious achievement.

The Vocational Agricultural school student and the Future Farmers of America have also received cash prizes and awards for public speaking and for judging contests. The Department considers the work with young people to be one of the most important activities connected with fairs, and encourages all fairs to extend every opportunity possible to boys and girls to take a prominent part in fairs.

In the State buildings at Brockton and Springfield the Department installs each year very elaborate and extensive educational, agricultural, industrial and recreational exhibits.

The exhibit in the State Building on the Eastern States Exposition grounds, West Springfield, included agricultural exhibits, showing the importance and value of the cranberry, onion and apple industries to the State. A cranberry bog complete, showing the vines, water for flooding, ditches, etc. coupled with a fine display of varieties of berries, equipment, pictures, cranberry products and canned berries made up the display, and over 15,000 booklets on the uses of cranberries were distributed. The onion exhibit showed a harvesting scene with painted background. This was one of the most realistic exhibits which has ever been set up in the Massachusetts Building, and the figures shown in the exhibit, coupled with the onions growing, pulled, topped, graded and bagged, showed step by step how onions are grown, harvested and prepared for sale.

The apple exhibit featured family packages, showing a large variety of containers holding from six to a dozen or more apples, and also a display of apple products. McIntosh was the variety used principally in the display. There were, however, one or two other varieties shown in lesser quantity.

The Department of Conservation installed a most complete exhibit, beautifully landscaped, showing a waterfall pool and trout brook well stocked with fish. The work of the Recreation, Parks and Beaches, Forestry, and Fisheries and Game branches of the Department of Conservation were all shown in the exhibit.

The State Department of Education, Vocational Division, occupied one whole wing and showed what the trade schools are doing to train young people for industry. Classes of boys and girls were in attendance daily and actually carried on their work, just as though they had been in school.

In the other wing of the Building, Savings Bank Life Insurance, the Unemployment Compensation Commission, Massachusetts Development and Industrial Commission and the Boston Port Authority each had booths and showed the activities and scope of these several agencies. Many thousand copies of folders, leaflets, booklets, etc. were given away during the week and valuable contacts were made, innumerable questions answered and information given by those in attendance at the booths.

The Massachusetts State Building at Brockton had a most unusual series of exhibits, both agricultural and industrial, some of the outstanding being the State Department of Conservation and its very attractive exhibit that caused many favorable comments; the State Department of Agriculture's poultry and milk exhibit; the Packard Farm of Brockton's fine vegetable display; the cranberry growers' showing of a cranberry grading machine and real cranberry bog with pump, etc.; the United States Department of Agriculture's exhibits of Soil Conservation Work and the school lunch program under the Surplus Marketing Administration. The South-eastern Massachusetts Shoe Manufacturers had an industrial display of all the latest styles in men's footwear. The Brockton Chapter of the American Red Cross had a very fine exhibit.

Special exhibitions were also set up at the Marshfield, Essex County and Great Barrington fairs. The exhibit at Marshfield featured the Poultry Industry, and the mechanical hen and egg were both used in this exhibit. Pamphlets on "What You Should Know About Eggs" were distributed. The apple storage map with flasher showing location and size of available storage houses was used, and fruit, pictures and charts giving market information and advertising suggestions made up the balance of the display at Topsfield. The Barrington Fair Exhibit had for a background a canvas showing a cranberry bog, and in front varieties of berries and canned products; also varieties of apples, special retail containers and a display of apple products in glass.

At Clark University in Worcester an exhibit was set up in connection with a Conservation Show which the University stages each fall. In addition and in cooperation with the Massachusetts Development and Industrial Commission, two very comprehensive exhibits were arranged; one at the New England Drug and Health Show held in Mechanics Building, Boston, April 30 to May 4; and the other in Atlantic City, New Jersey, October 1 to 4 at the time of and in connection with the North-eastern Poultry Producers Council Fifth Annual Show. The exhibit used at Atlantic City was the reduced, revised and re-conditioned exhibit which was shown at the World's Poultry Congress in Cleveland, Ohio, in August, 1939. The division also assisted in many smaller table and wall displays at meetings, conferences and small shows held in connection with conventions and group gatherings.

REPORT OF THE STATE RECLAMATION BOARD — 1940

During the year 1940, mosquito control activities in Massachusetts carried on under the supervision of the State Reclamation Board included:

1. Supervision of mosquito control projects organized under the "Mosquito Control Act".
2. Maintenance of mosquito control works, largely in salt marsh areas, constructed with state funds as an unemployment relief measure during the years 1931, 1932 and 1933.
3. Surveys in cities and towns in response to petitions from municipal administrative officials.
4. Planning of W. P. A. projects for mosquito control drainage.
5. Technical assistance to individuals undertaking to control the mosquito nuisance on their own property, and,
6. Distribution of public information concerning the mosquito problem.

Under the first heading there are three mosquito control projects, funds for which are provided by municipal appropriations plus limited contributions from interested individuals and organizations.

The Cape Cod Project, comprising the fifteen towns in Barnstable County, which is the largest single project in the state, carried on its usual construction and main-

tenance work during the year 1940, and for this purpose the sum of \$34,222.98 was expended. This project is now completing its eleventh year of operation. It has reduced the prevalence of mosquitoes on Cape Cod to the point where they are no longer a nuisance. The first control work of the project was directed principally against the salt marsh mosquitoes, which, surveys showed to be responsible for about 90% of the trouble. The control of these mosquitoes is largely accomplished, and the work now consists principally of the maintenance of the extensive salt marsh drainage that has been installed to prevent breeding, and the locating and elimination of sporadic breeding areas that appear during exceptional conditions of tide and rainfall. An important part of the work of the project now is the controlling of other species of mosquito, which, with the disappearance of the salt marsh mosquito as the preponderant element, has assumed greater proportional importance. Good progress in the control of fresh water breeding species is being attained. Drainage, oiling, and the elimination of opportunities for breeding near habitations are being carried on.

Mansonia perturbans now presents the greatest difficulties of control on the Cape. Mr. H. J. Myhre, Superintendent, and Mr. R. L. Armstrong, Entomologist of the Cape Cod Project, have, after quite extensive experimentation, made considerable progress in combating this particularly baffling species of mosquito.

The Nantucket Project does not cover as large an area as the Cape Cod Project, but the work was started the same year and has been ably supported by the town of Nantucket and the summer residents. Expenditures for the Nantucket Project during 1940 were \$3,401.64.

The work of another small project in Belmont consists largely of oiling catch basins.

The projects organized under the state appropriations of 1931, 1932 and 1933, referred to in item 2 above, included practically all of the salt marsh areas of the state, other than those already a part of the Cape Cod and Nantucket Projects. These projects consist of fifty-one seacoast cities and towns of the Commonwealth, and in these areas most of the salt marshes have been ditched except for certain sections of the North Shore between Cape Ann and the New Hampshire line. In this particular section much ditching has already been provided, but there are still breeding areas which should be ditched when funds are available. The state has made no appropriation for this construction work since the beginning of C.W.A. activities in the early winter of 1933-1934.

In the fifty-one communities, mentioned above, maintenance work is carried on annually under the direction of the State Reclamation Board. Funds for this work must be provided by the cities and towns concerned under assessments made annually by the Board. The money is deposited with the State Treasurer and expended at the direction of the Board. All labor is supplied by the towns in which the work is done and the actual supervision is carried on by field agents of the Reclamation Board. In the fiscal year 1940 the amount expended for maintenance work was \$29,497.05. This method of maintaining mosquito control ditching has proved to be a satisfactory one and has resulted in keeping the ditching in an effective condition.

In response to requests from officials of eight different municipalities of the state, reports were given as to the breeding conditions, together with suggestions as to how these conditions could be corrected. Within the past year in addition to the requests received from communities in the state, many communications were received from individuals requesting information on mosquito breeding problems. All of these requests were answered by the Board and reports made in cases where specific problems needed investigation. These reports and this information have not always resulted in immediate action, but in most cases, the people concerned have shown considerable interest in the problem and an inclination to arouse community interest so that improvement of conditions might be effected. In many cases these surveys have resulted in improving the effectiveness of mosquito control in certain communities, and in the undertaking of control activities where actual interest and enthusiasm had reached the point of providing funds for attacking the problem.

Several communities have requested information which might assist them in preparing proposals for W.P.A. projects on mosquito control drainage. Whenever such

a project is approved and put in operation, the Reclamation Board has given it such field supervision as its limited field force permits.

During the year 1940 the Reclamation Board has given technical assistance to some individuals who have undertaken mosquito control on their own property. In some cases the work merely benefited the individual owner, yet in many cases sufficient work has been done to make it of benefit to those living in the immediate vicinity.

Publicity on mosquito control has been given through special articles in the newspapers, radio broadcasts, and talks to Garden Clubs, Women's Clubs, and other organizations. The aim of this publicity has been to acquaint the public with the importance of the responsibility of the individual property owner in preventing on his own land the breeding of mosquitoes that may be the cause of a neighborhood nuisance. Emphasis was also made on the need of continuous public support of mosquito control activities undertaken by the community.

The revised booklet entitled, "The Mosquito in Massachusetts", published by the State Reclamation Board in 1939, has been in considerable demand during the past year. The material in this bulletin is non-technical and is designed to acquaint the general public with the problems of mosquito control, and the methods of procedure by which effective control of the pest may be accomplished.

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