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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, is 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; Cochuuate, \$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
	\$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

