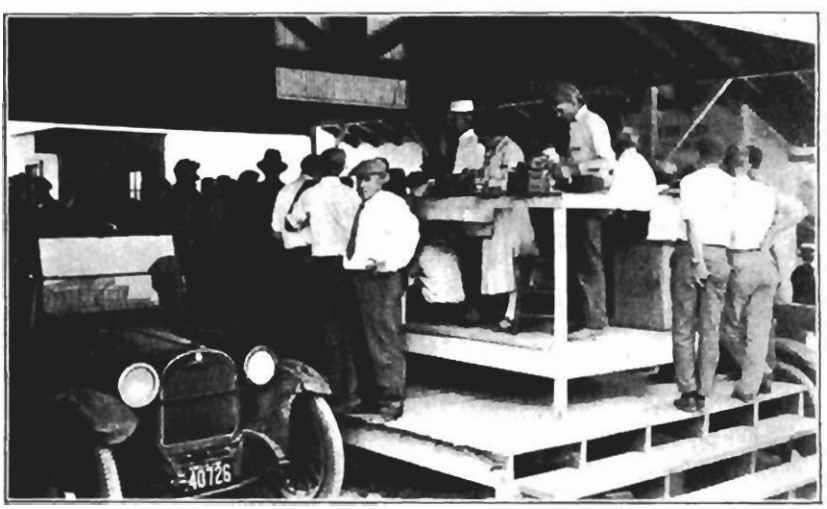
The Strawberry Deal at the
Farmer-Owned Cedarville Auction Market.



Another View of the Same Market.

STATE OF NEW JERSEY
DEPARTMENT OF AGRICULTURE
WILLIAM B. DURYEE, SECRETARY

Seventeenth Annual Report

of the

New Jersey State Department of Agriculture

July 1, 1931-June 30, 1932

Trenton, N. J., November, 1932

State Board of Agriculture

1931-1932

ELMER H. WENE, *President*

EMMOR ROBERTS, *Vice-President*

H. NORMAN FOGG

ALVIN L. GAVENTA

H. B. SCAMMELL

ANDREW R. SCULLY

CLIFFORD E. SNYDER

CHARLES B. PROBASCO

WILLIAM B. DURYEE, *Secretary of Agriculture*

DR. J. H. McNEIL, *Chief,* Bureau of Animal Industry

WARREN W. OLEY, *Chief,* Bureau of Markets

HARRY B. WEISS, *Chief,* Bureau of Plant Industry

CONTENTS

STATE OF NEW JERSEY
DEPARTMENT OF AGRICULTURE

WILLIAM B. DURYEE, *Secretary*

Trenton

November 16, 1932.

To the Senate and General Assembly of the State of New Jersey:

I have the honor to transmit on behalf of the State Board of Agriculture the Seventeenth Annual Report of the New Jersey Department of Agriculture, for the fiscal year ended June 30, 1932.

Respectfully,

W. B. Duryee

SEVENTEENTH ANNUAL REPORT OF THE NEW JERSEY STATE DEPARTMENT OF AGRICULTURE

JULY 1, 1931—JUNE 30, 1932

Report of the Secretary of Agriculture

WILLIAM B. DURYEE

These are times when it is particularly essential that agricultural agencies work definitely in harmony with the needs of agriculture itself. In a state where agriculture is as diversified as it is in New Jersey, actual service to the industry, and through it to the state as a whole, depends upon the ability of the Department of Agriculture to diversify its program so that it is fully adapted to the needs of the entire industry. New Jersey's total agricultural output is the sum of a number of diverse activities constituting specialized fields, highly developed and progressing along intensive lines.

As a means of showing the definite relationship that exists between New Jersey's agricultural industries on the one hand and the department's projects on the other, a procedure is herewith adopted which shows a number of important statistics on each industry and some of the projects which are identified with each one. It is not possible to thus set forth all of the activities of the department, but enough can be set down to demonstrate the coordination that should exist, and that actually does exist, in this state between the producer and the Department of Agriculture.

THE FRUIT AND VEGETABLE INDUSTRY

The production of fruits and vegetables is an intensive and highly specialized type of agriculture which is growing steadily in New Jersey. The requirements for successful production of these crops are exacting, and, accordingly, the functions of a department dealing with the fruit and vegetable industry must be definite and constructive.

Data at hand show that the total number of farms growing fruits and berries in the state is approximately 16,000, and that 5,436 farms are growing vegetable crops as their principal source of income. The receipts of producers growing fruits and berries total $8,607,000 in an average year and the total value of vegetables, exclusive of white potatoes, in an average year is $21,192,000 to the producers. The total value of the output of the entire fruit and vegetable industry therefore makes up approximately $30,000,000 of a total of approximately $100,000,000 received by producers in this state in a normal year.

The principal activities carried on by the Department of Agriculture to aid the fruit and vegetable industry are as follows:

First, the department carries on seed certification work as the means of enabling producers of vegetables to get seed that is true to name and of a desirable type for production purposes. During the past year, 1,434 acres of tomatoes alone were certified for seed purposes in the counties of Burlington, Mercer, Camden, Salem, Cumberland and Gloucester. In the case of the fruit grower, inspections are made of growing stock to protect the purchaser from planting diseased or insect-infested trees.

Second, grades and standards have been set up for some 28 fruits and vegetables. These standards are very similar to those set up by the Federal Department of Agriculture and are recognized in the trade, thereby permitting graded products to be sold on the basis of known standards, facilitating distribution and serving the interests of consumers.

Third, New Jersey is the second-largest producer of tomatoes in the United States. Due to the need for utilizing perfect tomatoes in the new tomato juice industry particularly, practically all tomatoes used by canneries are being sold on a graded basis. During the past season, 30 inspectors were employed by the department to supervise the unloading of tomatoes, thereby permitting payments to be made on the basis of quality. Inspection fees were paid by applicants for the service, an arrangement which placed the field work on a self-supporting basis.

Fourth, the department has taken the initiative in the development of auction markets where large quantities of fruits and vegetables are assembled and sold to the highest bidder. These auctions are located in the intensive fruit and vegetable sections of the state and are operated by local cooperative associations, which charge a per package fee of sufficient amount to keep the markets on a self-sustaining

basis. The total receipts of auction markets handling fruits and vegetables for the fiscal year was $1,206,112 and the total number of packages sold in this manner was 1,137,754.

Fifth, the gathering of statistics is an essential function whose value is not as generally recognized as it should be. Statistics regarding crop estimates are collected by unpaid crop correspondents throughout the state who furnish information to the department at regular intervals. This information is assembled, properly weighed and published for the information of all those interested through what is known as "The Crop Report," in the preparation of which the federal government also cooperates. The availability of statistics or the lack of them is the difference between intelligent planning and going ahead blindly.

Sixth, a distinctive type of information is also assembled through correspondents in areas of the country which compete with the producers of this state in selling a number of the more important commodities. In addition, reports of prices of fruits and vegetables at important markets are obtained. This information is assembled and disseminated to make possible the orderly marketing of New Jersey products and to avoid disastrous gluts.

Seventh, a service known as carlot inspection is provided on a fee basis, whereby growers and shippers of products may have the grade of the shipment definitely determined by an unbiased inspector. Such inspection is helpful in preventing rejection of shipments, in eliminating litigation incident to disputes as to quality, and in developing confidence in the produce sold from the farm areas of the state. The service is necessary in the shipment of New Jersey commodities to foreign countries. Here again, the cost is assumed by the shipper and a federal-state certificate is issued which accompanies the shipment to domestic or foreign points.

Eighth, surveys have been, and are being made with reference to the supplies of fruits and vegetables in the larger municipalities of the state and the methods of distribution in effect. These surveys are conducted in cooperation with chambers of commerce or other civic organizations. Following the completion of the surveys, recommendations are made for improvement in the distribution of perishable commodities. In a number of instances, farmers' markets have been established following such surveys. Producers are able to sell commodities on these markets on a wholesale or retail basis, thereby curtailing handling costs and shortening the road from producer to consumer.

Ninth, by statute, the department is directed to license and bond those who purchase perishable commodities from producers on credit. The total number of buyers licensed and bonded under this act at the conclusion of the fiscal year was 362 and the bonds filed totaled $1,105,000. The act has resulted in the building of a group of reputable and responsible produce buyers and in the elimination of fly-by-night operators.

Tenth, fruit and vegetable growers are directly affected by the present Japanese beetle situation, which has resulted from quarantine regulations and depredations of the insect upon fruits and vegetables. It is necessary for the department to furnish inspection service when fruits and vegetables are destined for shipment outside the quarantined area. Otherwise, the states or areas beyond the boundaries of the quarantine will not accept them.

The department conducts a suppression campaign against the beetle through the placing of traps and the development of parasites. It is estimated that 500,000,000 Japanese beetles were caught in traps during the current season and it is hoped that this heavy inroad upon the number of beetles present this year will be reflected in a lighter infestation during the coming year. Propagation of a specific nematode parasite of the beetle offers the best solution of eventually restoring the natural balance in the insect world, so far as the beetle is concerned, and the department has been culturing the nematode for several years with this idea in mind.

THE DAIRY INDUSTRY

Recent census figures show that 14,158 farms in New Jersey maintain milking cows, and that on 4,769 of these farms dairying is the principal source of income. The normal farm value of milk produced on these farms is $22,000,000, representing 328,000,000 quarts of milk produced annually. It is estimated that the impressive total of $75,000,000 is invested in the milk production industry. New Jersey dairy cows on tests for production lead those of all other states in average production of milk per animal.

The principal activities conducted by the department to aid the dairy industry are as follows:

First, eradication of bovine tuberculosis. Due to the high percentage of infection of tuberculosis among cattle of this state, the eradication of the disease has been a tedious and expensive process. The demands of consumers, of health agencies and of wholesale milk buyers has forced the testing of our cattle and has brought demands upon the de-

partment for tests to be made in every county of the state. As a result of intensive work in this project, approximately 90 per cent of all the cattle in the state have been tested at least once. The cattle are kept under federal and state supervision and are tested regularly as a means of preventing re-infection, a procedure which of course necessitates a vast amount of work in keeping the herds free of disease. During the past year a clean-up program was initiated, as provided by law, and the department is now engaged in seeking out every untested cow in the 10 southern counties of the state and applying the tuberculin test to all animals regardless of whether the owner requests the service or not. This program means the removal of spreaders of disease and is in line with sensible procedure in conserving the funds expended in bovine tuberculosis eradication. New Jersey will be among the first states to eliminate this disease.

Second, service in the testing of cows for contagious abortion is provided by the department and is gradually increasing in scope. In the economic losses it occasions and its possible public health significance, this disease can only be compared with bovine tuberculosis. Work to control the disease is carried on cooperatively with herd owners, who do not receive indemnity for reactors. The service is definitely in the public interest.

Third, the department has created and gotten into action two bodies of leaders in the dairy industry, one the New Jersey Milk Conference Board, having representation of all factors concerned in producing and distributing milk; and the other, the State Dairy Committee, made up entirely of representative producers. Both of these groups, working in close harmony with the department, are developing the state's dairy industry through advocating desirable legislation, educating producers, stimulating demand for milk among consumers, and serving in other ways an industry to which the state is thoroughly adapted.

Fourth, recognizing the need for definite grades of milk in the state as a whole, the department has set up a high grade for pasteurized milk and a high grade for raw milk, both surrounded by every safeguard known to science. Milk produced and handled according to the requirements of these grades is now being distributed in more than 125 municipalities in the state. The department is encouraging the careful producer of milk, helping him to hold his market and making available to the public a supply of milk at reasonable cost which can be depended upon for purity and safety.

Fifth, the department has urged the need for an economic viewpoint so far as milk control agencies are concerned. This principle was ac-

cepted during the past year through the appointment by the Governor with the confirmation of the Senate of two highly qualified milk producers to the State Board of Health, which adopts general, state-wide policies pertaining to the milk supply.

Sixth, there are two regulatory statutes pertaining to the dairy industry which are administered by the department. One of these requires the licensing and bonding of milk buyers and the other, the licensing of cattle dealers. The value of the first law was amply demonstrated during the year, for many milk producers were protected through the bonding requirement against loss through bankruptcies and other casualties of buyers. The second law, which provides for the licensing of cattle dealers, strengthens the arm of the department in its efforts to prevent the introduction of diseased or otherwise unfit animals into the state in violation of laws and regulations pertaining thereto. Under this act, cattle dealers must maintain their sales premises in a sanitary condition, and the act has resulted in the creation of a healthful situation in regard to the whole dairy program. The fact that approximately 30,000 cows were imported into the state for milk producing purposes during the year indicates the need for regulations preventing the introduction of diseased or otherwise unfit cattle.

Seventh, the department administers a private foundation, the New Jersey Junior Breeders' Fund, for the loaning of funds to farm boys and girls for the purchase of purebred livestock. Since the setting up of this fund, more than 750 loans have been granted to young people who wish to start early in life in the dairy business. The fund has helped materially in stimulating the dairy industry of the state and is administered in the interest both of the industry and the coming generation of dairymen by a board of trustees composed of members of the State Board of Agriculture.

Eighth, in taking the lead over a period of years in the development of a sound program for the promotion of New Jersey's dairy industry, the department has progressed, step by step, toward its fulfillment. Public attention has been and is being directed toward recognition of the value of a well organized dairy business near points of consumption. Such an industry is built on the foundation stones of freedom from disease in animals, fair regulation, adequate consideration of the food value of milk, and a basis of financial return to the producer that is in accord with the risks involved and the public benefits that such an industry can give. To all those whose cooperation has contributed

toward obtaining recognition of these fundamental principles and effecting constructive action, we express appreciation on behalf of the industry.

THE POULTRY INDUSTRY

New Jersey leads all states in the average number of chickens per farm and the average value of chickens raised and eggs produced per farm. During the last decade, chickens on farms in New Jersey increased by 61.5 per cent, while egg production increased 170.8 per cent. A total of 20,088 farms in the state have poultry flocks, which produce approximately 36,000,000 dozens of eggs annually. The total income to poultry keepers was $27,164,529 in 1929. More than 20,000,000 baby chicks are hatched annually in the state.

The department has given especial attention to the marketing of eggs and poultry. Auction markets for the sale of eggs have been established in Hunterdon and Cumberland counties, which are among the most intensive egg-producing centers in the United States. The total receipts for eggs and poultry meat at these auctions in the past year were slightly less than $1,000,000.

In addition to aiding in the establishment of these auctions, the department has established grades for the eggs, and polices the grading process. As a result, prices secured by New Jersey producers are higher than those received in any other section of the country, and the auctions have served to increase the prices received by all New Jersey farmers for their eggs. This increase has been due to recognition of the value of standard-quality, fresh eggs. The consumer has benefited through a process which definitely evaluates the quality, size and freshness of the product. New Jersey eggs sold originally at the auctions are being retailed throughout the state in large and small communities. The auctions are highly important in shortening distribution routes and reducing distribution costs.

By keeping "Record of Performance" data on individual hens and supervising breeding flocks, the department has made progress in developing efficient egg-laying machines. A regulatory program pertaining to poultry disease control on farms and at railroad terminals is designed to check the ravages of the diseases which constitute a serious problem where intensive poultry keeping is in effect. The cost of the field work involved in most of the projects carried on to aid the poultry industry is borne by the producers themselves through the payment of fees.

Through the efforts of the department, a program for the promotion of the poultry industry has been prepared and adopted by leaders in

the industry. Some of its objects already have been attained. An outline of the program follows:

POULTRY PROGRAM

Products to be included—

1. Eggs of quality standard.
2. Baby chicks.
3. Meat, including chickens of all breeds, turkeys, squab pigeons, ducks and geese.

Possible methods of attack—

General

1. Survey of poultry industry of state, including census, as means of obtaining basic facts and providing for biennial check on developments.
2. Legislation establishing state mark as quality mark.
3. Analysis of pullorum and fowl pox projects with especial reference to new aspects of the control program.

Eggs

1. Setting up procedure for advertising and popularizing New Jersey eggs, especially those sold at auction, under grade designation.
2. Develop, if possible, a method for stamping quality eggs with individual mark.
3. Develop sales of eggs of definite sanitation standards, both of production plant and healthfulness of layers.
4. Studies looking toward greatest economy and efficiency in operating egg auctions.

Baby Chicks

1. Sales program for quality baby chicks, from healthy, productive flocks.
2. Promotion of program for eastern system of nomenclature as to terms certified, accredited, etc.
3. Cooperation with New Jersey Baby Chick Association in joint advertising of this product at fairs and other expositions.

Meat

1. Grading program for meat birds with state mark tag on better grades.
2. Special emphasis on the turkey industry and popularizing New Jersey state mark for turkeys.

THE WHITE POTATO INDUSTRY

More than 9,000 New Jersey farmers are engaged in the production of white potatoes, and a recent three-year average appraisal shows that the farmers receive $6,557,000 annually from the crop. In 1931, New Jersey ranked first in potato production among the "Intermediate" states and with the exception of Maine, had the highest yield per acre of all states east of the Mississippi.

One of the essentials in white potato production is the utilization of seed that is vigorous, true to name and free of disease. During the year, southern New Jersey farmers produced 904 acres of seed pota-

toes, or 300 acres more than during the previous year. The seed is certified for its vigor and freedom from disease following a series of inspections made during and after the growing season. These inspections are conducted by the department, the cost being paid by the seed grower. As a result of this work, New Jersey seed potatoes rank high in the estimation of commercial potato growers, and the money expended in New Jersey for seed is kept within the state, in so far as the present acreage meets the needs of growers.

As a means of acquainting producers of white potatoes with market quotations and with the trend of shipments from competing areas, the department maintains a market information office in Hightstown, the heart of the central New Jersey commercial potato-producing district, during the shipping season.

A service of carlot inspection based on the use of standard grades is provided by the department. Certification by the department as to the grade of a shipment is prima facie evidence of quality in courts in the United States. Here again, the cost is paid by the shipper or the grower.

Leading growers, distributors and rural bankers in potato districts have been called together for the purpose of developing a program for advancement of the potato industry. The results of such efforts have attracted national attention through economic benefits accruing to potato producers in New Jersey.

OTHER AGRICULTURAL INDUSTRIES

The foregoing statements illustrate the close relationship of the department's work with the needs of the most important agricultural industries of the state. It will be noted in these statements and in the more detailed reports in later pages that, while state services to agriculture are limited in extent, they are nevertheless exceedingly important. State services in relation to food production, distribution and consumption begin where individual and cooperative endeavor must of necessity leave off and they are carried on, not only in the interest of producers, but also in the interest of consumers and taxpayers in general.

Activities in behalf of many other New Jersey agricultural interests could be cited, but it is hoped that sufficient evidence has been adduced to demonstrate the close affiliation between the specific problems of agriculture and the work of the department and to demonstrate the coordination that exists. Detailed evidence of this is given in the reports of the chiefs of the three bureaus of the department,

which cover the subjects already mentioned above and many others. We commend these reports to those who wish detailed information on all phases of the department's work.

About four-fifths of the time of the men employed in the department is devoted to carrying out regulatory projects required by law. The remaining fifth of the time is spent on promotional work for the advancement of New Jersey agriculture, which is also a duty of the department imposed by the organic law.

The department works with the objective of completing projects that have been undertaken at public expense. Many of the problems with which the department has had to cope have been the result of circumstances beyond anyone's control. The motivating purpose underneath the department's projects is to complete them efficiently and economically and eliminate the need for large appropriations. It should be borne in mind that the department is not concerned with experimentation, teaching or research. These activities are carried on at the Agricultural College and the Experiment Station, at New Brunswick.

BEEKEEPING

Some 3,500 persons in New Jersey, of whom 1,750 are farmers, are engaged in beekeeping. The value of honey and wax produced by these beekeepers totals about a quarter of a million dollars annually. More than a million pounds of honey are produced in the state each year. Many growers of tree fruits, blueberries and cranberries rent bees for use during the blossoming seasons of these crops to insure proper pollination and consequent good setting of fruits and berries.

Through the bee inspection service of the department, European foulbrood, one of the most serious diseases of bees, has been largely eradicated in the state and such progress is being made in the elimination of American foulbrood that it is believed that this disease will be shortly reduced to negligible proportions. As a result of a better understanding of bee disease control and the application of improved marketing methods to the sale of honey, the number of colonies of bees in the state has nearly tripled in ten years.

GENERAL FARMING

In addition to the more highly specialized types of agriculture for which New Jersey has become famous, there are nearly 3,000 "general" farms which produce staple crops and engage in one or more of the specialized industries previously mentioned. The total value of

the grain and hay crops produced on these farms in 1930 approximated $15,000,000.

The department serves the interests of these general farms through channels that have been mentioned under dairying, fruit and vegetable production, white potato production and poultry keeping. In addition, the economic program of the department is serving the operators of these farms through the improvement of rural conditions. Among the services rendered may be mentioned the stimulating of rural electrification through the activities of a joint committee organized by the department, the making of studies on the improvement of rural roads and the certification of seeds for some of the staple crops. Another activity serving these and all other farmers in the state has been the carrying on of a program looking toward the development of rural churches as centers for community service. This program is sponsored by a group of rural ministers and laymen interested in the problems of the rural church and in having it meet the needs of modern times in rural communities.

THE NURSERY AND GREENHOUSE INDUSTRY

The intensiveness of many branches of agriculture in New Jersey is illustrated by the large number of nurseries and greenhouses which operate in the state. There are more than 700 such plants in the state and they report sales of more than $9,000,000 annually, according to federal census figures. There is a question as to whether these figures do not underestimate the value of this industry, particularly in view of the rapid strides that have been made in it during recent years.

Services of the department to the nursery industry include inspection of nursery stock and the granting of certificates certifying to the freedom of stock from insect and disease pests. By the use of certificates issued by the department, nursery firms are enabled to sell products throughout the state and in all other states. Furthermore, confidence on the part of the buyer is engendered through the certification by the state of the products. The inspection service keeps under observation infestations of minor importance which might become serious and widespread unless found and eradicated.

The operations of the nursery and greenhouse industries have been seriously hampered by the restrictions of plant quarantines, particularly the quarantine on account of the Japanese beetle. The department, in cooperation with the federal government, renders a distinct service in the inspection of stock for Japanese beetle grubs, and federal-state certificates are issued which enable producers in this field

to market their products outside the quarantined area. This work is made necessary through federal quarantine orders and the disinclination of states free from the beetle to accept shipments that might cause them to be infested.

The department has laid before federal quarantine officials the need for simplification of regulations and the elimination of all unnecessary burdens upon producers which obstruct ordinary trade. The department has taken the position that fair regulation is acceptable but that only such restrictions should be applied as can be justified in a practical way and that may result in checking, temporarily at least, the spread of the beetle to other sections of the country.

Services are thus rendered to an important industry in the state and to the buyers of nursery stock as well. These services are certain to increase the importance of New Jersey's nursery and greenhouse industry.

DEVELOPING NEW JERSEY'S AGRICULTURAL RESOURCES

Agriculture in New Jersey has certain definite needs to which attention is directed as a means of promoting the industry. Under favorable conditions, the annual value of New Jersey's agricultural products could be increased from $100,000,000 to $200,000,000, and agriculture could thereby become the greatest industry in the state in the production of wealth. Such development would be of inestimable value to all the citizens of the state and attention should be directed to devising means for such development. The following are suggested as methods that would be decidedly helpful in this respect:

First, a real, state-wide road program, covering all the roads in the commonwealth, should be developed. While there is a splendid system of main and secondary highways in the state, the fact remains that, on the basis of mileage, more than 40 per cent of our highways are still unimproved. There are approximately 10,706 miles of unimproved roads in the state. The State of Pennsylvania has undertaken the improvement of its rural highways according to a state program and plans to improve more than 20,000 miles of unimproved roads over a period of years.

The improvement of New Jersey's rural roads would result in the opening up of residential areas and the development of farm-to-market roads that would give a great stimulus to development of the state's agricultural resources. These roads need not be of an expensive character, but should be of a type that would make year-round use pos-

sible. Asphalt and oil-penetration roads have proved economical and valuable. At the present time, the construction and maintenance of most rural roads are left with township committees, which in most instances lack funds and equipment for improving them. We greatly need a systematic state-wide attack on the whole problem of road construction and maintenance.

As a means of disseminating information on economical methods of improving rural highways, the department has created a committee on rural government affairs, and meetings have been held in various parts of the state for the purpose of determining the most economical and efficient methods of rural road construction and maintenance. Because an improved rural road in New Jersey is an invitation to large numbers of persons in our metropolitan areas to traverse it, we have definitely passed the stage when rural arteries of traffic can be considered of local importance only. The department has been calling attention to the need for a well-rounded program of rural road improvement for some time and feels that unemployment projects could well be directed toward its solution. Plans should be put in motion at once for a program extending over a period of years, looking toward road improvement as a method of developing our rural resources.

Second, a definite plan of land utilization should be worked out in which all agencies interested in the development of our lands for any purpose should participate. Soil types and topography in New Jersey vary more extensively than in any other state, area considered. Land is needed for parks, water reservoirs, and forest reservations, as well as for agricultural purposes. A recommendation has been made to the Governor that a plan of land utilization should be developed without further delay. The agricultural areas as determined by a survey could be more intensively and intelligently developed from the standpoint of good roads, extension of electric lines and the development of market facilities. The comparatively small size of the state is a factor that favors a definite plan for its development and it would be in the public interest to have a concerted plan which would enable us to classify and utilize more intelligently all land within the borders of the state.

Third, increased consideration must be given to shortening the route between producer and consumer and to eliminating unnecessary and costly handling charges. It is an anachronism that thousands of persons in the state now lack food when, within not more than fifty or one hundred miles of such great human need, food is being thrown

away by hundreds of tons. Such a situation is a challenge to rural and urban residents alike and demands study for its solution.

Fourth, there should be closer coordination between the producers of food on one hand and the very large consumer constituents on the other, which would be to the benefit of both. There is need for the development of a consumer information service, which would enable purchasers of food to fill their needs economically and, so far as possible, from sources within the state. The department is now initiating a state-wide movement for the development of such a service. This will increase the value of the department to consumers in the state and will be a systematic method of supplying information leading to more efficient distribution of the food products that are needed for the economical food budget.

Fifth, present economic conditions make it imperative that adequate credit facilities be available to producers, especially in sections where local banks are not in a position to carry the load. The investment made by New Jersey farmers in seed, fertilizer, feed, labor and equipment calls for an annual expenditure of millions of dollars, particularly in the intensive agricultural sections of the state.

The department is working on a project looking toward the establishment of an agricultural credit corporation for the First Land Bank District, which includes New Jersey. The corporation will be financed through funds of the Reconstruction Finance Corporation. It is readily admitted that unwise credit extension is at the bottom of a great deal of our present agricultural distress, but a system of sound credit, permitting the financing of both crop production and marketing, and the financing of livestock industries, can be set up and can be made a very constructive force in the development of agriculture in New Jersey. It is quite possible to build around an adapted and adaptable system of credit a sound program of utilizing our agricultural resources on a sound economic basis.

Sixth, the tax burden resting on farmers constitutes the most serious economic problem confronting agriculture today. The downswing of farm prices and the rising rate of taxation on general property create a situation that is menacing to the agriculture of the state. The taxes paid by New Jersey farmers are extremely heavy. The rate of increase has been astounding in the last fifteen years. The farmer who paid, for example, a tax of $1.00 per acre at the beginning of the period, paid between $3.20 and $6.67 at the end of the period considered.

With declining incomes, taxes have been an assessment on capital invested and the New Jersey farmer, in addition to paying a heavy tax on real estate, bears the additional burden of paying most of the personal property tax collected. Furthermore, 96 per cent of the general property taxes are expended locally and but 4 per cent are contributed to the maintenance of the state government. The evidence thus adduced demonstrates that not only is the tax on farms beyond the ability of the agricultural industry to sustain, but that a complete revision of the taxation system is essential if our farms are not to be taxed out of existence.

ECONOMY

The department has adopted every means of attaining true economy in its activities. The drastically reduced cost of its operation is demonstrated by the fact that the budget being prepared for the next fiscal year calls for an expenditure of 50 per cent less than the amount appropriated for use during the past year.

True economies can be applied without jeopardizing advances in public welfare that have already been attained. On the other hand, savings secured by certain sacrifices constitute false economy and are deliberately wasteful of public funds already invested. For example, the expenditure of state and federal funds for gipsy moth control in New Jersey has been reduced from $262,000 to $10,800 since 1924 and this highly destructive insect has been completely exterminated. Extreme vigilance must now be exercised if we are to avoid reinfestation from New York, New England and Pennsylvania.

By eliminating this gipsy moth item of $10,800 from the budget an apparent saving of this amount could be made. However, disruption of the practices that are now preventing reinfestation would occur with such elimination, and it is entirely possible that an infestation would get started which would assume serious proportions before it could be discovered and effectively dealt with. This would not only inevitably lead to heavy expenditures for extermination, but would also nullify the work that has already been done and the investment that has already been made in placing New Jersey on the list of states that are free from this pest.

Again, it is entirely possible, of course, to retrench by eliminating the funds for tuberculosis eradication, even though the work of initial testing is nearly completed. The inevitable results would include a spread of bovine tuberculosis, much more costly expenditures in the future for again bringing it under control, and the waste of funds

already spent in so nearly approaching the objective of having tuberculosis-free cattle as a source of milk. Other examples could be cited to illustrate the fact that further retrenchment in the activities of the department would jeopardize heavy investments already made in developing agriculture as a major New Jersey industry.

We recognize that this is not the time for undertaking new projects or for expanding activities. The appropriations requested for the department are only those needed for holding the ground already gained, pending the time when it may be possible to develop further activities that will be of as great benefit to the state as have the projects that are described in this report.

AGRICULTURAL WEEK

The department conducted the seventeenth annual State Agricultural Week, in Trenton, in January. In spite of the curtailment of farmers' incomes, it was evident that the program of the week met the needs of farmers and their families, since the attendance and interest exceeded those of any previous year. The attendance at the Trenton Armory, where the State Farm Products and Equipment Show was held during the week, was over 16,000 persons by actual count, exceeding any previous attendance by more than 50 per cent.

PUBLICITY

As a means of acquainting farmers and others in the state with progress being made along agricultural lines, the department issued a monthly publication called the "State Department Service." This consists of a single sheet, listing in concentrated form the developments of interest from the department's and the farmers' point of view each month. Although this is an inexpensive method of publicizing results and recommendations, the sheet has been reduced to a bi-monthly publication as a means of economy.

In the interest of economy, printed crop reports, which have been issued to a rather large number of farmers who have requested them, are no longer being printed, and mimeographed copies of the reports are being distributed to only a limited number of persons.

We have greatly appreciated the cooperation of the press of the state in the publication of material of timely interest to farmers and consumers. This cooperation has been manifested to a greater extent, we believe, than in previous years and it has been exceedingly helpful in keeping the public informed on the work of the department as well as on subjects that are of value to thousands of individuals.

COORDINATION OF AGRICULTURAL ACTIVITIES

As a means of coordinating agricultural projects and assisting in bringing these into close affiliation with the actual problems of producers, the department arranged for a series of conferences dealing with important agricultural industries. Those who took part in these conferences were representatives of the State Agricultural College and Experiment Station, the State Extension Service, the County Agents' Association of New Jersey, the State Federation of County Boards of Agriculture, the State Grange and the Department of Agriculture.

The purposes of the conferences were: (1) to thoroughly familiarize each agency with work being done by other agencies in the same general field; (2) by careful analysis of the work being done by each agency, to coordinate efforts into a general program and to eliminate overlapping or duplication of functions; (3) to present the coordinated program to leading producers in each agricultural field and secure their judgment on the adaptation of the program to the actual needs of agriculture.

It was generally agreed by those who participated in the conferences that they were successful from every angle, and it has been urged that, as time permits, further work be done along the same line. It is believed that, through such activities, coordination of agricultural projects is secured, greater efficiency in functioning is attained and full economy brought about through the establishment of definite programs and the elimination of any duplication. The spirit of cooperation manifested by both state-supported and farmer-supported agencies was evident in all of the discussions. We believe that the spirit of service which motivates the activities of our state agricultural agencies was further developed and made more effective through these group conferences.

In addition to the meetings just described, the State Board of Agriculture has taken the initiative in calling in other agencies for conferences on specific problems. The members of the board receive no compensation for their services. In serving on committees dealing with certain specific problems, they have given a great deal of time in the service of the state. Particular attention has been given to an analysis of the department's operations in the interests of economy and nothing was left undone that would result in meeting the expressed desires of the Governor, the Legislature and the public generally for reduced expenditures under the present stress of economic circumstances.

LICENSING AND BONDING

According to the provisions of state laws, the Department of Agriculture is charged with the licensing and bonding of produce dealers and milk dealers who purchase goods from farmers on credit, and with the licensing of cattle dealers.

PRODUCE DEALERS

During the 1932 fiscal year, many complex problems arose in the administration and enforcement of Chapter 93, Laws of 1930, as amended and supplemented, which provides for the licensing and bonding of dealers, commission merchants and brokers who buy produce from farmers on a credit basis.

Administrative problems were made more acute than previously by declining prices and restricted markets for all perishable agricultural commodities. There were so many economic factors which interfered with the orderly marketing and distribution of the 1931 fruit and vegetable crops that it would be impractical to enumerate them.

It may be safely stated that the licensees under this act passed through the most disastrous year they had experienced in the past quarter of a century. Had it not been for the produce dealers' licensing and bonding law, the farmers of the state would have had many uncollectible bills. Altogether, 10 of the dealers licensed under this law were financially unable to meet their obligations, so it was necessary to call upon the surety companies who executed the bonds for settlements. The secretary of agriculture, therefore, was called upon to liquidate these claims, which totaled $13,439.04.

In order to assist New Jersey growers, the department held many hearings throughout the state, at which it aided growers in the execution of their claims. These were carefully checked with the records of licensees. In all there were 219 claims filed against licensed dealers.

In the original law, provision was made whereby a grower would bring suit against the surety company whose bond was on file with this department, in the event that a licensee failed to make proper settlements to him for farm produce. Under the amendments and supplements which became effective July 1, 1931, the procedure for the recovery on claims filed by New Jersey growers was changed. A grower now files his claim with the secretary of agriculture, who proceeds against the surety company.

Licenses were issued to 362 applicants who filed bonds amounting to $1,105,000. The number of licensees was smaller than during the previous fiscal year, a fact which may be partially attributed to the

fact that a number of small dealers, brokers and commission merchants discontinued business. The rate for the execution of bonds was increased from $15 to $30, so that many small dealers decided to pay cash for the produce they bought. The surety companies were more particular than they had been in accepting risks and declined to write bonds for persons and firms, which could not show a good financial statement. Penalties totalling $300.00 were collected from violators of the law.

The enforcement of Chapter 93, Laws of 1930, is difficult because a person may purchase produce only a few days in a year or he may shift from one locality to another. Also, instances could be cited of farmers declining to supply the department with information which would enable it to prosecute a person who was operating without a license. Nevertheless, the department has more cases on file in the various courts throughout the state than at any time heretofore.

In judging the success of the licensing and bonding work, consideration must be given to the claims filed against dealers who are unlicensed. The fact that the number and size of claims filed against unlicensed dealers were negligible indicates that the department was successful in protecting New Jersey farmers in their dealings with produce dealers.

NUMBER OF LICENSEES UNDER CHAPTER 93, LAWS OF 1930

County	Licenses Issued	Bonds Filed	Amount of Bonds
Atlantic	22	22	$66,000
Burlington	5	5	17,000
Camden	2	2	6,000
Cape May	1	1	3,000
Cumberland	61	61	190,000
Essex	37	37	113,000
Gloucester	42	42	126,000
Hudson	6	6	23,000
Hunterdon	..	..	.....
Mercer	19	19	57,000
Middlesex	5	5	15,000
Monmouth	19	19	57,000
Ocean	1	1	3,000
Passaic	12	12	36,000
Salem	26	26	78,000
Somerset	1	1	3,000
Sussex	1	1	3,000
Union	3	3	9,000
Warren	4	4	12,000
Outside New Jersey	96	96	288,000
Total	363	363	$1,105,000

MILK DEALERS

The stabilizing effect of the milk dealers licensing and bonding law, Chapter 74, Laws of 1917, as amended, during the past year was of great value to the dairy industry of the state. After the beginning of the year, July 1, 1931, prices for all dairy products declined to a point which virtually eliminated all profit from the production of milk. Credit risks further accentuated the problems of dairymen.

New Jersey milk dealers were confronted with many financial problems during the year. Decline in consumption created a surplus of milk which could not be disposed of to advantage, and the economic situation made collections extremely difficult. Bank failures in some localities placed dealers in a position where they could not discharge their financial obligations if they wished to do so.

Sixty-seven claims were filed against bonds furnished for the year. The amount of funds to be distributed will approximate $25,595.31. Of this amount, several thousand dollars covers claims which were filed in previous years, payment having been delayed because of litigation.

A total of $200 in penalties was collected from unlicensed dealers. This amount is double the amount collected during the previous year. The department has pending in the Court of Chancery an action involving the sum of $5,000.

Since 1926, the number of licensees has gradually declined each year but the value of bonds filed with the department has increased each year. On June 30, 1932, bonds for a total of $492,625.00 were held by the department. They had been furnished by 223 licensees. In the 1931 fiscal year, there were 232 licensees and their bonds totaled $448,575.00. During the past fiscal year, exemption certificates were issued to 27 dealers who only purchased a relatively small amount of milk from producers.

During the year there was a noticeable increase in the number of inquiries coming to the department for information regarding various licensees. It would seem to indicate that New Jersey producers of milk wish to protect themselves from financial losses which might incur through their doing business with unlicensed dealers.

NUMBER OF LICENSEES UNDER CHAPTER 74, LAWS OF 1917
Fiscal Year 1931-32

County	Licenses Issued	Exemptions	Bonds Filed	Amount of Bonds
Atlantic	2	..	1	$10,000
Bergen	4	2	3	11,600
Burlington	15	2	13	21,350
Camden	5	..	3	10,000
Cape May	3	2	1	700
Cumberland	13	2	9	7,425
Essex	9	1	6	38,700
Gloucester	10	5	7	8,350
Hudson	2	..	1	5,000
Hunterdon	10	3	6	22,000
Mercer	22	1	13	28,000
Middlesex	15	..	13	49,500
Monmouth	30	2	20	47,750
Morris	25	1	19	38,700
Ocean	2	..	1	4,500
Passaic	10	1	7	12,000
Salem	6	3	3	5,000
Somerset	13	2	9	12,650
Sussex	6	1	5	110,800
Union	6	..	5	19,500
Warren	14	..	10	28,100
Outside New Jersey	1	..	1	1,000
Total	223	28	156	$492,625

CATTLE DEALERS

The secretary of agriculture is charged with the responsibility of administering and enforcing the provisions of Chapter 28, Laws of 1931, which requires the licensing of all dealers and brokers in dairy, feeding, beef or breeding cattle. This statute went into effect July 1, 1931, and licenses were issued to 218 applicants for the year which closed June 30, 1932.

The law was written for the purpose of controlling certain undesirable practices which had developed in the inter-state and intra-state movement and shipment of cattle, to curb the activities of those who were inclined to disregard existing laws and also regulations which had been promulgated by the State Board of Agriculture for the purpose of safeguarding the dairy industry of the state.

The secretary of agriculture is given broad powers under the act. He may sign and issue subpoenas, administer oaths, receive evidence and require by subpoena the attendance and testimony of witnesses and the production of books, accounts and memoranda. The act makes it mandatory for the secretary of agriculture to revoke licenses for certain violations of the statute. Two licenses were revoked during

the year. An opportunity to defend the charges filed against them was given the defendants.

A number of hearings were held during the year. These covered a wide range of complaints, but most of them were concerned with instances of licensees' bringing cattle into the state which did not meet the requirements of the State Board of Agriculture.

The premises of a number of licensees were inspected by the department to determine whether the proper sanitary conditions existed. In some instances, the dealers were required to make alterations in their stables and improve sanitary conditions. In one or two cases, cattle were moved from the stable they were in to a new location.

NUMBER OF LICENSEES UNDER CHAPTER 28, LAWS OF 1931

County	Licenses Issued
Bergen	6
Burlington	12
Camden	2
Cape May	3
Cumberland	18
Essex	15
Gloucester	4
Hudson	4
Hunterdon	18
Mercer	8
Middlesex	6
Monmouth	8
Morris	20
Ocean	1
Passaic	11
Salem	14
Somerset	8
Sussex	23
Union	10
Warren	16
Outside New Jersey	6
Total	213

THE NEW JERSEY JUNIOR BREEDERS' FUND, INC.

During the past year, the secretary of agriculture and four members of the State Board of Agriculture continued to act as trustees of the New Jersey Junior Breeders' Fund, Inc. The fund, which was established in 1920 by former United States Senator Joseph S. Frelinghuysen and Julius Forstmann, of Passaic, lends money to New Jersey boys and girls for the purchase of purebred livestock. The fund was administered carefully during the year and at the close of the year was in a sound financial condition, in spite of unfavorable economic conditions.

Certain changes were made in the by-laws of the fund during the year. The trustees authorized the secretary-treasurer of the fund to replace a boy's or girl's animal if it seemed that his or her best interests might be served by such action. To meet the situation, an account was set up as a "Reserve for Replacement of Poor Animals" and the sum of $500 was transferred to this from the surplus account. Every year additional sums will be transferred so that this account may be preserved in a liquid condition. It was also thought advisable, in the light of present economic conditions, to establish a reserve for bad debts. The trustees set up an account for this purpose, transferring to it the sum of $1,481.70 from the surplus account.

The trustees increased the amount that may be loaned for the purchase of a calf to boys and girls who have purchased a heifer calf through the fund, have successfully grown it to maturity, and met their obligations to the fund in a business-like manner. The maximum amount of loans in these cases was increased from $100 to $150 for a bred animal, fresh, or due to freshen within 30 days. The by-laws were amended to provide that loans shall not be made to boys or girls to purchase animals from their parents unless there are unusual circumstances in connection with the transaction.

The largest 4-H Club exhibit of livestock in New Jersey is held at the Trenton Inter-State Fair. The number of animals displayed increases each year, indicating that general interest in club work has not diminished. Each year boys and girls who have borrowed from the fund enter their livestock in open classes at the fair in larger numbers. Many of the boys and girls are able to compete with adult breeders and capture at least a fair share of the awards. At the fair it is demonstrated that the quality of the boys' and girls' livestock is showing a decided improvement.

At the 1931 Trenton Inter-State Fair, the fund made approximately $1,000 available for awards. This amount was obtained in interest on loans. Boys and girls who exhibited their animals received a total of $581.50 in awards from the fund.

The following tables analyze the loans made since the fund was established:

SUMMARY OF LOANS BY COUNTIES

County	Calf Loans 1920-31	Calf Loans 1931-32	Pig Loans 1920-31	Pig Loans 1931-32	Poultry Loans 1920-31	Poultry Loans 1931-32	Total
Atlantic	..	..	..	..	..	..	..
Bergen	..	..	1	..	..	..	1
Burlington	36	..	16	..	2	..	54
Camden	..	..	..	..	..	..	..
Cape May	7	..	..	..	..	1	8
Cumberland	49	7	7	..	21	2	86
Essex	..	..	..	..	19	..	19
Gloucester	18	3	..	..	1	2	24
Hudson	..	..	..	..	..	..	..
Hunterdon	60	2	3	..	..	..	65
Mercer	130	1	59	3	9	3	205
Middlesex	97	6	..	1	31	..	135
Monmouth	52	6	12	..	77	..	147
Morris	46	..	1	..	4	..	51
Ocean	17	..	..	..	9	..	26
Passaic	..	..	..	..	..	..	..
Salem	52	8	63	4	6	1	134
Somerset	29	..	1	..	..	..	30
Sussex	51	4	1	..	10	..	66
Union	..	..	..	..	..	..	..
Warren	74	1	3	..	1	..	79
Total	718	38	167	8	190	9	1,130

SUMMARY OF LOANS BY YEARS

Fiscal Year	Calf Loans Number	Calf Loans Amount	Pig Loans Number	Pig Loans Amount	Poultry Loans Number	Poultry Loans Amount	Total Loans Number	Total Loans Amount
1921	30	$ 2,815.00	..	$.....	..	$.....	30	$ 2,815.00
1922	92	7,985.00	16	1,074.98	16	824.25	124	9,884.23
1923	81	6,365.00	21	1,267.25	13	636.25	115	8,268.50
1924	96	8,670.00	10	409.50	14	932.00	120	10,011.50
1925	81	7,065.00	26	1,320.00	17	1,183.50	124	9,568.50
1926	71	6,639.50	25	1,684.30	32	1,563.10	128	9,886.90
1927	83	7,444.00	19	1,240.00	28	1,112.50	130	9,796.50
1928	54	4,644.00	10	620.00	31	890.70	95	6,154.70
1929	55	4,960.00	13	805.00	15	680.65	83	6,445.65
1930	37	3,317.50	15	876.00	17	692.20	69	4,885.70
1931	38	3,467.50	12	769.00	7	308.00	57	4,544.50
1932	38	2,875.00	8	415.00	9	394.00	55	3,684.00
Totals.	756	$66,247.50	175	$10,481.03	199	$9,217.15	1,130	$85,945.68

PUBLICATIONS

The following circulars and other publications were issued during the year as a means of disseminating useful agricultural information and advancing the work of the department:

Circular No. 207—A Complex Method in Climatology and Its Application to Agriculture.

Circular No. 208—Results of the Eleventh Year's Work Against the Gipsy Moth in New Jersey.

Circular No. 209—Contracting for Cannery Tomatoes by Grade.
Circular No. 210—New Jersey Breeders of Registered Dairy Cattle.
Circular No. 211—Studies on Neoaplectana Glaseri, a Nematode Parasite of the Japanese Beetle (Popillia Japonica).
Circular No. 212—New Jersey Prices of Hired Farm Labor, Feedstuffs and Fertilizer Materials and Their Index Numbers, 1910-1931.
Circular No. 213—Official Proceedings of the Seventeenth Annual State Agricultural Convention.
Circular No. 214—The Export Market As an Outlet for New Jersey Apples.
Circular No. 215—Agriculture in New Jersey.
Circular No. 216—Roster of County Boards of Agriculture and State Agricultural Organizations for 1932.
Circular No. 217—Transferring Bees to Movable Comb Hives.
Circular No. 218—The New Jersey Plan of Poultry Standardization and Accreditation and List of Breeding Flocks and Hatcheries Under Official Supervision, 1931-1932.
Circular No. 219—Producers' Auction Markets in New Jersey.
Circular No. 220—Japanese Beetle Spraying Recommendations for the Protection of Ornamental Trees and Shrubs and Non-Commercial Fruit Holdings (Revision of Circular No. 176).
Circular No. 221—New Jersey Farm Prices and Their Index Numbers, 1910-1930.
Circular No. 222—Instructions for the Maintenance of Japanese Beetle Traps.
Circular No. 223—Farm Fires and Farm Fire Insurance.
Circular No. 224—Requirements and Rules for the Inspection and Certification of New Jersey Late-Crop Seed Potatoes.
Circular No. 225—The Treatment of American Foulbrood.
Circular No. 226—The Area Plan of Bovine Tuberculosis Eradication (Chapter 91, Laws of 1927, as Amended).
Circular No. 227—Idle Farms in Hunterdon County, New Jersey.
Circular No. 228—The Apple Industry in New Jersey.
Circular No. 229—Proceedings of the Third Annual Eastern States Conference on Bang's Disease.
Sixteenth Annual Report of the New Jersey Department of Agriculture, 1930-1931.
Booklet—Official Grades for Raw or Pasteurized Milk and Cream.
Pamphlet—Agriculture in New Jersey.
Pamphlet—Poultry Industry in New Jersey.
Pamphlet—New Jersey Grade A Milk.
Twelve issues of monthly publication, "State Department Service."

Report of the Bureau of Animal Industry

J. H. McNeil, *Chief*

TUBERCULOSIS ERADICATION

The original state appropriation for the control and eradication of bovine tuberculosis during the year ending June 30, 1932, was $600,000. This amount was found to be insufficient because of the large number of herds placed under supervision and the high percentage of infection which existed in the herds supplying milk to the City of Newark. A request for an additional $200,000 was made. The Legislature appropriated $100,000, which was made available May 2, 1932. The federal appropriation for the same year was $385,000, but the state appropriation was not sufficient to absorb this entire amount. The amount of indemnity paid by the federal government was reduced, July 1, 1931, to a maximum of $50 for a registered animal and $25 for a grade animal.

By a legislative enactment of 1927, the Department of Agriculture is authorized to inaugurate area tuberculin testing in a county, municipality or other designated area when a majority of the resident cattle owners, representing 75 per cent of the cattle owners in such area, have placed their cattle under supervision. There are a number of counties in the southern section of the state and several in the northeastern section in which area testing can be done. The matter of testing under the area plan has been freely discussed with the cattle owners in these counties and it is hoped that they will consider such testing favorably after proper recommendations have been made.

Tuberculosis control and eradication in the various states of the Union has reached a point where it has been possible for the Bureau of Animal Industry of the United States Department of Agriculture, in cooperation with the states, to fully accredit eight states; namely, Maine, North Carolina, Indiana, Michigan, North Dakota, Ohio, Idaho and Wisconsin. Three of the states named, Wisconsin, Michigan and Ohio, are the states in which 75 per cent of the cattle imported into New Jersey during the past five-year period originated.

Following is a brief summary of the work accomplished in tuberculosis eradication during the 1932 fiscal year:

At the close of the fiscal year ending June 30, 1931, there were under state and federal cooperative supervision in New Jersey 10,292 herds comprising 104,976 animals. At the close of the fiscal year ending June 30, 1932, there were under supervision 12,218 herds comprising 136,020 animals, an increase of 18.71 per cent in the number of herds and 29.57 per cent in the number of animals.

During the past twelve-month period, 190,333 tuberculin tests were made of cattle under supervision. Reactions were found in 17,078 tests, or 8.97 per cent of those made.

During the year 1930-1931, the percentage of reactors on initial tests was 40.77, 18,669 animals having been tested and 7,612 having reacted. During the year 1931-1932, the percentage of reactors on initial tests was 42.27, 2,824 herds of 34,059 animals having been tested and 14,395 animals having reacted.

The percentage of reactors among out-of-state cattle added to herds under supervision during the fiscal year 1930-1931 was 3.37. Of 10,049 cattle tested, 339 reacted. In the year 1931-1932, 20,253 cattle were tested and 424, or 2.09 per cent, reacted.

Second and third retests are made of herds already under supervision. During the fiscal year 1930-1931, 106,247 animals were tested on retest and 1,973, or 1.86 per cent, reacted. During the fiscal year 1931-1932, 136,021 animals were tested on retest and 2,259, or 1.66 per cent, reacted.

During the year 1930-1931, indemnity was paid for 8,128 reactors, 349 of which were registered animals and 7,779, grade animals. During the year 1931-1932, indemnity was paid for 17,974 reactors, of which 704 were registered animals and 17,270, grade animals.

Following is the total amount received by dairymen and breeders for 17,974 reactors condemned to be slaughtered as a result of tuberculin testing during the fiscal year 1931-1932:

Amount Received from Salvage of Reactors	$ 255,437.27
Amount Paid by State of New Jersey in Indemnities	692,162.48
Amount Paid by the United States Government in Indemnities	341,050.31
Total	$1,288,650.06

This is an average of $71.70 per head.

TOTAL STATE INDEMNITY PAID, BY COUNTIES, JULY 1, 1931-JUNE 30, 1932

Atlantic	$ 967.19
Bergen	1,179.68
Burlington	27,696.79
Camden	658.67
Cape May	227.17
Cumberland	3,852.36
Essex	2,102.70
Gloucester	1,926.67
Hudson	69.20
Hunterdon	60,551.01
Mercer	12,836.96
Middlesex	17,910.98
Monmouth	11,687.68
Morris	12,781.78
Ocean	4,211.09
Passaic	1,807.39
Salem	26,560.42
Somerset	49,784.53
Sussex	390,207.21
Union	2,339.53
Warren	62,803.47
State	$692,162.48

The following summary indicates the amount of state indemnity paid for reactors resulting from the tuberculin test during the year ending June 30, ~~1932~~ 1933:

Class of Cattle	Number of Animals	Amount Paid
Registered Animals	704	$ 45,916.39
Grade Animals	17,270	646,246.09
Registered and Grade	17,974	$692,162.48
Average State Indemnity Paid Per Head		
Registered Animal		$65.22
Grade Animal		37.42
Registered and Grade		38.51

The following summary indicates the amount of salvage received by owners for reactors resulting from the tuberculin test during the year ending June 30, 193~~2~~ 3:

Class of Cattle	Number of Animals	Amount Paid
Registered Animals	704	$ 12,799.12
Grade Animals	17,270	242,638.15
Registered and Grade	17,974	$255,437.27
Average Salvage Received Per Head		
Registered Animal		$18.18
Grade Animal		14.05
Registered and Grade		14.21

The following summary gives the estimated total federal indemnities received by owners of condemned cattle:

Class of Cattle	Number of Animals	Amount Paid
Estimated Federal Indemnity Received by Owners		
Registered and Grade	17,974	$341,050.31*

The following summary shows the total amount of money received by owners of condemned animals:

TOTAL AMOUNT RECEIVED BY OWNERS FOR REACTORS (Sum of salvage, federal indemnity and state indemnity)	$1,288,650.06
Average amount received per head by owners for reactors	$71.70

*Actual amount paid.

The following table gives the number of herds under supervision and those fully accredited, by counties, together with the percentage of the cattle in each county which were under supervision June 30, 1932, according to the 1930 Federal Census (January 1):

County	Number of Herds Under Supervision	Herds Fully Accredited	Number of Cattle in County (1930 Federal Census)	Number of Cattle in County Under Supervision June 30, 1932	Percentage of Cattle Under Supervision June 30, 1932
Atlantic	325	279	502*	582	98.6*
Bergen	130	81	2,331	2,116	90.78
Burlington	955	618	15,257*	16,528	97.1*
Camden	240	189	981*	1,109	80.*
Cape May	296	256	848*	1,140	98.93*
Cumberland	1,205	1,020	5,948*	6,570	91.6*
Essex	44	18	2,286	1,919	83.95
Gloucester	922	777	4,431	4,136	93.34
Hudson	17	10	23*	158	92.62*
Hunterdon	1,341	759	18,655	14,956	80.17
Mercer	822	609	7,916*	9,230	98.66*
Middlesex	464	306	8,200	4,671	56.96
Monmouth	795	503	7,503	6,533	87.07
Morris	579	356	8,756	7,343	83.86
Ocean	317	243	1,391	1,388	99.78
Passaic	203	83	2,008*	2,733	97.35*
Salem	1,138	744	13,103	13,006	99.26
Somerset	739	307	8,414*	8,523	98.73*
Sussex	854	241	25,718	19,029	73.99
Union	32	7	2,089	1,981	94.83
Warren	800	433	15,827	12,369	78.15
State	12,218	7,839	152,187	136,020	89.38

(Table continued on next page)

Animals in Herds Under Supervision	Animals in Herds Fully Accredited
19,168 Registered	13,220 Registered
116,852 Grade	62,829 Grade
136,020	76,049

*The 1930 Federal Census figures appear in a number of instances to be either too high or too low. The bureau has indicated the possible discrepancies with an asterisk and has estimated the percentage of cattle under supervision from its own knowledge of the number of cattle in the county.

INITIAL TESTS AND REACTORS, BY COUNTIES, JULY 1, 1931-JUNE 30, 1932

		Animals Tested		Animals Reacting		Percentage Reacting				
County	Number of Herds	Registered	Grade	Registered	Grade	Registered	Grade	Total Animals Tested	Total Animals Reacting	Per Cent of Total Reacting
Atlantic	22	..	28	..	1	...	3.57	28	1	3.57
Bergen	8	3	197	..	18	...	9.14	200	18	9.
Burlington	190	94	1,539	3	392	3.19	25.47	1,633	395	24.19
Camden	42	1	65	..	1	...	1.54	66	1	1.52
Cape May	33	..	54	..	1	...	1.85	54	1	1.85
Cumberland	120	9	339	1	15	11.11	4.42	348	16	4.60
Essex	10	2	176	..	47	...	26.70	178	47	26.40
Gloucester	108	3	245	..	15	...	6.12	248	15	6.05
Hudson	2	..	7	..	..	...	...	7	...	...
Hunterdon	412	215	4,394	28	1,391	13.02	31.66	4,609	1,419	30.79
Mercer	125	28	1,071	1	162	3.57	15.13	1,099	163	14.83
Middlesex	117	28	1,103	1	200	3.57	18.13	1,131	201	17.77
Monmouth	204	85	1,044	1	157	1.18	15.04	1,129	158	13.99
Morris	126	84	1,170	10	307	11.90	26.24	1,254	317	25.28
Ocean	52	7	223	..	66	...	29.60	230	66	28.70
Passaic	16	..	156	..	20	...	12.82	156	20	12.82
Salem	137	33	844	3	202	9.09	23.93	877	205	23.38
Somerset	326	210	3,178	48	1,012	22.86	31.84	3,388	1,060	31.29
Sussex	516	498	12,831	269	8,768	54.02	68.33	13,329	9,037	67.80
Union	10	5	57	..	7	...	12.28	62	7	11.29
Warren	248	149	3,884	27	1,221	18.12	31.44	4,033	1,248	30.94
State	2,824	1,454	32,605	392	14,003	26.96	42.95	34,059	14,395	42.27

NUMBER OF CATTLE TESTED ON INITIAL TEST, NUMBER OF REACTORS RESULTING AND PERCENTAGE OF REACTIONS, BY COUNTIES
JULY 1, 1931-JUNE 30, 1932

County	Number of Cattle Tested	Number of Reactors Found	Per Cent Reactors
Atlantic	28	1	4
Bergen	200	18	9
Burlington	1,633	395	24
Camden	66	1	2
Cape May	54	1	2
Cumberland	348	16	5
Essex	178	47	26
Gloucester	248	15	6
Hudson	7	....	..
Hunterdon	4,609	1,419	31
Mercer	1,099	163	15
Middlesex	1,131	201	18
Monmouth	1,129	158	14
Morris	1,254	317	25
Ocean	230	66	29
Passaic	156	20	13
Salem	877	205	23
Somerset	3,388	1,060	31
Sussex	13,329	9,037	68
Union	62	7	11
Warren	4,033	1,248	31
State	34,059	14,395	42

ACCREDITED HERD WORK

sted by N. J. B. A. I. Veterinarians	Initial Tests					Herd Addition Tests					Other Tests				
	Tested			Reactors		Tested			Reactors		Tested			Reactors	
	Lots	Registered	Grade	Registered	Grade	Lots	Registered	Grade	Registered	Grade	Lots	Registered	Grade	Registered	Grade
31—															
July	228	116	4,384	70	2,861	41	31	347	...	10	313	191	1,714	1	36
August	320	223	5,896	125	3,464	79	37	611	2	8	445	522	3,167	4	77
September	124	127	1,769	29	816	40	49	920	...	17	267	316	2,733	2	84
October	165	54	1,808	28	820	88	142	2,284	3	59	577	741	5,390	13	158
November	96	28	771	3	251	105	80	2,190	4	30	651	905	5,985	6	142
December	119	42	1,458	34	724	529	82	1,880	4	22	686	947	9,288	22	215
32—															
January	184	120	1,944	10	721	159	147	1,663	...	43	722	1,658	6,722	18	158
February	175	108	2,092	5	433	117	141	1,241	3	13	725	1,834	9,092	11	146
March	146	32	1,065	8	157	79	80	1,511	2	30	1,048	2,312	12,022	32	196
April	73	68	388	2	62	71	139	1,478	2	28	1,212	2,068	18,106	20	243
May	295	221	2,748	27	850	84	61	1,100	1	21	843	1,949	11,846	17	123
June	411	102	3,648	19	1,150	82	53	669	1	7	845	995	7,218	9	85
tals	2,336	1,241	27,971	360	12,309	1,474	1,042	15,894	22	288	8,334	14,438	93,283	155	1,663
rcentage of Reactors	...	...	...	29.01	44.01	...	...	...	2.11	1.81	...	...	...	1.07	1.78
erage Percentage	...	...	...	43.37		...	...	...	1.83		...	...	...	1.69	

ACCREDITED HERD WORK
(Continued)

sted by U. S. B. A. I. Veterinarians	Initial Tests					Herd Addition Tests					Other Tests				
	Tested			Reactors		Tested			Reactors		Tested			Reactors	
	Lots	Registered	Grade	Registered	Grade	Lots	Registered	Grade	Registered	Grade	Lots	Registered	Grade	Registered	Grade
31—															
July	8	...	41	...	8	8	3	30	...	2	16	17	322	...	2
August	7	38	35	1	10	5	...	24	...	...	12	41	107	...	1
September	1	...	13	...	11	...	...	...	...	...	1	...	7	...	...
October	5	2	44	2	18	18	...	57	...	...	14	26	196	...	4
November	8	1	20	...	4	4	...	8	...	...	9	103	81	...	2
December	1	...	11	...	...	2	...	2	...	...	5	8	82	...	...
32—															
January	5	...	56	...	5	3	...	26	...	3	12	14	115	...	3
February	3	...	4	...	...	6	1	25	...	...	11	4	172	...	...
March	11	12	54	...	3	1	...	1	...	...	13	141	196	2	...
April	4	...	9	...	...	4	...	14	...	...	15	650	116	...	1
May	...	...	...	...	...	1	...	8	...	...	9	48	83	...	2
June	1	...	3	...	...	4	...	9	...	...	21	303	202	12	4
Totals	54	53	290	3	59	56	4	204	...	5	138	1,355	1,679	14	19
Percentage of Reactors	...	...	...	5.66	20.34	...	...	...	...	2.45	...	...	...	1.03	1.13
Average Percentage	...	...	...	18.08		...	...	...	2.40		...	...	...	1.09	

ACCREDITED HERD WORK
(Continued)

Tested by Accredited Veterinarians	Initial Tests					Herd Addition Tests					Other Tests				
	Tested			Reactors		Tested			Reactors		Tested			Reactors	
	Lots	Registered	Grade	Registered	Grade	Lots	Registered	Grade	Registered	Grade	Lots	Registered	Grade	Registered	Grade
31—															
July	43	35	501	3	189	8	11	101	...	1	122	32	720	2	5
August	76	29	1,065	11	435	22	4	135	...	1	136	26	839	...	7
September	39	7	667	5	481	15	2	149	...	6	125	196	989	...	13
October	31	11	361	1	97	20	8	350	...	4	111	129	1,430	...	27
November	25	10	200	1	58	19	7	261	...	7	159	128	1,255	4	22
December	20	11	148	...	29	22	17	226	...	10	172	258	1,186	1	30
32—															
January	14	3	228	1	117	21	12	173	1	4	130	407	2,360	1	32
February	15	3	92	...	16	23	8	179	...	6	150	363	1,926	5	34
March	14	2	59	...	...	9	28	234	1	10	158	628	2,278	8	83
April	4	1	16	...	2	16	9	164	1	9	244	233	2,308	1	21
May	40	10	221	5	52	28	4	168	...	6	149	191	1,698	1	8
June	80	20	468	2	105	35	6	195	2	10	139	139	1,501	2	37
Totals	401	142	4,026	29	1,581	238	116	2,335	5	74	1,795	2,730	18,490	25	319
Percentage of Reactors	...	...	..	20.42	39.27	...	...	...	4.31	3.17	...	...	...	.92	1.73
Average Percentage	...	...	...	38.63		...	...	...	3.22		...	...	...	1.62	

ACCREDITED HERD WORK
(Continued)

sted by Accredited and Bureau Veterinarians	Initial Tests					Herd Addition Tests					Other Tests				
	Tested			Reactors		Tested			Reactors		Tested			Reactors	
	Lots	Registered	Grade	Registered	Grade	Lots	Registered	Grade	Registered	Grade	Lots	Registered	Grade	Registered	Grade
31—															
July	3	1	82	...	41	1	...	10	...	...	8	12	16	...	...
August	...	...	...	...	...	...	...	...	...	...	2	20	198	...	1
September	1	1	20	...	6	2	1	3	...	...	20	5	69	...	...
October	...	...	...	...	...	1	1	8	...	1	12	21	347	...	4
November	2	10	15	...	...	1	...	6	...	...	50	177	466	...	3
December	2	...	4	...	...	2	...	12	...	5	61	86	452	23	14
32—															
January	2	...	55	...	...	4	...	617	...	24	39	24	1,478	1	14
February	8	6	96	...	6	...	...	...	...	...	8	1	147	...	1
March	7	...	30	...	...	...	...	...	...	...	23	14	513	...	3
April	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
May	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
June	8	...	16	...	1	...	...	...	...	...	...	...	...	...	...
otals	33	18	318	...	54	11	2	656	...	30	223	360	3,686	24	40
ercentage of Reactors	...	...	...	...	16.98	...	...	...	...	4.57	...	...	...	6.67	1.09
verage Percentage	...	...	...	16.07		...	...	...	4.56		...	...	...	1.58	

NUMBER OF CATTLE TESTED UNDER ACCREDITED HERD PLAN DURING THE YEAR ENDING JUNE 30, 1932

	Registered Animals	Grade Animals	Total
Initial Tests			
Tested	1,454	32,605	34,059
Reacted	302	14,003	14,305
Percentage of Reactors			42.26
Herd Addition Tests			
Tested	1,164	19,089	20,253
Reacted	27	397	424
Percentage of Reactors			2.09
Other Tests			
Tested	18,883	117,138	136,021
Reacted	218	2,041	2,259
Percentage of Reactors			1.66
Total			
Tested	21,501	168,832	190,333
Reacted	637	16,441	17,078
Percentage of Reactors			8.97

NUMBER OF REACTORS SLAUGHTERED, BY MONTHS, 1931-1932

July	3,091
August	3,040
September	2,370
October	1,964
November	339
December	1,225
January	941
February	949
March	372
April	411
May	948
June	1,400
Total	17,050

TESTS MADE ON NATIVE CATTLE NOT UNDER STATE AND FEDERAL SUPERVISION, JULY, 1931-JUNE, 1932

Tested by Private Veterinarians

	HERD TESTS				OTHER TESTS				TESTS FOR EXPORT			
	Number of Lots	Animals Tested	Animals Reacted	Per Cent Reacted	Number of Lots	Animals Tested	Animals Reacted	Per Cent Reacted	Number of Lots	Animals Tested	Animals Reacted	Per Cent Reacted
1931												
July	29	145	2	1.38	..	..	..	..	..	..	..	..
August...	22	147	4	2.72	..	..	..	..	..	..	..	..
September	10	75	1	1.33	..	..	..	..	2	2	..	..
October ..	12	40	1	2.50	..	..	..	..	2	19	..	..
November	14	43	3	6.98	..	..	..	..	1	1	..	..
December	22	252	8	3.17	..	..	..	..	2	3	..	..
1932												
January..	9	45	1	2.22	..	..	..	..	1	1	..	..
February.	17	218	7	3.21	1	29	..	..	..	..	..	..
March ...	13	133	3	2.26	..	..	..	..	2	19	..	..
April	18	193	2	1.04	..	..	..	..	..	..	..	..
May	31	340	7	2.06	..	..	..	..	..	..	..	..
June	10	66	1	1.52	..	..	..	..	..	..	..	..
Totals	207	1,697	40	2.35	1	29	..	..	10	45	..	..

INSPECTING AND RELEASING IN-SHIPPED CATTLE

During the year, 30,616 cattle were shipped into New Jersey for dairy and breeding purposes. Upon arrival in New Jersey they were inspected by representatives of the bureau and a check was made to see that they met the state's requirements as to freedom from bovine tuberculosis and Bang's disease.

The following table indicates the number of animals received at the Newark yards by months and the number and percentage which were reconsigned to New York State.

Month	Number of Cattle Received at Newark Stock Yards	Number of Cattle Reconsigned to New York	Per Cent Reconsigned to New York
July	254	145	57.09
August	285	166	58.25
September	301	26	8.64
October	308	190	61.69
November	210	35	16.67
December	153	23	15.03
January	93	29	31.18
February	249	82	32.93
March	211	49	23.22
April	221	104	47.06
May	202	87	43.07
June	187	36	19.25
Totals	2,674	972	36.35

IMPORT CATTLE RECEIVED FROM VARIOUS STATES FOR DAIRY AND BREEDING PURPOSES, 1931-1932

Place of Origin	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	Total
Athenia (Quarantine) ..		1	..	..	..	..	..	..	..	30	..	..	31
Canada	41	..	22	61	23	7	39	..	..	..	..	..	193
Colorado	..	..	..	..	..	..	38	37	..	..	..	..	75
Connecticut	..	..	..	..	..	1	..	..	..	1	1	..	3
Delaware	..	7	1	..	..	11	5	1	..	..	..	..	25
Indiana	..	..	37	23	..	19	..	..	..	..	..	..	79
Iowa	..	..	1	..	..	..	27	..	..	..	..	11	39
Lancaster (Yards)	..	24	25	25	90	61	..	..	..	55	18	..	298
Maryland	5	67	45	34	20	..	1	9	4	1	1	3	190
Massachusetts ...	..	9	..	..	..	1	..	..	2	..	..	..	12
Michigan	443	379	621	633	362	220	53	184	183	242	285	236	3,841
Minnesota	..	..	..	..	15	..	..	..	..	..	..	..	15
New York.....	25	42	79	32	1	30	7	32	..	74	37	4	363
Ohio	169	421	327	215	173	90	86	140	101	189	73	175	2,159
Pennsylvania	173	300	481	423	107	155	101	162	78	421	157	93	2,651
Tennessee	103	76	..	46	49	..	..	..	..	..	..	..	274
Vermont	..	24	1	6	..	5	25	..	..	1	..	2	64
Virginia	70	66	45	7	..	53	84	31	..	1	36	10	403
Wisconsin	1,858	2,132	2,642	3,158	1,611	1,495	750	1,165	1,275	1,424	1,131	1,260	19,901
Totals ..	2,887	3,548	4,327	4,663	2,451	2,148	1,216	1,761	1,643	2,439	1,739	1,794	30,616

BANG'S ABORTION DISEASE CONTROL

The control of Bang's abortion disease in livestock, with special reference to the bovine species, is now claiming the attention, not only of the livestock owner because of the direct losses occasioned by the disease, but also of the health official, who often claims that this disease is freely transmitted to man through the medium of milk and too often ignores the possibility of infection from other sources. In man the disease is known as undulant fever.

Investigators have made observations and have gone so far as to state that in many instances undulant fever is an occupational disease, since they have found that the blood of meat handlers, butchers and others coming in intimate contact with livestock may give a positive reaction to the test for the disease, even if these men are not consumers of milk or other dairy products.

Sanitary officials in practically all the states that are interested in the protection of the dairy industry recognize Bang's disease as a serious menace to livestock and have promulgated rules and regulations preventing the movement into their states of cattle that have given positive reactions to the blood test. Others have made further advances and prevent the movement of any animals into their states unless they originate in herds that have been tested under state supervision and are free from infection.

The following herds, having passed the required number of tests and their owners having complied with the requirements prescribed by the Bureau of Animal Industry of the New Jersey Department of Agriculture for the maintenance of herds for the prevention and eradication of Bang's abortion disease, were issued accredited herd certificates:

OWNER'S NAME	*ADDRESS*
R. L. Benson	Coventry Farm, Princeton
Clarence Dillon	Dunwalke Farm, Far Hills
Dr. J. E. Russell	R. D. No. 4, Trenton
Mrs. Elmer H. Geran	Matawan
Van Zandt Brothers	Blawenburg
L. F. Loree	West Orange
Mrs. F. G. Lloyd	Bernardsville
Upton Pyne Estate	Bernardsville
Gordon Hall	Cranford
J. E. Ward	Stockton
Charles Baldwin	Pennington
F. H. Kinnicutt	Far Hills
E. H. Van Ronk	Somerville
J. L. Hope	Madison
Mrs. Mabel Blagden	Red Bank

OWNER'S NAME	ADDRESS
Mrs. T. E. Bunting	Burlington
D. H. Moore & Sons	Hopewell
W. A. Anderson	R. D. No. 3, Princeton
C. Lawrence Borden	Mickleton
Henry W. Leeds	Westville
A. C. Reeves	R. D. No. 4, Trenton
Harold R. Wainwright	R. D. No. 3, Burlington

There is still maintained one quarantine farm in the state where reactors are held in quarantine until such time as they become unprofitable, when they are sent to slaughter on written order issued by the chief of the Bureau of Animal Industry.

The following summary shows the work accomplished in the program arranged for the control of Bang's abortion disease in the state:

Total number of animals bled since the work commenced	57,268
Total number of animals showing positive reaction	5,680— 9.83%
Total number of animals showing negative reaction	51,688—90.17%
Total number of animals bled on initial test since the work commenced	8,183
Total number of animals showing positive reaction	2,197—26.85%
Total number of animals showing negative reaction	5,986—73.15%

Included in the herds under supervision for the eradication of Bang's abortion disease are 16 owned by the various state institutions. A summary of this work follows:

Total number of animals bled in state institution herds on initial test	1,540
Total number of animals showing positive reaction	375—24.35%
Total number of animals showing negative reaction	1,165—75.65%

HERDS AND ANIMALS UNDER STATE SUPERVISION FOR THE ERADICATION OF BANG'S ABORTION DISEASE AND HERDS ACCREDITED AS BEING FREE OF IT, BY COUNTIES

County	Number of Herds Under Supervision	Number of Herds Fully Accredited	Number of Animals Under Supervision
Atlantic	...	...	...
Bergen	2	...	27
Burlington	13	2	415
Camden	3	...	32
Cape May	6	...	95
Cumberland	2	...	144
Essex	2	1	200
Gloucester	6	2	176
Hudson	...	...	...
Hunterdon	6	1	279
Mercer	27	6	858
Middlesex	10	...	825
Monmouth	13	2	417
Morris	7	1	577
Ocean	...	...	...
Passaic	2	...	53
Salem	1	...	31
Somerset	29	6	992
Sussex	1	...	278
Union	1	1	96
Warren	7	...	307
State	138	22	5,802

AGGLUTINATION BLOOD TESTS MADE IN THE BUREAU LABORATORY FOR BANG'S ABORTION DISEASE

Fiscal Year 1931-1932

County	Number of Tests	Number of Negative Reactions	Number of Positive Reactions	Number of Suspicious Reactions
Atlantic	...	...	...	...
Bergen	53	50	...	3
Burlington	1,079	800	131	148
Camden	56	53	...	3
Cape May	262	190	20	52
Cumberland	328	298	12	18
Essex	479	390	6	83
Gloucester	625	603	1	21
Hudson	...	...	...	...
Hunterdon	521	444	30	47
Mercer	1,841	1,532	79	230
Middlesex	3,388	3,010	92	286
Monmouth	990	831	38	121
Morris	1,159	1,045	39	75
Ocean	...	...	...	...
Passaic	138	129	...	9
Salem	81	76	...	5
Somerset	1,520	1,345	46	129
Sussex	753	690	12	51
Union	68	68	...	...
Warren	678	588	23	67

PHYSICAL EXAMINATIONS

The physical examination of herds of dairy cattle producing New Jersey Grade A raw or pasteurized milk or cream was continued in accordance with the plan outlined in the sixteenth annual report. Examinations of animals are made twice annually or as often as may be considered necessary to maintain the animals in a state of health.

This examination does not include the tuberculin testing of the herds as the grade regulations provide that herds cannot be certified to for the production of this grade of milk unless they are maintained under state and federal cooperative supervision.

A resumé of the work accomplished in the physical examination of herds indicates that 102 herds were examined during the 1931-1932 fiscal year as compared with 136, during the previous year. However, the herds examined during the past year were in much better physical condition than those of the preceding year, showing a distinct improvement from a health standpoint.

PHYSICAL EXAMINATIONS OF HERDS, FISCAL YEAR 1931-1932, BY COUNTIES

County	Number of Herds Examined	Number of Animals Examined	Number of Animals Passed	Number of Animals Isolated	Number of Animals Condemned
Atlantic	...	...	...	...	...
Bergen	...	...	...	...	...
Burlington	1	21	21	...	...
Camden	...	...	...	...	...
Cape May	...	...	...	...	...
Cumberland	...	...	...	...	...
Essex	2	32	29	3	...
Gloucester	...	...	...	...	...
Hudson	...	...	...	...	...
Hunterdon	6	220	207	11	2
Mercer	4	66	64	2	...
Middlesex	3	235	226	7	2
Monmouth	...	...	...	...	...
Morris	58	1,663	1,585	62	16
Ocean	...	...	...	...	...
Passaic	...	...	...	...	...
Salem	...	...	...	...	...
Somerset	26	494	480	12	2
Sussex	...	...	...	...	...
Union	...	...	...	...	...
Warren	2	133	127	5	1
State	102	2,864	2,739	102	23
Per Cent	...	...	95.64	3.56	.8

SUMMARY

Number of herds examined	102
Number of herds in which all animals passed	44—43.14%
Number of herds in which animals were isolated	55—53.92%
Number of herds in which animals were condemned	17—16.67%
Number of herds in which animals were both condemned and isolated	14—13.73%

SWINE DISEASE CONTROL

Very few requests were received for the investigation of contagious diseases of swine. Records indicate that fewer hogs were raised and grown in New Jersey in the 1932 fiscal year than for a number of years. Vaccination to protect hogs against cholera was not generally practiced during the year.

During the fiscal year 1930-1931, it was reported that 61,685 hogs were treated by private veterinarians; during the past fiscal year, 18,332 animals were vaccinated, or about one-third of the number vaccinated in each of the two previous years. The decrease is probably due to the low prices of hogs and the fact that owners did not care to invest any funds in protective inoculation.

SUMMARY BY COUNTIES OF THE NUMBER OF HOGS INOCULATED AS A PROTECTION AGAINST CHOLERA INFECTION JULY, 1931-JUNE, 1932

	Bureau Veterinarians		Private Veterinarians	
	Single Treatments	Double Treatments	Single Treatments	Double Treatments
Atlantic	...	...	3	647
Bergen	...	...	...	...
Burlington	...	...	...	617
Camden	...	...	7	237
Cape May	...	...	61	1,313
Cumberland	...	...	26	132
Essex	...	...	...	...
Gloucester	...	...	1	5,638
Hudson	...	...	...	45
Hunterdon	...	...	28	108
Mercer	...	...	...	488
Middlesex	...	...	...	244
Monmouth	...	...	169	3,214
Morris	...	...	...	87
Ocean	...	...	30	407
Passaic	...	...	...	732
Salem	...	...	83	1,494
Somerset	...	179	...	205
Sussex	...	...	13	614
Union	...	...	185	1,059
Warren	...	...	...	266
State	...	179	606	17,547

Total—Single	179

SUMMARY BY MONTHS OF THE NUMBER OF HOGS INOCULATED AS A PROTECTION AGAINST CHOLERA INFECTION JULY, 1931-JUNE, 1932

	Bureau Veterinarians		Private Veterinarians		Total	
	Single Treatments	Double Treatments	Single Treatments	Double Treatments	Single Treatments	Double Treatments
July	..	179	4	2,406	4	2,585
August	..	...	...	1,069	...	1,069
September	..	...	204	3,132	204	3,132
October	..	...	33	2,233	33	2,233
November	..	...	269	2,680	269	2,680
December	..	...	65	1,202	65	1,202
January	..	...	...	657	...	657
February	..	...	13	656	13	656
March	..	...	...	1,185	...	1,185
April	..	...	4	467	4	467
May	..	...	5	850	5	850
June	..	...	9	1,010	9	1,010
Totals	..	179	606	17,547	606	17,726

Total—Single	606
Total—Double	17,726
Grand Total	18,332

GLANDERS

The bureau received one request to investigate a report of the existence of glanders in a horse. The investigation did not disclose the presence of the disease and further action was not required. The bureau received reports of the results of the testing of 333 animals for glanders. These tests were conducted by private veterinarians on horses maintained in large delivery stables. The reports indicate that the tests were all negative.

MALLEIN TESTS CONDUCTED AND REPORTED *Fiscal Year* 1931-1932

Month	Negative	Positive
July	35	..
August	4	..
September	43	..
October	13	..
November	41	..
December	1	..
January	46	..
February	21	..
March	52	..
April	25	..
May	26	..
June	26	..
Total	333	

ANTHRAX

During the year, the usual plan was followed in soliciting owners of horses and cattle in sections that are termed "Anthrax Districts," for the purpose of inoculating animals in order to produce immunity against anthrax. In conformity with the statutes, this was done at state expense and a total of 947 animals, of which 860 were cattle and 87 were horses, were vaccinated. This is slightly above the average number for the past three years.

Inoculation against anthrax is done to protect horses and dairy animals in the counties where anthrax is prevalent against the possibility of contracting this disease. The value of this protective inoculation is demonstrated by the fact that a cattle feeder imported into the anthrax district a number of steers for feeding purposes and did not have them vaccinated. Later, several of them contracted anthrax and died. Protective inoculation was practiced on the remaining animals and no further deaths occurred.

Following is a comparative summary of the number of cattle and horses vaccinated as a protection against anthrax during the year ending June 30, 1932:

Number of Cattle	Number of Horses	Total
860	87	947

STALLION REGISTRATION

The examining and registering of stallions was done during the year by bureau representatives when owners requested such service. Following is a summary of registrations issued:

STALLIONS REGISTERED, YEAR ENDING JUNE 30, 1932, BY BREEDS

Breed	Number
American Saddle (Registered)	1
Percheron (Registered)	3
Thoroughbred (Registered)	1
Grade Drafts*	2
Totals	7

*Includes grade Percherons, Belgians and Clydesdales.

STALLIONS REGISTERED, BY COUNTIES, YEAR ENDING JUNE 30, 1932

County	Number
Atlantic	..
Bergen	..
Burlington	1
Camden	1
Cape May	..
Cumberland	..
Essex	..
Gloucester	..
Hudson	..
Hunterdon	1
Mercer	..
Middlesex	..
Monmouth	..
Morris	..
Ocean	..
Passaic	..
Salem	1
Somerset	1
Sussex	1
Union	..
Warren	1
Totals	7

POULTRY DISEASE CONTROL

No reports were received by the bureau of serious outbreaks of contagious poultry diseases in the state during the fiscal year. The poultry disease control work of the bureau was confined to the administration of regulatory measures, which included the inspection of carlots of poultry at railroad terminals, the vaccination of poultry as a protection against fowl pox and the testing of flocks for pullorum disease.

POULTRY INSPECTION

Poultry inspection work was done at railroad terminals to determine the presence of any contagious disease that might exist in lots of poultry arriving from other states and to prevent such disease from being transmitted to the poultry of the state.

Following is a summary of the work accomplished:

CARLOTS OF POULTRY FROM VARIOUS STATES RELEASED AT RAILROAD TERMINALS IN NEW JERSEY, JULY 1, 1931-JUNE 30, 1932

Place of Origin	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	Total
Alabama	..	..	..	..	4	3	8	10	32	9	12	9	87
Arkansas	23	32	22	5	4	18	24	12	30	23	16	9	218
Colorado	1	..	1	..	..	..	..	..	..	..	..	1	3
Delaware	..	..	..	..	..	..	1	..	..	..	..	..	1
Florida	..	..	..	..	1	..	..	..	..	1	..	..	2
Georgia	..	..	..	..	..	..	6	6	8	6	5	2	33
Illinois	32	25	34	41	30	41	23	26	26	16	16	11	321
Indiana	41	34	82	54	54	70	40	33	34	27	28	21	518
Iowa	14	3	11	7	12	18	8	2	5	1	2	12	95
Kansas	3	..	..	..	3	6	5	4	2	1	3	8	35
Kentucky	8	3	9	7	13	19	10	12	26	22	30	15	174
Maryland	..	..	..	..	..	..	..	..	3	..	..	..	3
Minnesota	..	..	4	..	2	6	1	..	..	..	..	..	13
Mississippi	..	..	..	..	1	..	1	6	1	..	1	..	10
Missouri	25	33	11	35	34	59	42	26	49	41	41	33	429
Montana	..	..	31	..	..	..	..	..	..	..	..	..	31
Nebraska	13	17	19	14	14	17	12	7	8	6	8	7	142
North Carolina	..	..	..	..	..	5	16	9	14	5	2	1	52
North Dakota	..	..	5	3	7	2	..	..	..	..	..	..	17
Ohio	27	29	41	38	56	44	24	20	19	17	25	26	366
Oklahoma	2	..	..	..	..	3	5	5	11	9	3	4	42
Pennsylvania	..	..	1	..	..	4	..	..	..	1	..	..	6
South Carolina	1	1	..	..	..	6	8	4	10	1	2	..	33
South Dakota	21	17	31	21	11	21	17	9	6	8	8	9	179
Tennessee	27	18	11	3	37	26	24	20	123	78	72	37	476
Texas	..	..	..	..	..	3	3	2	1	..	..	..	9
Virginia	4	1	..	1	22	6	4	5	6	7	5	1	62
Wisconsin	4	6	11	7	6	3	..	..	..	..	1	2	40
West Virginia	..	..	..	..	..	1	..	..	..	..	..	..	1
Totals	246	219	324	236	311	381	282	218	414	279	280	208	3,398

NUMBER OF BIRDS CONDEMNED AND SLAUGHTERED AND THEIR APPROXIMATE WEIGHT, 1931-1932

Month	Number of Cars	Number of Birds	Approximate Weight in Pounds
July	..	..	....
August	..	..	....
September	6	904	3,616
October	11	346	1,394
November	2	118	472
December	13	1,239	4,956
January	4	233	955
February	3	200	813
March	..	..	....
April	..	..	....
May	..	..	....
June	..	..	....
Totals	39	3,040	12,206

CARLOTS OF POULTRY RELEASED AT THE VARIOUS RAILROAD TERMINALS IN NEW JERSEY
July 1, 1931-June 30, 1932

Month	Asb. Pk.	C.R.R. Nrk.	C.R.R. N.J. J.C.	D.L.&W. Boonton	D.L.&W. J.C.	Erie Caldwell	Erie Nrk.	Erie Paterson	Erie Whkn.	Pa. Eliz.	Pa. J. C.	Pa. Nrk.	Total
July	..	..	52	..	55	..	58	..	57	10	1	13	246
August	..	1	32	..	60	..	46	..	56	8	2	14	219
September	..	..	22	..	88	..	73	..	100	10	7	24	324
October	..	1	15	8*	52	..	49	..	78	8	6	19	236
November	..	..	64	15*	50	..	48	..	80	10	16	28	311
December	..	..	57	4*	95	6*	60	..	108	10	7	34	381
January	..	..	61	..	94	..	42	..	60	7	2	16	282
February	..	..	60	..	53	..	45	..	36	8	2	14	218
March	..	1	178	..	84	..	53	..	64	10	1	23	414
April	..	2	109	..	60	..	49	..	37	7	3	12	279
May	..	..	95	..	55	..	39	1	51	8	6	25	280
June	..	..	48	..	41	..	37	1	52	8	5	16	208
Totals.	..	5	793	27*	787	6*	599	2	779	104	58	238	3,398

*Carlots of geese.

Following is a comparison of the number of carlots of poultry released monthly at the New York City and New Jersey railroad terminals during the past fiscal year:

	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
New Jersey.....	246	219	324	236	311	381	282	218	414	279	280	208	3,398
New York City.....	502	608	854	653	792	584	529	478	607	542	436	463	7,048

During the year the bureau made inspections of poultry at the Flemington Poultry Auction Market, in Flemington. The inspection work was performed by a representative of the bureau during July, August, September and two weeks in October, after which the work was turned over to the Flemington Auction Market Cooperative Association, Inc.

Following is a record of this inspection work:

POULTRY INSPECTION AT FLEMINGTON AUCTION MARKET

Month	No. Owners	No. Birds Insp.	No. Crates Insp.	No. Leghorns Insp.	No. Heavy Fowl Insp.	No. Heavy Broilers Insp.	No. Medium Broilers Insp.	No. Light Broilers Insp.	No. Ducks Insp.	No. Roosters Insp.	No. Guineas Insp.	No. Pigeons Insp.	Total Birds Insp.
July	288	27,469	1,422	2,650	713	14,855	7,727	1,084	351	89	..	...	56,648
August.....	227	17,984	1,039	3,355	497	10,785	2,173	519	341	314	..	...	37,234
September.....	256	18,093	1,094	4,250	714	10,771	1,058	503	439	108	45	205	37,536
October (2 weeks)..	93	5,577	355	1,659	330	3,388	125	40	182	...	..	30	11,779
Total.....	864	69,123	3,910	11,914	2,254	39,799	11,083	2,146	1,313	511	45	235	143,197

FOWL POX VACCINATION

Very few changes were made in the method of administering the work of fowl pox vaccination. The bureau adhered to the use of the same strains of fowl pox virus that were used in the two previous years, the material being produced in a plant operating under a federal license for the production of biologic products. During the year the bureau issued 901 permits to laymen to vaccinate their own flocks as compared with 484 last year.

Following is a notice prepared and sent to poultry owners, giving in detail the plans under which the fowl pox work is conducted:

Subject: **FOWL POX VACCINATION**

The work relative to the vaccination of poultry flocks for the control of fowl pox will be carried out by the Bureau of Animal Industry of the Department of Agriculture this year, and will be conducted on any one of the following plans:

1. By making application to the Bureau of Animal Industry of the Department of Agriculture to have the work done by the state.

   (a) Applications will be made in writing on forms supplied by the Bureau of Animal Industry and if the provisions are accepted, they are to be filled in and forwarded to the chief of the Bureau of Animal Industry, Trenton, N. J.

   (b) The complete charge for this service is one and one-half cents (1½¢) per bird. Checks or money-orders, drawn to the order of the secretary of agriculture, must accompany each written application and be mailed to the chief of the Bureau of Animal Industry, Department of Agriculture, Trenton, New Jersey. THERE WILL BE NO ADDITIONAL CHARGES MADE FOR THIS SERVICE.

2. Private veterinarians to do the vaccinating:

   (a) Application to be made by the veterinarian to the Bureau of Animal Industry of the Department of Agriculture for permission to use fowl pox vaccine.

3. Owner to vaccinate his own flock:

   (a) Application to be made to the Bureau of Animal Industry of the Department of Agriculture for permission to vaccinate his own flock. Upon receipt of application, permit will be sent immediately on condition that report of the number vaccinated, the name and Federal license number of the laboratory manufacturing the product and the strain of material used, shall be made to the Bureau of Animal Industry, which reserves the right to inspect the flock to observe the methods employed at the time of vaccination and at any future time to ascertain the results of the vaccination and the condition of the flock with reference to its health status.

NUMBER OF FLOCKS AND NUMBER OF FOWLS VACCINATED BY BUREAU REPRESENTATIVES AS A PROTECTION AGAINST FOWL POX IN THE YEAR ENDING JUNE 30, 1932

County	Number of Flocks Vaccinated	Number of Fowls Vaccinated
Atlantic	2	960
Bergen	3	968
Burlington	6	7,718
Camden	2	854
Cape May	1	740
Cumberland	2	700
Essex	2	768
Gloucester	4	2,687
Hudson	..	....
Hunterdon	18	8,586
Mercer	11	6,234
Middlesex	8	3,031
Monmouth	16	10,027
Morris	3	2,449
Ocean	18	13,993
Passaic	5	5,933
Salem	2	670
Somerset	9	6,989
Sussex	..	....
Union	..	....
Warren	1	400
State	113	73,707

PULLORUM DISEASE CONTROL

The bureau cooperated with the Bureau of Markets in carrying on a program for the standardization and accreditation of flocks by making agglutination tests to discover birds infected with pullorum disease.

The bureau made field tests according to the rapid method advocated by Drs. M. Dorset and H. Bunyea of the Bureau of Animal Industry of the United States Department of Agriculture with certain modifications to meet field conditions. The bureau checked at least 50 per cent of the samples by the long or tube test in the bureau laboratory and found but slight variation and few disagreements in the two tests.

The field test eliminates a second handling of birds to locate reactors as they are removed as soon as the test is made, placed in quarantine and sent to slaughter at the earliest possible date. The field method of testing eliminates the trouble encountered from contaminated, jellied and hemolyzed samples and those containing insufficient serum, but requires, in addition to a bleeder, a veterinarian in

the field to interpret the results of the test. The cost of testing for pullorum disease is covered by fees paid by poultrymen.

The following tables indicate the work accomplished during the past fiscal year:

NUMBER OF FOWLS BLOOD-TESTED FOR PULLORUM DISEASE, NUMBER AND PERCENTAGE REACTING, FISCAL YEAR 1931-1932, BY COUNTIES

County	Number of Fowls Tested	Number of Fowls Reacting	Per Cent Reacting
Atlantic	1,528	179	11.71
Bergen	4,650	64	1.38
Burlington	5,525	210	3.80
Camden	...	...	...
Cape May	...	...	...
Cumberland	27,006	2,087	7.71
Essex	2,330	23	.99
Gloucester	7,307	259	3.54
Hudson	...	...	...
Hunterdon	22,653	640	2.83
Mercer	11,090	392	3.53
Middlesex	10,710	342	3.19
Monmouth	5,460	82	1.50
Morris	4,737	488	10.30
Ocean	408	...	...
Passaic	1,693	29	1.71
Salem	14,298	1,789	12.51
Somerset	6,485	147	2.27
Sussex	1,038	110	10.60
Union	1,443	9	.62
Warren	940	90	9.57
State	129,301	6,940	5.37

WORK DONE IN THE BUREAU LABORATORY

Following is a summary of the work (in addition to the conduct of agglutination blood tests for Bang's abortion disease) performed in the laboratory of the Bureau of Animal Industry*:

TESTING OF MILK SAMPLES FOR PRESENCE OF AGGLUTININS FOR B. ABORTUS (BANG'S DISEASE)

Number of samples of milk received	~~10~~ 149
Number of positive tests	~~5~~ 25
Number of negative tests	~~5~~ 124
~~Number of cows tested~~	~~2~~ 16
~~Number of cows reacting~~	~~1~~

*A record of blood tests is given on page 49.

TESTING OF BLOOD SAMPLES FOR PRESENCE OF PULLORUM DISEASE IN POULTRY

Number of tests set up and read	60,991*
Number of tests positive	6,120
Number of samples contaminated	122
Number of samples, insufficient serum	75
Number of samples hemolyzed	126
Number of samples broken	1
Number of jellied samples	147
Number of tests negative	54,400

* This number does not include the rapid or plate tests conducted.

BACTERIOLOGICAL EXAMINATIONS

Material	Number	Animal	Condition suspected	Finding
Liver	2	Bovine	Tuberculosis	Negative
Lung	3	Bovine	Tuberculosis	Negative
Placenta	1	Equine	Abortion disease	Negative
Spleen	1	Bovine	Anthrax	Negative
Spleen	1	Bovine	Anthrax	Positive
Skin	2	Bovine	Tuberculosis	Positive
Ear	2	Bovine	Anthrax	Positive
Lymph gland	1	Bovine	Tuberculosis	Negative
Mammary gland	2	Bovine	Tuberculosis	Positive
Vaginal discharge	1	Bovine	Bang's Disease	Negative

POST MORTEM EXAMINATIONS

Animal	Number	Condition suspected	Finding
Chicken	11	Bacillary white diarrhea	Positive
Chicken	20	Bacillary white diarrhea	Negative
Chicken	8	Tuberculosis	Positive
Chicken	2	Range paralysis	Taeniasis
Chicken	2	Paralysis	Infectious leukemia
Chicken	1	Unknown	Occlusion of trachea
Chicken	1	Cold	Coccidiosis
Sheep	1	Unknown	Nodular disease
Rabbit	1	Paralysis	Fractured pelvis

Number of specimens collected for museum purposes	60
Number of permanent museum mounts completed	111

Report of the Bureau of Markets

WARREN W. OLEY, *Chief*

ECONOMIC CONDITIONS

The farmers of New Jersey have passed through a very difficult year. Although the yields of the farms and the quality of their products have been satisfactory, prices in the markets reached by these products have been very low. Conditions are never uniform in agriculture. Some growers have received a fair return for their produce based on prices for other commodities. Others, and this is true for the large mass of producers, have received little as compared with prices for those articles the farmer must buy. It is unfortunate that all farmers cannot take advantage of established market facilities. Some live too far from city markets or not in areas producing certain crops in constant demand. Others find that their farms demand all their time so that they can not make use of markets requiring personal salesmanship.

The problems of marketing products so that satisfactory returns are obtained are many. The Bureau of Markets can point with pride to ways that have been developed to aid in solving these problems. The personnel of the bureau has undergone but little change in the past few years. The men heading the various lines of work are constantly gaining experience and know the needs of New Jersey farmers. The bureau's whole work is based on experience supplemented with a constant supply of information pertinent to the problems that New Jersey farmers have to face. The work of the bureau is further helped by the confidence in it, which has become stronger from year to year. The fact that information and help are available and that more and more people come to realize that such help is founded on practical knowledge and proven experience has gone far to make the bureau's influence in marketing lines felt.

The Bureau of Markets worked with consumer organizations during the past year, realizing that through them could be developed a demand for home-grown products, and further realizing that there are in New Jersey four million people who can be greatly benefited

by lower food costs and by receiving a supply of fresh produce direct from New Jersey farms.

CROPS AND MARKETS INFORMATION SERVICE

To be most effective in marketing advisory work, the Bureau of Markets must have reliable information which can be sent out with the least possible delay. With the aid of such information, growers can take advantage of unexpected market conditions and can so adjust their harvesting dates to the crop movements from competing areas that the continuity of market supplies is kept up. The bureau has built up a correspondence list with reliable sources of information in many states. This line of work, which is the basis for our crop conditions reports, has great possibilities in the future.

The depressed condition of business and trade had its effect on the service which we were able to render to the farmer during the 1932 fiscal year. Before 1931, the Bureau of Markets operated an office in Newark in cooperation with the Bureau of Agricultural Economics of the United States Department of Agriculture. Because of increased demands for services in that city, it was determined to operate this office as a full-time state project. This plan was put into effect July 1, 1931, and worked very satisfactorily. Later it was decided to close the office at Newark because prospective appropriations for the year 1932-33 did not provide funds for its maintenance, and it seemed wise to close the office before the opening of the active shipping season for New Jersey produce.

The closing of the Newark office resulted in transferring many of the duties of distributing daily market information to the cooperative employee of this bureau and the Federal Bureau of Agricultural Economics in New York City. The various newspapers and press agencies of the metropolitan area wished to arrange some method whereby they would still be able to furnish their readers with a daily report of New Jersey produce on the New York market. The necessary operations were worked out, and the New York office has handled the service very satisfactorily.

DAILY MARKET NEWS SERVICE

The general purpose of the crops and markets information service of the Bureau of Markets is to keep the farmer in touch with crop and market conditions in competing areas, and to present him with a market report which is prepared by a disinterested agency, and which is timely and as accurate as possible. We believe that, through the

bureau's cooperative agreement with the Bureau of Agricultural Economics of the United States Department of Agriculture, we have as efficient and economical a method of obtaining market information as it is possible to realize. In return for a nominal fee paid to the reporters on the New York and Philadelphia markets, special attention is given to New Jersey products when they are in season.

In the distribution of daily market news we have a very inexpensive medium; namely, the daily newspaper. This outlet for the release of market information allows for the greatest possible distribution, with practically no financial outlay, and proves a more efficient and economical method than do daily mimeographed sheets sent to a special mailing list. At present there are 32 papers using market information of some kind issued from the various offices of the service. All the large New Jersey dailies carry a report of fruit and vegetable quotations each day. Many of the weeklies carry the auction market prices of fruits, vegetables, poultry and eggs. They also carry seasonal news items regarding market conditions, as well as the feed and grain prices which are released through the *Weekly Market Review*. Our relations with the press agencies are most satisfactory. They are rendering a distinct service to New Jersey farmers by publishing daily and weekly market reports.

WEEKLY MARKET SUMMARIES

Farmers are supplied with information concerning crop and market conditions in competing areas by the *Market Conditions* reports issued by the bureau. As the fiscal year opened, the mailing list for this publication was revised in the interest of efficiency and economy and in order to keep it from becoming cumbersome. The response to questionnaires sent out when the revision was being made proved that the reports continue to have value and interest to the growers receiving them. Since the revision of the mailing list, it includes approximately 2,500 names. It contains the names of nearly all the large and prominent growers of the crops on which reports are issued.

During the fiscal year a total of 194 reports were issued. These included 39 on apples, 28 on white potatoes, 27 on sweet potatoes, 18 on peaches, 15 on lettuce, 15 on spinach, 13 on asparagus, 11 on strawberries, 10 on onions, 10 on tomatoes, and 8 on miscellaneous truck crops, which included cabbage, celery, cauliflower, root crops, beans and peppers. Data on acreages, yields, production estimates, carlot shipments, rail and truck receipts at important markets, and price ranges for various sizes and grades of commodities were included in

the statistical tables presented in the reports. Special features consisted of items concerning embargoes by foreign countries on American fruits, changes in the New York State bonding law, and other news of a similar nature.

The *Weekly Market Review* was issued regularly throughout the year, in much the same manner as in previous years. Changes in the form of the report which were contemplated at the beginning of the year were not carried out because they would have increased the cost of mailing and materials. The mailing list for this report was revised during the spring, and we believe that the report is being sent to those people to whom it is of greatest value. During the year numerous requests were received for this report because of the addition of egg and poultry auction quotations. Poultry producers, as well as buyers and prospective buyers at the Flemington and Vineland auction markets, are keenly interested in this report, and each week requests for it are received, principally because of the poultry and egg material it contains.

SPECIAL SERVICES

In addition to the regular work already mentioned, several seasonal services were carried on by the crops and markets information service during the active marketing season. These services were especially valuable to potato, truck, and fruit growers.

SEASONAL POTATO OFFICE

For the fourth consecutive year a temporary field office was maintained in the heart of the central New Jersey potato belt, during the potato harvesting and shipping season. The purpose of this office is to collect and disseminate market information on potatoes. The activities of the office in 1931 extended over a period of ten weeks, from July 14 to September 19.

Farmers and dealers showed a greater need for the service rendered by the Hightstown office last year than in any previous year. A total of 131 farms were visited by the man in charge of the office and the growers were acquainted with the purposes and scope of the office's work. Suggestions of the growers, whenever possible and practical, were incorporated into the service. Approximately 75 farmers and 15 of the largest dealers in central New Jersey used the service regularly. A total of 1,200 telephone calls were made to the office for information. Growers made about two-thirds of these calls, and the remainder were made by dealers. During the peak of the season there were from 30 to 45 calls daily. Several growers in the vicinity of Hightstown frequently made personal visits to the office for information.

SERVICE TO AUCTION MARKETS

The shipping point produce auction markets in the southern section of the state were again furnished with daily reports of New York prices of the important commodities being sold at each auction block. Telegrams, which were written in code in order to reduce their cost, were used to convey these reports. The method of using telegrams for this work is the most economical one that it is possible to use. The reports were sent to auctions at Cedarville, Rosenhayn, Vineland and Glassboro during the summer of 1931 and during the first part of the 1932 growing season.

HAMMONTON BERRY MARKET

Through the cooperation of the Bureau of Agricultural Economics of the United States Department of Agriculture, berry growers of Hammonton and vicinity were furnished with daily quotations on raspberries, blackberries and huckleberries throughout the season for the marketing of these crops. The quotations were posted daily at the Hammonton municipal market and served to inform growers as to the value of their berries. Several shippers made use of the quotations in determining the markets to which to ship their berries.

MOTOR TRUCK RECEIPTS

The collection of data on motor truck receipts of fruits and vegetables is part of the daily market reporting work in Philadelphia and New York. The New Jersey Department of Agriculture cooperates with the Federal Department of Agriculture in financing the collection of this data in Philadelphia. The work in New York has been carried on for four years, while in Philadelphia it has been carried on for nearly two years. The data collected on truck receipts is important from the New Jersey growers' standpoint, since a large volume of New Jersey produce is trucked into these cities. The inclusion of truck figures in daily market reports helps to portray New Jersey's importance as a production area.

DAIRY PRODUCTS MARKETING

OFFICIAL NEW JERSEY GRADES

A greater effort was devoted to the development of the use of the official New Jersey milk grades than to any other phase of the milk marketing program. These permissive grades represent an effort on the part of the New Jersey Department of Agriculture to recognize and to identify New Jersey milk of high quality. Originally fostered

by the State Dairy Committee and partly developed by the New Jersey Dairymen, Inc., these elective grades were given official status when they were promulgated by the State Board of Agriculture as *New Jersey Grade A Raw Milk* and *New Jersey Grade A Pasteurized Milk*. The two grades became effective August 1, 1931. Two elective grades for cream, *New Jersey Grade A Raw Cream* and *New Jersey Grade A Pasteurized Cream*, were promulgated on October 20, 1931.

Except in several of the larger municipalities, there are in New Jersey no regulations either state or local which provide specific compulsory standards for grades of milk. This situation has produced state-wide use and abuse of grade designations with standards established largely by the retailer. Consumers are confronted with the problem of judging the quality of milk sold under such conditions. Labels and grade designations should furnish the consumer with a true and simple, but comprehensive description of the milk or cream in order to protect responsible producers and dealers and to gain the confidence of the consumer.

Increased use of the official state grades for New Jersey milk and cream would eliminate much of the confusion, doubt and misunderstanding now prevailing in the trade.

The regulations for the New Jersey grades do not demand a "supergrade," but conform largely to the standards already being met by conscientious producers and demanded by many health officials. The regulations were enforced by the Bureau of Markets from August 1 until the end of the year, and but few infractions were reported, a situation which indicates that the grades are sound and practical.

In November a survey was made of the dealers using the New Jersey grades to ascertain their interest in and opinion of the bureau's milk marketing program. It was evident that a considerable number were not taking full advantage of their sales possibilities, a situation quite common to small independent dealers who have done little actual selling on their routes. A determined effort was made to sell the dealers and, in turn, their drivers on the grades. This effort was made by holding several meetings and by personal contact. A meeting for drivers or route-salesmen in March was attended by 60 drivers and served to stimulate their sales efforts. Representatives of the Bureau of Markets met with the drivers of individual dealers to discuss the grades. The drivers must be recognized as key men, upon whom contact with the consumer is dependent, and their interest and cooperation in the development of the use of the grades is absolutely essential.

PUBLICITY

The grade regulations were published as also was a four-page circular suitable for distribution to consumers. Sixteen thousand copies of the circular were distributed through the dealers. Eight newspaper articles were prepared. Eighteen sales letters or circulars pointing out the features of the New Jersey grades were prepared for 11 dealers for distribution among their customers. Most of these dealers had never before done any direct mailing or advertising to reach their trade. They are recognizing more and more that such work is necessary and that behind their milk and the New Jersey milk grade regulations there is a wealth of material of genuine interest to consumers. Agitation on milk topics has stimulated interest on the part of consumers and developed a more receptive attitude toward information on the background of milk. Eighteen housewives wrote to the bureau for information on milk between January 1 and June 30. Local health officials reported that they received many more such calls. Hundreds of women have attended meetings and asked pertinent questions relative to the milk standards of the department.

SUMMARY OF WORK ON NEW JERSEY GRADES

	Aug. 1, 1931	July 1, 1932	Increase
Dealers	12	30	18
Farms producing	38	102	64
Cows	1,064	2,739	1,675
Average quarts daily	11,729	24,709	12,980
Sub-dealers not included above	...	56	...
Municipalities where sold	...	128	...

SAFETY CONTROL FACTORS

Between August 1, 1931, and the end of the fiscal year, 401 samples of *New Jersey Grade A* milk were collected for analysis and examination. Bacteria counts, on the average, were kept within the regulation limits. Occasional high counts were reported together with suggestions for correcting the temporary conditions causing them, and in every case succeeding samples were reported to be within the regulation limits. As to butterfat, there was a definite trend from the 3.5 per cent minimum toward an average approaching 4.0 per cent.

Physical examinations by physicians were made of 259 employees of plants and farms. The New Jersey Department of Health cooperated by making laboratory examinations of specimens submitted for each employee.

SUMMARY OF PHYSICAL EXAMINATIONS OF HERDS PRODUCING NEW JERSEY GRADE A MILK

County	Herds	Animals Examined	Animals Passed	Animals Isolated	Animals Condemned
Burlington	1	21	21	..	..
Essex	2	32	29	3	..
Hunterdon	6	220	207	11	2
Mercer	4	66	64	2	..
Middlesex	3	235	226	7	2
Morris	58	1,663	1,585	62	16
Somerset	26	494	480	12	2
Warren	2	133	127	5	1
Totals	102	2,864	2,739	102	23
Percentage	..	..	95.64	3.56	0.80

ANALYSIS OF HERD EXAMINATIONS

Herds examined	102	
Herds in which all animals passed	44	43.14 per cent
Herds in which one or more animals were isolated	55	53.92 per cent
Herds in which one or more animals were condemned	17	16.67 per cent
Herds in which one or more animals were both condemned and isolated	14	13.73 per cent

It is of interest to note in the above table that although many of the herds in question were under, or had previously been under, veterinary supervision as required by local or state health regulations, there is considerable evidence to point out that much more careful and regular supervision, such as is required by the New Jersey grades, is essential. Most of the cows listed for isolation were found to be suffering from udder troubles. Most of these cows recovered and were returned to the herds.

In the case of raw milk, especially, the New Jersey Grade A dealers appreciate this herd supervision, and to the producers it means an added measure of protection to their herds through isolation and removal of doubtful animals. The Bureau of Animal Industry of the department made physical examinations of the herds producing the graded milk.

INCOMPLETE DEVELOPMENTS

By contacts or correspondence, the New Jersey grades were discussed with 88 dealers, some of whom are giving the subject serious consideration. Many of them hesitated to place their milk under supervision largely because of the serious condition of the retail market. While the expense of the inspection fee of fifty cents per thousand quarts of milk produced is not a major item, in many cases where a plain plug cap is now being used there is involved the additional ex-

pense of about three dollars per thousand quarts for the improved type of cap required by the regulations.

Contacts during the year were made with the boards of health or health officials of Newark, Paterson, Hackensack, Elizabeth, Bound Brook, Plainfield, Summit, Morristown, Dover, Somerville, Pompton Lakes, Mahwah, Campgaw, High Bridge, Phillipsburg, Bridgeton, Mount Holly, Madison, Springfield, Orange, South Orange, Gladstone, Peapack, Raritan, New Providence, New Brunswick, Rockaway, Princeton, and other municipalities. In such contacts, an effort was made to present the viewpoint of the producer or dealer in order to emphasize the economic phase of the milk industry, which may be lost sight of in developing or enforcing milk regulations based primarily and exclusively on health factors.

The sales value of labeling milk "Produced in New Jersey" has been recognized by a considerable number of dealers who are placing "Produced in New Jersey" on their labels, trucks and literature.

In conclusion, health workers, producers, dealers and consumers all generally agree that the New Jersey grades are sound and represent a distinct step in the advancement of a quality milk program.

NEW JERSEY STATE DAIRY COMMITTEE

The finest cooperation continued to exist during the year between the department and the State Dairy Committee, which is made up of representatives of County Boards of Agriculture, the College of Agriculture, the State Grange, the State Federation of County Boards of Agriculture, dairy breed associations, and individual producers. Many important matters concerning the dairy field work of the bureau were discussed by this committee and recommendations made to the State Board of Agriculture. Matters relating to animal disease control, the marketing of milk, cooperation with health officials, and legislative work affecting dairymen required the efforts of many sub-committees as well as meetings of the entire group. One member of the staff of the bureau continued during the year to serve as secretary of this committee.

The work of the State Dairy Committee in promoting the welfare of the dairy industry had its climax in legislation, enacted during the 1932 session of the Legislature, which is of great potential benefit to the producers and consumers of milk in New Jersey. Although several bills which will aid the dairy industry were passed, the most notable one was that worked up in committee by the health officers of the state and the Dairy Committee. This bill had the endorsement of

Governor Moore and was supported by the large dairy cooperatives, health officers, consumer organizations, the Department of Agriculture, the Department of Health, the State College of Agriculture, and the Joint Committee on Economic Food Distribution in New Jersey. The bill, which became Chapter 131, Laws of 1932, not only sets up a minimum standard for the production of milk to be sold in New Jersey, but it definitely prescribes the way that milk imported into the state must be supervised in order to meet New Jersey standards. The people of New Jersey are greatly indebted to the 1932 Legislature for this act.

An outstanding accomplishment for which the milk producers of the state are indebted to Governor Moore, was his appointment of two outstanding dairymen as members of the State Board of Health. The names of these men were suggested to the Governor by the State Dairy Committee. Through the appointment of these men economic conditions on the farm will receive the consideration of state health officials.

The State Dairy Committee held a Field Day at Washington Crossing State Park, August 29, 1931. Despite a heavy rainstorm in the morning, a large number of dairy farmers attended. Governmental leaders as well as a noteworthy group of federal and state agricultural leaders addressed the dairymen.

GENERAL MARKETING OF MILK

It must be recognized that the New Jersey grades for milk represent only a nucleus about which further growth and development can be anticipated. In addition to milk produced according to the provisions of the grades, there is a large quantity of other milk produced in the state which demands consideration. Progress has been made in obtaining legislation which eventually will be of decided benefit to New Jersey producers.

Many conferences on milk regulations were held during the year with health officers, representatives of farm cooperatives and milk companies and consumers. In addition, conferences with the Legislative Milk Commission were held in November, December and January. Before adjourning, the 1931 Legislature appointed the Legislative Milk Commission to consider recommendations for milk legislation which were to be reported to the 1932 Legislature. Hearings at which all interested parties were given an opportunity to be heard were held by the commission in the State House.

Several price conferences in Philadelphia were called during the year by the Inter-State Milk Producers' Association and attended by cooperating dealers. At these meetings much information regarding the milk industry was presented from both the consumers' and the producers' standpoint. Many of these conferences were attended by a representative of the Bureau of Markets. The viewpoint of New Jersey milk producers and the probable effect on them of any action that was being contemplated was presented by the bureau's representative.

A conference was called by Governor Gifford Pinchot of Pennsylvania for the purpose of establishing uniform standards for milk regulation for the states of New York, New Jersey, Pennsylvania, Delaware and Maryland. Following this conference, three additional conferences were held. All of these meetings were held in Philadelphia and attended by representatives of the Bureau of Markets. In the course of the meetings, differences developed between the three northern states and the two southern states which prevented the adoption of a unanimous report. The meetings were very helpful, however, in bringing together a large group of men from the several states and in bringing out their varying viewpoints on the subject of milk regulation.

The following calls at dairy farms and plants were made during the year by staff members concerned with milk marketing:

County	Farm	Plant
Burlington	14	12
Camden	3	1
Cumberland	2	5
Essex	44	43
Gloucester	3	..
Hunterdon	226	69
Mercer	55	17
Middlesex	118	64
Monmouth	2	4
Morris	600	276
Passaic	17	5
Somerset	329	119
Sussex	11	..
Union	48	46
Warren	4	4
Totals	1,476	665

FRUIT AND VEGETABLE MARKETING

Economic conditions have accentuated the necessity not only for reduced costs of production but also for highly efficient marketing.

In the fruit and vegetable field the need for efficient marketing has been evidenced by increased attention to the principles of grading, to distributing commodities in such a way as to secure the greatest possible net returns, and to improved or new marketing outlets. The Bureau of Markets has been active in all phases of fruit and vegetable marketing and has aided producers in improving their marketing facilities and methods.

CITY MARKETS

The bureau made a detailed survey of the public markets of the City of Elizabeth at the request of the Chamber of Commerce and business men's associations of that city. The findings of the survey were included in a special report covering existing conditions and recommendations for improvement. The recommendations provided for the removal of the markets to sites under complete municipal control, the proper scaling of market fees, and strict observance of market regulations, with the end in view of attracting more farmers to a potential retail outlet and more consumers to a "fresh-from-the-farm" market. The adoption of such recommendations has been delayed, but an immediate result of the survey was the improvement of conditions at the present locations of the markets.

The formation of a farmers' market in Phillipsburg was given impetus and assistance by the bureau, which made a survey of the city's marketing needs, pointing out the possibilities of such a market. The bureau furnished plans for the layout of the market and made suggestions for its efficient operation. The market represented an entirely new outlet for growers in the vicinity of Phillipsburg and early in its operation, at the close of the fiscal year, was receiving good support from both growers and consumers. The Warren County Emergency Relief Committee and municipal authorities were largely responsible for developing the market and promoting local interest in it.

At the close of the fiscal year, the bureau was associated in planning for a farmer-owned, farmer-controlled market to be located at Paterson. According to the plans, this market will be similar to the successful farmers' market in Newark. In deciding upon both the layout of the new market and the legal organization of the market association, the producers concerned followed the bureau's recommendations. The fact that adequate working capital for the market was subscribed by growers assures the addition of another market to the growing chain of progressive farmers' markets in New Jersey.

Statistics on the carlot receipts of fruits and vegetables in Paterson for the calendar year 1931 were obtained by the Bureau of Markets from the records of railroads operating in that city. These will be used as a basis for formulating a survey of the Paterson market.

The revival of the once-important South Street Farmers' Market in Philadelphia, which occurred during the year, was of interest because of its potential value as another outlet for New Jersey growers who prefer to sell direct instead of f.o.b. or through commission houses. Although the revival of the market was primarily a move on the part of the business men of the South Street section, the bureau lent its support to it in an effort to benefit southern New Jersey produce growers.

STANDARDIZATION

A standardization move of prime importance to the apple industry was the department's promulgation of an export grade for New Jersey summer apples to meet the requirements of a partial embargo in the United Kingdom. This grade, *New Jersey Fancy Grade,* was accepted by American and British authorities and enabled producers to meet summer boxed apple competition in the export market.

Because of fewer requests from potato shippers, and a relatively light apple crop, the bureau made shipping-point inspections of, and certified only, about one-third of the volume of fruits and vegetables that it inspected and certified during the 1930-1931 fiscal year. All of the certification work was done under a cooperative agreement between the bureau and the Bureau of Agricultural Economics of the United States Department of Agriculture, with the official New Jersey grades used as the standards for quality.

Five hundred and twelve carloads and truckloads of fruits and vegetables were inspected during the year. Forty-two per cent of this volume consisted of potatoes; 32 per cent, of apples, and the balance consisted of seven other products. Because of light export shipments of apples from cold storage, most of the inspection work was done during the actual harvesting season, and more than half of the inspections were made in August. As usual, the work was done under the bureau's supervision by trained federal-state licensees employed during the shipping period and paid from fees charged for the work.

RECORD OF INSPECTIONS BY MONTHS, 1931-1932

Month	Apples	Beans	Mixed Fruit	Onions	Peaches	Pears	Potatoes	Straw-berries	Total
1931—									
July	38	21	..	16	..	..	10	..	85
August	71	1	3	..	4	3	206	..	288
September	36	2	8	..	20	9	1	..	76
October	6	..	..	..	..	1	..	..	7
November	..	..	..	..	..	1	..	..	1
December	2	..	..	..	..	..	6	..	8
1932—									
January	9	..	..	..	..	..	..	..	9
February	6	..	..	..	..	..	..	..	6
March	..	..	..	..	..	..	..	..	..
April	..	..	..	..	..	..	..	..	..
May	..	..	..	..	..	..	..	..	..
June	..	9	..	..	..	..	..	23	32
Totals	168	33	11	16	24	14	223	23	512

TEN-YEAR RECORD OF INSPECTIONS, BY PRODUCTS

Product	'22-23	'23-24	'24-25	'25-26	'26-27	'27-28	'28-29	'29-30	'30-31	'31-32
Apples	..	250	147	124	..	25	13	1	549	168
Beans	..	..	..	..	..	..	..	..	11	33
Mixed Fruit	..	..	..	..	..	..	..	..	..	11
Onions	..	..	..	..	..	..	..	..	2	16
Peaches	240	380	443	245	188	154	..	83	4	24
Pears	..	..	2	..	..	..	..	..	29	14
Peas	..	..	..	..	..	..	..	..	4	..
Potatoes	1,259	89	77	27	423	757	789	312	911	217
Strawberries	..	..	..	..	..	..	..	..	47	23
Sweet Potatoes	..	..	..	..	..	..	..	1	..	6
Totals	1,499	719	669	396	611	936	802	397	1,557	512

INSPECTION OF POTATOES

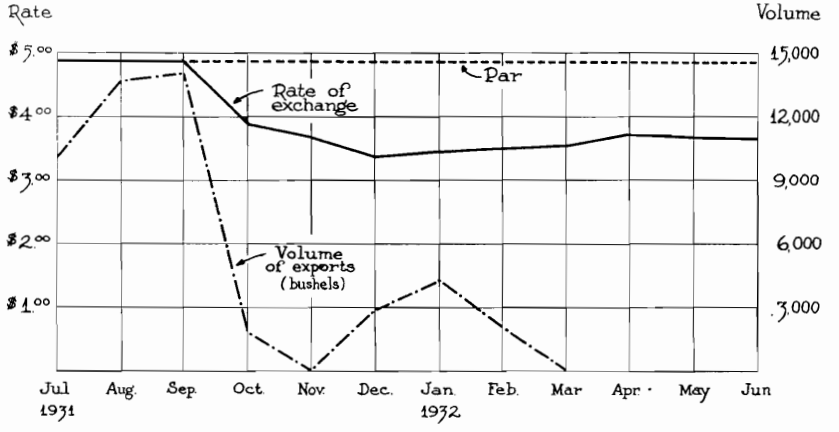
Practically all of the work on potatoes was done at the request of one large shipper in central New Jersey who was convinced that the value of inspection and certification in selling and in maintaining f.o.b. prices far exceeded the actual cost of the service. Throughout most of the season, certificates were issued only on *U. S. No. 1* cars of potatoes, which accounts for the fact that, of 217 cars inspected, 215 cars were certified as being of *U. S. No. 1* quality. For this reason a true comparison of the quality of the potatoes inspected during the year and in previous years cannot be made on the basis of the certification records. In previous years, 55 to 76 per cent of the carloads inspected graded *U. S. No. 1.* The volume is tabulated, however, to maintain a record of inspections by weeks, as follows:

SUMMARY OF POTATO INSPECTION WORK

Period	Total Cars Inspected	Number of Cars U. S. No. 1	Percentage U. S. No. 1
July 27-Aug. 1	12	12	100
August 3-8	60	59	98
10-15	38	38	100
17-22	64	64	100
24-29	42	42	100
31-Sept. 5	..	..	...
September 7-12	1	..	...
1931 season	217	215	99
1930 "	911	615	68
1929 "	312	225	72
1928 "	789	533	68
1927 "	757	577	76
1926 "	423	233	55

INSPECTION OF APPLES

The inspection of apples was largely confined to stock intended to be exported. Of the 168 certificates issued on apples, 134 were export form certificates. A relatively light crop of apples in New Jersey, greater competition from the usual exporting states, which had a larger crop in 1931 than in 1930, a reduced rate of exchange, and drastic import regulations imposed by Argentina all combined to reduce New Jersey's apple exports to about one-third of the 1930-31 volume. During the year ending June 30, 1932, the bureau certified 44,825 bushels of apples for export, all of which went to the United Kingdom and Continental Europe. Approximately 52 per cent of this volume consisted of apples of summer varieties, which went on the foreign markets at a period when rates of exchange were at par, 83 per cent of the apple certificates having been issued between July and September. Beginning in January, 1932, a duty of 10 per cent ad valorem was imposed on apples by Great Britain; however, a slight rise in sterling and in apple prices generally balanced this duty.



Effect of Rate of Exchange of Pound Sterling on Apple Exports

The new grade for apples provided by the department (*New Jersey Fancy Grade*) applied only to summer varieties and required apples to show a tinge of color and to be packed in boxes. This grade enabled New Jersey growers to meet export competition from the West, where the "Fancy" grade accepted under the British embargo, requires little or no color for summer apples. The adoption of the New Jersey grade resulted in the marketing of 12,090 bushels of high quality apples which could not have met color requirements of the *U. S. No. 1* grade, which was the grade originally specified for eastern apples by the British regulation. One-half of the New Jersey summer apples exported during the 1931 season were packed to conform to the standards of the new grade.

Twenty-four New Jersey growers were assisted by the bureau in exporting a part of their apple crop by the issuance of the necessary export form certificates following inspection and certification. Forty-three certificates were issued on carlot shipments and 91 on trucklot shipments.

During the 1930-1931 fiscal year, 35,217 bushels of New Jersey apples were shipped to Argentina. During the last fiscal year, no apples were exported to South America from New Jersey because of drastic restrictions as to freedom from insects and disease.

The following table shows the volume of apples inspected and certified for export according to variety and grade, and a comparison with the 1930-31 exports from New Jersey. Large increases are shown in the amounts of summer varieties shipped in the 1932 fiscal year because the market was strong and the rate of exchange at par; a

heavy decrease is indicated in the case of late varieties which were light in production and which met competition from heavy exports from Virginia and other states where the production was better and growing and packing costs relatively lighter.

NEW JERSEY APPLES INSPECTED AND CERTIFIED FOR EXPORT
(Bushels)

Variety	U. S. 1	Comb. U. S. 1 & Util.	U. S. Commercial	U. S. Utility	N. J. Fancy	Wash. Fancy	Uncl.	Total 1931-32	Total 1930-31
Wealthy	4,331	..	..	..	7,335	..	..	11,666	..
Williams	2,782	..	..	..	4,448	..	..	7,230	1,172
Winesap	3,542	1,100	..	..	..	..	1,217	5,859	28,251
Grimes	4,624	..	..	..	..	..	..	4,624	9,067
Delicious	3,140	..	..	69	..	..	970	4,179	12,144
Transparent	2,713	..	..	..	..	..	..	2,713	..
Stayman	585	..	..	559	..	..	1,274	2,418	14,488
Banana	728	..	..	..	..	..	411	1,139	4,297
Maiden Blush	900	..	..	..	137	..	..	1,037	582
Rome	146	345	..	..	..	..	74	565	27,647
Ben Davis	300	139	..	..	..	..	..	439	20,439
Gano	318	..	..	..	..	..	..	318	3,474
Paragon	168	70	..	..	..	..	..	238	9,190
Others	1,477	..	672	16	170	65	..	2,400	10,219
Total									
1931-32	25,754	1,654	672	644	12,090	65	3,946	44,825	.....
1930-31	97,019	1,056	8,588	2,780	.....	1,196	5,837	.....	140,970*
Per cent 1931-32	58	4	1	1	27	..	9		
Per cent 1930-31	69	1	6	2	..	1	4		

* In the year 1930-1931, 24,494 bushels of Combination U. S. No. 1 and Commercial apples were inspected for export. This constituted 17 per cent of the total inspections for export for that year, and is included in the total figure of the last column.

INSPECTION OF PEACHES

Twenty-four cars of peaches of a total of 85 cars shipped from the state were inspected in the past fiscal year. Low prices throughout the peach season, beginning with Georgia's heavy crop, resulted in poor marketing conditions for New Jersey growers and affected sales in outside markets as well as locally. In the previous fiscal year, four cars were inspected out of a car-loading for the state of 24 cars.

INSPECTION OF PEARS

Fourteen certificates, most of which were to accompany export shipments, were issued on pears. A total of 7,322 bushels of pears were certified as to grade for foreign shipment. As in the case of apples, New Jersey exports of pears were lighter than in the 1930-31 fiscal year, when 12,762 bushels were inspected for export.

INSPECTION OF CANNERY TOMATOES

The inspection of cannery tomatoes was continued for the third successive year at a canning plant in Bridgeton. The 1931 growing season was a poor one for tomatoes, resulting in subnormal average quality and low yields throughout New Jersey and most other producing sections. The volume of tomatoes inspected consisted of 2,960 loads, totaling 5,730 tons of tomatoes, which amount was about one-third of the volume inspected in 1930, when growing conditions were unexcelled. The tomatoes that were inspected were bought on a flat contract price and the certificates issued were in some instances used in effecting equitable price adjustments.

Following the tomato season, a number of New Jersey's leading and progressive canners became interested in the method of contracting to buy cannery tomatoes on the basis of grades as the only method of contracting that is equitable to both grower and canner. At numerous conferences and meetings, representatives of the bureau explained the method of paying for tomatoes according to their quality as determined by inspection as compared to paying for them on the basis of a flat contract price, and outlined the conduct of the grading service. By the end of the fiscal year, five canners, who contract for approximately three-fourths of New Jersey's production of tomatoes for canning, had adopted this new system of buying the raw product for the 1932 season. It is expected that this radical change from a custom of long standing will ultimately be of decided benefit to the canners and growers, and will help New Jersey canners to meet competition from other sections which have already adopted contracting on the basis of recognized official standards.

RECEIVING POINT INSPECTIONS

Ten federal inspections of inbound shipments of produce were made at Trenton during the year. These were made at the request of receivers who desired to obtain an impartial decision as to the quality and condition of perishables received, usually as a means of securing satisfactory adjustments on products not of the quality contracted for.

INSPECTIONS AT SHIPPING-POINT MARKETS

Inspection of products at the Cedarville Auction Market, which was begun for the first time in June, 1931, continued until the middle of August on onions and beans and started again in June, 1932, on strawberries. The work consisted of grade inspections made at the request of buyers after they had bought certain lots at the market.

To these buyers the principal value of the inspection service was that they obtained accurate knowledge of the quality of the goods they loaded for shipment to outside markets and also secured certificates which protected them on f.o.b. sales and assured distant buyers of the quality contracted for. To the market and the section in general, the work had a distinct influence in improving quality and pack, even though only a portion of the total daily movement was subjected to grade inspection. The table below lists the number of packages moving from the Cedarville market under grade certification; the quality according to inspection is also given.

Product	Number of Packages	Quality
String beans	18,691	96% U. S. No. 1
Onions	7,783	100% U. S. No. 1
Lima Beans	2,393	100% N. J. No. 1
Strawberries	4,954	85% No. 1 or better

As part of the service, "cardoor" inspections were made to enable cooperating shippers to load cars of uniform quality for distant markets; truckloads of products below a certain standard were still retained by the buyer but segregated for quick sale in nearby outlets. The inspectors checked for honest packing, but only on those loads on which grade inspection was requested. Relatively few loads were turned down because of topping, which is prohibited by the auction association.

An inspection service was maintained at Swedesboro during most of December, at the request of the Kiwanis Club, which initiated this move in an endeavor to improve the marketing of sweet potatoes in that section. The withdrawal of interest by all but one shipper made it necessary to discontinue this service after six cars had been graded and certified as being of U. S. No. 1 quality.

Inspection work was also carried on in cooperation with the auction market at Beverly. A report of this work will be found under "Shipping Point Auction Markets."

DEMONSTRATIONS AND EXHIBITIONS

Eighteen vocational schools of agriculture were visited during the winter months and the grading and packing of apples demonstrated to 695 students. During Agricultural Week, in January, 1932, an apple-packing contest was held and was participated in by 22 boys from 13 vocational schools. This contest was a feature of the Farm Products and Equipment Show and represented a test of the fundamentals learned from the demonstrations and instruction given in the individ-

ual schools. School awards were won by the high schools of Hackettstown and Millville, and individual awards were won by eight boys from various parts of the state.

Various types of educational exhibits and demonstrations on grades and packages were set up during the year as part of the fruit and vegetable project. These were held in Atlantic, Camden, Cumberland, Gloucester, Mercer, Middlesex and Sussex counties.

CONSUMER EDUCATION

Legalization by the 1932 Legislature of the outline of the State of New Jersey as a state label, the use of which will be controlled by the department, offers growers an opportunity beginning with the 1933 fiscal year to pack and market products of recognized quality under such a distinguishing mark. This mark of quality should benefit the consumer by aiding him in the selection of perishable agricultural products.

The work of the Joint Committee on Economic Food Distribution in New Jersey, of which the department is a member, included a program for improving the marketing of fruits and vegetables and plans to center the attention of the consuming public on the 1932 crop of New Jersey peaches. These plans for the most part were based on publicity of various forms concerning varieties and time of buying.

PUBLICITY

Circulars, advertising letters and articles constituted the methods of publicity given by the fruit and vegetable project in promoting its work in standardization and marketing.

The following circulars pertaining to fruit and vegetable marketing were published by the department during the year:

Circular No. 209, "Contracting for Cannery Tomatoes by Grade."

Circular No. 214, "The Export Market as an Outlet for New Jersey Apples."

In addition to these circulars, several articles on the methods of marketing most adaptable to New Jersey conditions were published. Several advertising letters featuring New Jersey's markets were prepared and sent to a list of the most reputable buyers in large markets within a radius of five hundred miles of the state.

ORGANIZATION AND SUPERVISION OF FRUIT AND VEGETABLE MARKETS

CITY MARKETS

Mention has already been made of the survey and organization work which was done in connection with city markets in Elizabeth, Phillipsburg and Paterson. Work of this kind helps to extend the facilities of city farmers' markets to the producers and consumers of the state. Cooperative work with other city markets was continued as in former years. A brief report of the activities of the markets with which the bureau cooperated follows:

NEWARK FARMERS' MARKET

The Newark Farmers' Market, Inc., successfully completed its first year of operation. During the year it bought part of the land on which it is located. Streets through the farmers' market part were paved and another line of 24 stores on the west side of the market was built. These stores have all been occupied chiefly by commission houses formerly operating at the old Center Street location. Nearly all the farmers selling in Newark sold at this market. The bureau's aid at this market was chiefly advisory, especially in planning and developing the market. During Agricultural Week the bureau placed a display in a window of a bank building in Trenton, and a larger display in the Trenton Armory, featuring fruits and vegetables obtainable at the Newark Farmers' Market.

TRENTON, CAMDEN AND ATLANTIC CITY MARKETS

The bureau continued to cooperate with the municipal markets in Trenton, Camden and Atlantic City on the same basis as in former years. The market masters at Trenton and Atlantic City are especially capable men who have cooperated with the bureau fully by making a constant endeavor to improve the conditions on their markets so that every facility for quick handling of produce has been made available.

The following table shows the volume of business transacted on the three city markets. For the purpose of comparison there are shown not only the number of loads sold on these markets and the value, for the year, but also the corresponding figures for the preceding year. From this comparison, it is noticeable that business increased in volume but that the low prices received offset the increased business.

	Total Number of Loads		Total Value of Sales		Value Per Single Load	
	1930-31	1931-32	1930-31	1931-32	1930-31	1931-32
Trenton	14,821	16,395	$433,734	$386,572	$29.26	$23.57
Atlantic City.	15,103	17,445	586,632	598,601	38.84	34.31
Camden	4,616	4,036	85,251	79,519	18.46	19.70

In addition to these figures it is interesting to note that, at these three markets, 855,455 bushels of vegetables, 280,958 dozens of eggs and 300,847 pounds of poultry and pork were sold during the year.

HAMMONTON MARKET

The Hammonton Market is the only municipally controlled shipping-point wholesale market in the state. For a number of years the Bureau of Markets has cooperated with the city commissioners of Hammonton and the market committee in operating this market. In 1931, the market handled a slightly larger volume of goods than in 1930. The total number of loads sold in 1931 was 11,895. These loads contained 73,002 packages, mostly of blackberries and raspberries. Receipts at the market totaled $230,753.94. The market opened for the 1932 growing season in June, 1932, and sold during the first 14 days of its operation 11,129 crates of berries, more than 8,000 crates of which were raspberries, for a total of $46,403.49.

SHIPPING-POINT AUCTION MARKETS

Two new auction markets were organized during the past year. One of these was designed for peach sales only and did not do much business. It was located at Hammonton. Plans were made to have this market operate on a larger scale in 1932. Another was designed for sweet potatoes only. It was located at East Vineland and operated during December. For the short time it ran, it was successful. Plans were made to develop this market in the fall of 1932. Two more auctions, both for the sale of general produce, which were organized in the 1930-1931 fiscal year, operated very successfully during the 1931 growing season. One of these is located at Glassboro and the other at Vineland. The Vineland Market opened in the 1931 fiscal year, but the Glassboro Market opened in the past fiscal year. These two markets will be reported on separately.

GLASSBORO MARKET

The Glassboro Market actually took the place of the Williamstown Market, which discontinued operations, June 29, 1930, chiefly because of its location. The market at Glassboro made the best showing of any in the state for the time that it operated during the 1931 growing season. It opened July 6 and during the season sold 199,728 packages

of farm produce. Total receipts amounted to $108,171.40. This market had a large variety of commodities and was successful in supplying the truck buyer who desired mixed loads. It began operations again in the spring of 1932 with indications for a successful second season.

VINELAND MARKET

While the Vineland Produce Market did not do as large a business in 1931 as the Glassboro Market, it did make a commendable start that year. It opened again on April 7, 1932, and by the end of the fiscal year it had sold 76,265 packages for a total of $38,144. The following analysis was made of the business of this market during the 1931 growing season:

VINELAND PRODUCE AUCTION MARKET

	1931
Number of packages sold	61,314
Sales at auction market	$46,858.44
Charges for selling at auction market	$794.21
Net receipts at auction market	$46,064.23
Net computed value in New York market	$44,201.68
Margin by selling at auction market (profit)*	$1,862.55
Per cent of margin by selling at auction market (profit)*	4.2

*Based on computed values in New York City.

THE CEDARVILLE AND ROSENHAYN MARKETS

The markets at Cedarville and Rosenhayn are the two oldest shipping-point auction markets in the state. They have established a reputation for handling certain commodities and, as a result, buyers have developed a trade for their products and return each year to obtain needed supplies. Cedarville, the larger of these two markets, has established a reputation for selling green and lima beans, onions and strawberries, and is recognized as a source for a large quantity of these commodities. Nearly 250,000 bushels of beans of one kind or another, but mostly green and lima beans, were sold at this market in 1931. In 1931, a federal-state shipping point inspector was stationed at the Cedarville Market in order that buyers might obtain certificates guaranteeing the grade and quality of purchased articles. This service was continued in June, 1932.

A comparison was made of the business done at the Cedarville and Rosenhayn Markets during the four years that they operated. It follows:

CEDARVILLE AUCTION MARKET

	1928	1929	1930	1931
Number of packages sold.....	62,077	163,866	225,846	402,856
Sales at auction market.....	$152,808.65	$309,062.06	$382,005.99	$520,782.50
Charges for selling at auction market	$1,241.54	$3,308.73	$3,913.08	$4,703.69
Net receipts at auction market	$151,567.11	$305,753.33	$378,092.91	$516,078.81
Net computed value in New York market.....	$122,429.15	$257,726.45	$311,756.94	$406,645.40
Margin by selling at auction market (profit)*.....	$29,137.96	$48,026.88	$66,335.97	$109,433.41
Per cent of margin by selling at auction market (profit)*..	24.81	18.63	21.3	26.9

*Based on computed values in New York City.

ROSENHAYN AUCTION MARKET

	1928	1929	1930	1931
Number of packages sold.....	98,579	58,059	64,746	58,939
Sales at auction market.....	$121,902.44	$99,914.92	$99,540.52	$93,791.98
Charges for selling at auction market	$609.51	$499.57	$497.74	$1,077.81
Net receipts at auction market	$121,292.93	$99,415.35	$99,042.78	$92,714.17
Net computed value in New York market.....	$100,418.23	$87,787.27	$84,319.23	$75,855.01
Margin by selling at auction market (profit)*.....	$20,874.70	$11,825.89	$14,723.55	$16,859.16
Per cent of margin by selling at auction market (profit)*..	21.4	13.3	17.5	22.2

*Based on computed values in New York City.

By the end of the fiscal year both markets had operated 27 days in 1932, and during those days, the Cedarville Market sold farm crops valued at $144,237 and the Rosenhayn Market sold products valued at $51,819.

BEVERLY MARKET

In 1930, the Cooperative Growers' Association of Beverly opened an auction market which at the close of the past fiscal year was commencing its third year's operation. The bureau has cooperated closely with the management of this association. In the spring of 1932 the bureau provided for this market the services of a federal-state shipping-point inspector. His duties were to aid the market in developing a reputation for selling a quality pack. Buyers come to this market from many points and ship to practically every large market in New Jersey and nearby states. The Bureau of Markets believes that improvement in the packing of products sold at this market will result in establishing a better reputation for New Jersey products.

POULTRY PRODUCTS MARKETING

Considerable progress was made during the past year in carrying on the poultry products marketing program of the bureau. The bureau endeavored to develop its work so that it could be of service to more producers, and also endeavored to extend its services to buyers and distributors. The bureau also took definite steps to be of service to the consumer by developing sources of poultry and eggs where the quality is standardized and where the consumers' interests are protected.

The bureau made continuous progress in serving a greater number of individuals widely distributed throughout the state. Through publicity and personal contact, it was able to explain to egg and poultry producers the value of obtaining high quality stock. The obtaining of such stock constitutes the foundation of a profitable business, and the bureau's program for the standardization of hatching eggs and baby chicks has been so widely distributed during the past few years that stock under official supervision has been easily available to every poultry producer who wishes to purchase it.

Continuous testing of supervised flocks for pullorum disease during the past three years, coupled with rigid requirements governing the removal of reactors, has almost eliminated the dreaded pullorum disease from chicks sold by breeders operating under the bureau's standardization program. The Bureau of Animal Industry has cooperated very closely with the Bureau of Markets in eliminating from supervised flocks birds infected with the disease.

The bureau's close inspection of hatcheries during a long period of years has had a telling effect on the size and quality of eggs set, and has resulted in New Jersey's producing the finest chicks that it is possible to buy anywhere. During the past year the bureau did not find a single instance of small eggs being set. It found that tinted eggs had been practically eliminated from settings. The findings of the inspections were remarkable considering the fact that there were 67 hatcheries under supervision.

The bureau made an effort to place chicks produced under its supervision in New Jersey where they would produce the kind of marketing eggs that meet the requirements for *New Jersey Fancy Grade,* and also made an effort to assist producers in selling both their eggs and poultry on a graded basis at auction markets.

FLEMINGTON EGG AND POULTRY AUCTION MARKETS

The Flemington Auction Market Cooperative Association has extended its services to the poultrymen of Warren, Sussex, Somerset,

Middlesex and Mercer counties almost in their entirety, as well as to a few scattered producers in counties adjoining those named. A very large percentage of the poultry and eggs produced in Hunterdon County is now sold through the association's poultry and egg auction markets. More than 500 buyers have become satisfied patrons of the association.

The demand for poultry and eggs on these markets far exceeds the supply and it is our opinion that it will continue to do so as long as rigid grading practices are maintained. Both eggs and poultry sold at the markets have been distributed by distributors of various types, such as retail stores, retail-route dealers, small brokers and others, to practically every community in New Jersey north of the line extending from Trenton to Asbury Park, as well as to all the divisions of Greater New York City.

Summaries of the business transacted at the two Flemington markets are included in accompanying tables. A reference to these tables will show that all the services rendered by the markets were performed for poultry producers at the very small charge of about four and one-half per cent of the gross return. It might further be said that the services of the markets did not cost the buyer anything.

SALES ON A GRADED BASIS AT THE FLEMINGTON EGG AUCTION MARKET

July, 1931-June, 1932

Month	Number of Cases	Gross Price Flemington	N. Y. Quotation	Difference in Favor of Flemington
1931				
July	2,805	$ 25,111.18	$ 23,497.31	$ 1,613.87
August	2,205	22,886.50	20,664.38	2,222.12
September	2,306	26,413.87	23,135.07	3,278.80
October	1,894	24,270.64	20,804.70	3,465.94
November	2,173	25,593.09	23,300.72	2,292.37
December	3,408	34,833.74	34,246.37	587.37
1932				
January	3,670	27,172.97	26,214.34	958.63
February	3,272	22,088.90	21,273.87	815.03
March	3,817	25,295.79	23,770.15	1,525.64
April	4,463	24,985.99	25,823.48	–837.49
May	5,171	28,602.12	28,893.81	–291.69
June	3,752	25,451.11	23,400.26	2,050.85
Totals	38,936	$312,705.90	$295,024.46	$17,681.44
Grading and selling charges			$14,197.99	
Average price per case			$8.03	
Average price per dozen			$ .26¾	
Per cent of charges to gross receipts			4.5	

SALES AT THE FLEMINGTON POULTRY MEAT AUCTION

July, 1931-June, 1932

Month	Pounds of Poultry	Gross Price Flemington	N. Y. Quotation	Difference in Favor of Flemington
1931				
July	62,186	$ 13,850.61	$ 13,395.61	$ 455.00
August	48,159.5	11,208.28	10,067.45	1,140.83
September	52,364	11,859.69	10,640.66	1,219.03
October	37,314	7,873.85	7,346.96	526.89
November	40,188.5	7,930.95	7,976.95	–46.00
December	33,945	7,076.59	5,960.88	1,115.71
1932				
January	31,857.5	6,462.07	5,925.27	536.80
February	38,908	7,101.12	7,005.59	95.53
March	35,828	8,203.01	7,504.63	698.38
April	40,982	7,872.50	7,751.48	121.02
May	63,054	11,436.36	11,188.24	248.12
June	103,614	17,242.05	17,280.18	–38.13
Totals	588,400.5	$118,117.08	$112,043.90	$ 6,073.18
Selling charges			$5,018.40	
Average price per pound			$ .20	
Per cent of charges to gross receipts			4.2	

VINELAND EGG AUCTION MARKET

In the report for the 1931 fiscal year, mention was made of the organization, at the close of the year, of the Cooperative Egg Auction Association of South Jersey, Inc. The association's egg market at Vineland completed its first year's operation in June, 1932. The accompanying table gives a detailed statement for this market for the past fiscal year.

SALES ON A GRADED BASIS AT THE VINELAND EGG AUCTION MARKET

July, 1931-June, 1932

Month	Number of Cases	Gross Price Vineland	N. Y. Quotation	Difference in Favor of Vineland
1931				
July	1,444	$ 13,272.30	$ 11,818.80	$ 1,453.50
August	2,102	21,346.21	18,951.49	2,394.72
September	1,731	17,775.59	16,575.21	1,200.38
October	2,509	28,703.49	26,725.06	1,978.43
November	2,616	28,403.38	26,806.32	1,597.06
December	2,483	25,107.21	24,459.87	647.34
1932				
January	2,474	18,145.24	17,995.70	149.54
February	2,707	17,431.91	17,197.35	234.56
March	2,619	16,049.05	15,950.45	98.60
April	2,786	16,355.86	16,157.07	198.79
May	3,031	17,579.39	16,931.58	647.81
June	2,724	19,063.12	16,931.35	2,131.77
Totals	29,226	$239,232.75	$226,500.25	$12,732.50

Grading and selling charges	$11,642.46
Average price per case	$8.18
Average price per dozen	$ .2725
Per cent of charges to gross receipts	4.8

The Vineland Egg Auction Market was very successful, considering the fact that competition between various egg clubs and other organizations for the products of the area that it serves is especially keen. On the basis of all eggs sold, however, the auction market returned more to the producer of southern New Jersey than the other methods of marketing which were used. It maintained a particularly high price for medium and undergrade eggs. Its products were largely distributed to the cities of New York and Philadelphia and a large quantity found an outlet at shore resorts during the summer months. The fancy pack of eggs delivered by the Vineland Auction Market was particularly pleasing to New York buyers who are willing to pay a premium over the highest quoted price in New York to obtain it.

At the close of the fiscal year, the Cooperative Egg Auction Association of South Jersey was considering the sale of poultry as an additional service to its members. By selling poultry, the association would serve all of southern New Jersey by providing a market for poultry as well as for eggs.

BURLINGTON COUNTY POULTRY MEAT AUCTION

The Bureau of Markets aided in the establishment of a poultry meat auction at Mount Holly, in Burlington County, which proved to be very beneficial to the heavy-meat poultry producers of Burling-

ton and Gloucester counties. There was but a limited demand for poultry of the heavy-meat class during the past year, because of the fact that it had been largely handled by one or two large poultry buyers who found themselves unable to pay satisfactory prices for it. The establishment of the Burlington County Poultry Meat Auction provided an outlet for poultry at a satisfactory price. Buyers were particularly pleased with the heavy fowl and capons they were able to obtain through this market.

The accompanying table gives a summary of sales at the Burlington County Poultry Meat Auction.

SALES AT THE BURLINGTON COUNTY POULTRY MEAT AUCTION
December, 1931-June, 1932

Month	Pounds of Poultry	Gross Price Mount Holly	N. Y. Quotation	Difference in Favor of Mount Holly
1931				
December	35,501½	$ 7,228.39	$ 5,717.45	$1,510.94
1932				
January	53,703	10,750.60	9,703.87	1,046.73
February	26,268½	5,560.62	5,442.23	118.39
March	18,719	4,074.15	4,090.18	–16.03
April	13,561	2,545.64	2,631.90	–86.26
May	14,908½	2,559.11	2,617.57	–58.46
June	7,782	1,251.45	1,222.85	28.60
Totals	170,443½	$33,969.96	$31,426.05	$2,543.91

Selling charges	$1,377.50
Average price per pound	$ .20
Per cent of charges to gross receipts	4.1

GENERAL POULTRY PRODUCTS MARKETING

The bureau was active in helping various organizations to find an outlet for their poultry products and to obtain a more stable price for them. The bureau kept in continuous contact with the New York and Philadelphia markets. Through its efforts, prices at New Jersey poultry products auctions were quoted in trade papers and through the Associated Press. This, in itself, is one of the main points of the bureau's program to establish a reliable price for poultry products produced in New Jersey.

It was necessary for the bureau to cooperate with the market associations in maintaining an inspector at both the Flemington and Vineland egg auction markets to supervise the grading of eggs according to official New Jersey standards. The bureau made a total of 150

market inspections for the purpose of checking egg grades, buyer complaints, and grading complaints made by producers.

The bureau believes that its poultry products marketing program is firmly established and that during the 1933 fiscal year an increased number of poultry producers and satisfied buyers will use the egg and poultry auctions. It considers that it would be desirable to have one more auction in the eastern part of central New Jersey. The establishment of such an auction is provided for in the bureau's program. This marketing program was outlined in detail in Circular No. 195, "Marketing New Jersey Eggs."

POULTRY STANDARDIZATION

During the year the bureau carried on all phases of its poultry standardization work. It inspected 156,150 birds, handling each individual in accordance with the standards outlined in Circular No. 205, "New Jersey Plan of Poultry Standardization and Accreditation and List of Breeding Flocks and Hatcheries Under Official Supervision, 1930-1931." Each bird that passed the inspection was tested for pullorum disease by the Bureau of Animal Industry. The cost of the inspection and pullorum disease testing work was covered by fees paid by poultrymen. The birds inspected were located in 300 flocks, distributed through 18 counties of the state. The number of birds inspected during the year was considerably larger than the number inspected during the 1931 fiscal year. In that year, 140,334 birds in 294 flocks were inspected.

The fact that rigid inspections were made is indicated by the fact that 29,056 birds were rejected during the past year as compared to 26,238 rejected during the previous year. The infection of birds with pullorum disease was found to be more than 50 per cent smaller than in the 1931 fiscal year. While 9,352 reactors were located among the 140,334 birds inspected in the 1931 fiscal year, only 5,868 reactors were located among the 156,150 birds inspected during the past year. Thirty-eight flocks inspected during the year were found to be entirely free of pullorum disease. The number of non-infected flocks was larger than in any other year since the standardization work began. In many flocks, less than 1 per cent of the birds were infected. Under the present system, these flocks should soon be entirely free of the disease.

During the hatching season, the bureau made monthly inspections of all flocks and hatcheries under its supervision. It also inspected all eggs set in the incubators of such hatcheries.

The Record of Performance phase of the bureau's poultry standardization work requires full-day inspections to be made once monthly of flocks under Record of Performance supervision. These inspections include the weighing of each egg laid by individual birds being trapnested for records. In addition, each egg laid is weighed during two weighing periods of three consecutive days each during the year, one in February and the other in September.

During the year, the bureau made 490 flock inspections (including inspections of flock additions), 902 sanitary inspections, 244 hatchery inspections and 144 Record of Performance inspections. Representatives of the poultry division made 440 visits to farms for purposes other than those already mentioned.

It was necessary to compile a complete set of records for both the standardization work and the marketing work. These records show that 204 poultrymen applied to have their flocks supervised by the bureau. The applications were for 300 flocks with a total of 156,150 birds, of which 18.6 per cent, or 29,056 birds, were rejected at the time of inspection either for standard disqualifications or production defects. The remaining 126,308 birds passed inspection and were blood-tested for pullorum disease.

The table on page 94 gives the classification of the 126,308 birds which passed inspection and the counties in which they were located.

CLASSIFICATION AND DISTRIBUTION OF BIRDS

County	No. of Flocks	NUMBER OF BIRDS						
		Supervised	Certified	Certified Acc'd	Supervised Acc'd	Certified Meat Production	Approved Breeding Flock (Meat)	Approved Breeding Flock (Egg)
Atlantic.....	6	1,099	....	....	...	....	11	537
Bergen	7	1,526	3,240	....	...	....	....	....
Burlington.....	9	1,469	2,730	....	...	168	937	....
Cumberland ...	68	14,299	1,177	....	...	....	8,975	2,184
Essex	2	471	1,837	....	...	....	....	....
Gloucester.....	12	3,143	2,819	....	...	....	596	....
Hunterdon.....	25	8,138	3,730	....	...	....	1,501	3,025
Mercer.....	49	3,932	2,661	....	419	1,004	1,016	1,850
Middlesex.....	23	4,450	1,990	....	...	86	3,132	1,862
Monmouth.....	12	4,721	....	....	...	....	132	639
Morris	1	2,093	....	....	...	....	143	....
Ocean.....	1	608	....	....	...	....	....	....
Passaic	1	....	1,668	....	...	....	....	....
Salem.....	57	....	....	....	...	....	12,874	....
Somerset.....	18	5,439	....	2,028	...	20	....	1,582
Sussex	3	256	614	....	...	....	59	....
Union.....	1	1,486	....	....	...	....	....	....
Warren	5	336	....	....	...	....	375	139
Totals	300	53,466	22,466	2,028	419	1,278	29,751	11,818

(786 birds were not blood-tested.)

Of the 126,308 birds that passed inspection, 5,868, or 4.6 per cent, reacted to the pullorum test. The reactors were all removed from the flocks and slaughtered in the manner approved by the Bureau of Animal Industry. Of the 300 flocks inspected and tested, 83 contained less than 200 birds; 126, between 200 and 500 birds; 55, between 500 and 1,000 birds, and 36, between 1,000 and 5,000 birds.

In the standard classes, there were 89,843 Single Comb White Leghorns inspected, 7,754 Barred Plymouth Rocks, 4,846 Rhode Island Reds, 2,165 Jersey Black Giants, 1,324 White Plymouth Rocks, 1,376 White Wyandottes, and 386 Single Comb Black Minorcas. In the non-standard classes, 36,390 birds in *Approved Meat Production* flocks and 12,066 birds in *Approved Egg Production* flocks were inspected.

The table on page 96 gives the location of hatcheries by counties and indicates that 19 breeder-owned hatcheries, having a total capacity of 1,906,163 eggs, were receiving their total egg supply from flocks under state supervision, and that eight commercial hatcheries with a total capacity of 358,120 eggs were receiving all eggs of at least one breed from flocks under supervision. The total capacity of both the breeder-owned and the commercial hatcheries was 2,264,283 eggs.

Hatcheries operating under the supervision of the New Jersey Department of Agriculture hatched 2,084,120 chicks, which were sold largely to poultrymen in New Jersey, although many were sold in other states, mostly those adjoining New Jersey. The classification of the chicks is shown in the table on page 97.

The data given in the table on page 97 does not include *Record of Performance* chicks. Eleven poultrymen with a total of 3,909 birds entered the *Record of Performance* trapnest project. Birds are entered in this project for the purpose of making official records and should not be confused with breeding hens which have already made the required record in accordance with the rules and regulations governing the *Record of Performance* project.

Nineteen breeders placed under supervision 58 *Record of Performance* breeding flocks, containing a total of 759 breeding females. Mating lists for these flocks are included in Circular No. 218, "The New Jersey Plan of Poultry Standardization and Accreditation and List of Breeding Flocks and Hatcheries Under Official Supervision, 1931-1932." These flocks are made up entirely of females whose production has been certified to following Contest or Home Record of Performance trapnesting, together with all those individuals which have made their record in accordance with the rules and regulations governing the trapnest project in this state, and which have been certified by the department. Of these 58 flocks, 54 were Leghorns; 2, Barred Rocks; and 2, Rhode Island Reds. Forty were originally from *Certified* flocks; 14, from *Supervised* flocks; 2, from *Supervised-Accredited* flocks; and 2, from *Certified-Accredited* flocks. The table on page 98 shows the distribution by counties and breeds of these 58 flocks.

CAPACITIES OF HATCHERIES UNDER STATE SUPERVISION, YEAR ENDING JUNE 30, 1932

County	Breeder Hatcheries: Less Than 5,000 Eggs	5,000 to 15,000 Eggs	15,000 to 50,000 Eggs	More Than 50,000 Eggs	Total Capacity	Commercial Hatcheries: Number	Commercial Hatcheries: Capacity	Total Capacity of Hatcheries
Atlantic	3	..	..	..	5,400	..	.....	5,400
Bergen	..	4	1	..	59,140	..	.....	59,140
Burlington	3	2	1	..	70,776	..	.....	70,776
Cumberland	..	1	1	1	537,000	..	.....	537,000
Essex	1	1	..	..	15,000	..	.....	15,000
Gloucester	3	2	1	..	57,044	..	.....	57,044
Hunterdon	2	3	1	2	864,850	3	101,160	966,010
Mercer	..	2	1	..	33,348	2	122,000	155,348
Middlesex	2	2	2	..	95,400	1	50,000	145,400
Monmouth	2	3	1	..	45,100	..	.....	45,100
Morris	1	..	1	..	24,700	..	.....	24,700
Passaic	..	..	1	..	10,000	..	.....	10,000
Salem	..	..	..	..	.....	1	20,000	20,000
Somerset	..	1	2	..	61,240	1	64,960	126,200
Sussex	..	2	..	..	13,600	..	.....	13,600
Union	..	1	..	..	12,000	..	.....	12,000
Warren	2	..	..	..	1,565	..	.....	1,565
Totals	19	24	13	3	1,906,163	8	358,120	2,264,283

HATCHERY REPORT

Supervised Grade

County	Number Eggs Set	Number Eggs Sold	Number Chicks Hatched	Number Chicks Sold	Chicks on Farm	Incubator Capacity
Atlantic	6,700	1,270	3,507	190	3,317	1,800
Bergen	36,455	1,183	24,172	12,423	11,749	19,772
Burlington	20,940	2,236	14,004	2,350	11,654	53,960
Cumberland	410,415	450	242,912	225,002	17,910	127,000
Essex	6,200	....	3,216	....	3,216	3,000
Gloucester	62,495	2,560	42,353	31,804	10,549	19,140
Hunterdon	218,075	1,640	143,503	124,120	19,383	123,522
Mercer	156,133	2,622	95,550	93,005	2,545	8,000
Middlesex	87,685	1,440	66,416	28,792	37,624	42,900
Monmouth	130,994	17,580	80,262	70,754	9,508	50,880
Morris	70,998	....	38,027	17,900	20,127	20,000
Ocean	5,450	....	3,504	....	3,504	....
Salem	14,970	....	9,880	9,180	700	20,000
Somerset	112,666	....	70,261	57,164	13,097	72,860
Sussex	28,200	112	22,380	22,380	....	66,000
Union	28,913	....	17,795	8,200	9,595	12,000
Warren	522	15	251	47	204	565
Totals	1,397,811	31,108	877,993	703,311	174,682	641,399

Certified Grade

Bergen	83,827	....	55,782	40,443	15,339	37,096
Burlington	35,186	....	22,839	6,436	16,403	27,616
Essex	19,414	....	14,469	5,358	9,111	12,000
Gloucester	90,971	....	58,387	44,048	14,339	31,104
Hunterdon	90,178	1,080	59,082	44,625	14,457	38,260
Mercer	122,410	935	78,596	67,144	11,452	124,016
Middlesex	34,950	4,400	25,000	17,525	7,475	42,000
Passaic	52,000	....	26,000	19,600	6,400	10,000
Somerset	33,860	....	19,821	13,262	6,559	24,000
Sussex	14,526	760	9,681	3,785	5,896	7,000
Totals	577,322	7,175	369,657	262,226	107,431	353,092

Certified Meat Production Grade

Burlington	3,210	2,270	2,045	1,875	170	....
Mercer	23,446	....	17,997	17,997	....	....
Somerset	9,744	....	7,022	7,022	....	....
Totals	36,400	2,270	27,064	26,894	170	....

(Continued on next page)

HATCHERY REPORT
(Continued)

Approved Meat Production Flocks

County	Number Eggs Set	Number Eggs Sold	Number Chicks Hatched	Number Chicks Sold	Chicks on Farm	Incubator Capacity
Burlington	5,530	3,805	3,930	1,900	2,030	700
Cumberland	651,775	....	390,317	390,317	....	120,000
Gloucester	1,478	....	1,077	100	977	....
Hunterdon	5,798	....	3,525	2,350	1,175	....
Middlesex	131,901	72	84,188	38,841	45,347	50,000
Salem	86,562	....	57,131	57,131	....	....
Somerset	1,850	....	1,340	250	1,090	....
Sussex	6,325	....	4,345	4,345	....	....
Totals	891,219	3,877	545,853	495,234	50,619	170,700

Approved Egg Production Flocks

Atlantic	14,633	360	8,896	2,790	6,106	3,600
Gloucester	6,820	....	5,304	1,390	3,914	2,000
Hunterdon	270,296	....	186,215	169,540	16,675	84,000
Mercer	42,008	600	25,200	17,700	7.500	18,000
Middlesex	8,458	....	6.296	3,812	2,484	....
Monmouth	15,806	....	9,979	4,910	5,069	6,600
Somerset	3,100	....	2,500	....	2,500	....
Warren	34,217	....	19,163	17,098	2,065	24,000
Totals	395,338	960	263,553	217,240	46,313	138,200

DISTRIBUTION AND BREEDS OF RECORD OF PERFORMANCE FLOCKS

County	Total Number	S. C. White Leghorns	R. I. Reds	Barred Rocks
Bergen	8	8	..	..
Burlington	6	6	..	..
Cumberland	4	4	..	..
Essex	3	3	..	..
Gloucester	4	4	..	..
Hunterdon	12	8	2	2
Mercer	11	9	2	..
Middlesex	6	6	..	..
Monmouth	1	1	..	..
Somerset	2	2	..	..
Sussex	1	1	..	..
Totals	58	52	4	2

All the *Record of Performance* breeding flocks were single-mated and their progeny were hatched under the supervision of the Bureau of Markets. The male progeny of these flocks are qualified after inspection to head *Certified* and *Record of Performance* breeding flocks in accordance

with the production standard in each case. The 759 females in these flocks produced 29,328 eggs, of which 21,113 were incubated to produce 12,534 chicks. Of these chicks, many of the females will be entered in the *Record of Performance* trapnest project for official records and progeny tests. The males will be used on *Certified* and *Record of Performance* flocks for the present season.

The material found in the table on this page shows the number of *Record of Performance* chicks produced during the past year. The distribution of these flocks over the state was about the same as in previous years, although there is some slight change from year to year.

1932 RECORD OF PERFORMANCE BREEDING FLOCKS

County	No. of Flocks	No. of Birds	No. of Eggs Produced	No. of Eggs Set	No. of Chicks Hatched
Bergen	8	82	3,536	2,452	1,415
Burlington	6	80	3,150	2,052	1,094
Cumberland	4	47	1,423	1,245	765
Essex	3	59	2,410	1,247	997
Gloucester	4	53	2,656	2,601	1,395
Hunterdon	12	149	3,755	3,035	1,485
Mercer	11	166	7,523	5,441	3,342
Middlesex	6	73	2,966	1,345	1,039
Monmouth	1	12	541	470	257
Somerset	2	23	743	650	382
Sussex	1	15	625	575	363
Totals	58	759	29,328	21,113	12,534

During the year tests for the detection of pullorum disease were made in the field. In making the field test and in inspecting birds, three-man crews, each consisting of an inspector, a bleeder and a laboratory technician were used, instead of the two-man crews formerly used. The laboratory technician was from the laboratory of the Bureau of Animal Industry.

GENERAL SERVICES

The staff of the poultry products marketing division was reduced by one man during the last quarter of the fiscal year and the division will operate with the decreased personnel during the year 1932-33. This makes it difficult for the division to comply with all the requests made upon it for service. The poultrymen in the bureau had more calls for assistance than in former years. More than 100 meetings were attended and many talks prepared covering all phases of the poultry products marketing subject. The mail inquiries in this project were very heavy.

Fifteen exhibits were staged during the year. The Baby Chick Show held in Trenton during Agricultural Week was better than ever before. It was staged with the cooperation of the New Jersey Record of Performance Association and poultrymen throughout the state.

CONCLUSION

As the year closes we feel that much has been accomplished to aid the farmers of the state in disposing of their products to the greatest advantage. The dairymen have been aided in a very definite way by the establishment of official grades for milk and by the development of a market for that milk. It is constantly more evident that the state's poultrymen have a source of supply of the best type of healthy chicks of high-producing parentage. This supply is the result of the bureau's standardization program. Better egg markets have become available. The fruit and vegetable growers have been aided by city and shipping-point markets, and by inspection and certification of their packs. The consumer has been taught the value of nearby products. This in turn helps both producer and consumer. The Bureau of Markets has tried to have available a dependable source of information which can be used as an aid in intelligent marketing.

Much has been accomplished. The bureau sees, however, still more room for improvement in marketing methods and for expansion of the market for New Jersey commodities, and it enters the new year planning to continue the present lines of work and to develop its services for the people of the state.

Report of the Bureau of Plant Industry

HARRY B. WEISS, *Chief*

STATISTICAL AND RELATED WORK

CROP REPORTS

The New Jersey Crop Report was issued monthly during the year, as usual, with the cooperation of the crop reporters and the Bureau of Agricultural Economics of the United States Department of Agriculture. The New Jersey Crop Report not only disseminates information among farmers concerning acreages, yields per acre, total production, prices and value of the numerous crops grown in New Jersey, but also furnishes the farmers with similar information for competing states. The December, 1931, copy of the report, among other features, included a summary of the 1930-1931 growing season.

IDLE FARMS IN HUNTERDON COUNTY

Work on a survey of idle farms in Hunterdon County was completed. A full report of the results of this study may be found in Circular No. 227.

FARM PRICES AND THEIR INDEX NUMBERS

Work on a study of New Jersey farm prices and their index numbers from 1910 to 1930 was completed during the year. The purposes of the study were: (1) to accumulate New Jersey monthly farm-price data for 31 agricultural commodities for the years 1910 to 1931, inclusive; (2) to verify the accuracy of these data by all possible means of checking; (3) to apply to these data the best statistical method, in order to obtain index numbers which would reflect truthfully the trend or trends of price movement during the period covered; (4) to use these index numbers in determining the purchasing power of the New Jersey farmer's dollar, and (5) to ascertain the financial condition of the farmers. A complete report of the results of the study may be found in Circular No. 221.

PRICES OF LABOR, FEEDSTUFFS AND FERTILIZER MATERIALS

A study was made of New Jersey prices of hired farm labor, feedstuffs and fertilizer materials and their index numbers, for the years 1910 to 1931. This project was completed and the results published as Circular No. 212, which supplements Circulars 155, 181 and 199, published in 1929, 1930 and 1931, respectively.

MIGRATORY CHILD LABOR

In February, 1931, the Commission To Investigate the Employment of Migratory Children in the State of New Jersey published the results of a detailed study. Following the publication of the report, more-detailed studies were requested by welfare agencies and other bodies interested in improving the condition of, and in supplying educational facilities for, migrant children. Consequently, the commission, in co-operation with the Bureau of Plant Industry, made an additional survey and an additional elaboration of material previously collected. The results of this work were published as a supplement to the original report.

In the supplement, data are included on the following subjects: (1) the number of boys and girls of school age in each township; (2) the number of children of school age in each grade in each township; (3) the total actual school days lost in the spring and in the fall in each township; (4) the number of boys and girls of school age working 8, 9, 10, 11 and 12 hours per day; (5) the number of boys and girls of school age working more than 8 hours per day and the number of boys and girls working 8 or fewer hours per day arranged according to occupation, and (6) child fatigue.

FARM TAXATION

The bureau cooperated with the New Jersey Agricultural Experiment Station and the United States Department of Agriculture in making a study of farm taxation in New Jersey. The results were published in Bulletin 532 of the New Jersey Agricultural Experiment Station.

STUDIES IN RURAL GOVERNMENT

HUNTERDON COUNTY GOVERNMENT

A study of local government, including that of townships, incorporated municipalities and the county, was made in Hunterdon County. Each unit of government was visited, its organization, functions and services were studied and a complete record of its expenditures was obtained.

The results of this study were presented to the Committee on the Improvement of Rural Government at meetings held January 18 and March 18, 1932.

IMPROVEMENT IN RURAL GOVERNMENT

Based on the findings of the Hunterdon County survey and a careful study of the reports of the Commission To Investigate County and Municipal Taxation and Expenditures, three sets of recommendations treating with the subjects of (1) the reorganization of the structure of local rural government; (2) changes in road work, its supervision and support, and (3) revision of the school system, were prepared. These recommendations were incorporated in reports submitted to sub-committees of the Committee on the Improvement of Rural Government appointed for the consideration of these various aspects of rural government.

COUNTY-TOWNSHIP COOPERATION IN ROAD WORK

At the request of the Committee on the Improvement of Rural Government in New Jersey, a survey was made of the system of county-township cooperation in building and maintaining local roads in Sussex County. In this connection, interviews were held with the Sussex County engineer, members of the County Board of Freeholders and officials of several townships. An inspection was made of some of the roads built and maintained under this plan. The findings of this survey were incorporated in a report submitted to the Committee on the Improvement of Rural Government in New Jersey at its meeting on April 26, 1932.

PRACTICAL RURAL ROAD PROGRAM

Based on the findings of the Hunterdon and Sussex County surveys, the reports of the Commission To Investigate County and Municipal Taxation and Expenditures, and the discussions of the Committee on the Improvement of Rural Government in New Jersey, recommendations for a practical road program for rural communities in New Jersey were prepared and presented at a meeting of the committee on April 26.

A report was prepared briefly outlining the work of the Committee on the Improvement of Rural Government in New Jersey and including its recommendations for a practical road program for rural communities in New Jersey. This report was prepared for distribution to members of the committee, to boards of freeholders, to members of township committees and to other persons interested in this work.

In addition to preparing the various reports already mentioned and doing the work in conjunction therewith, a representative of the bureau attended the meetings of the Committee on the Improvement of Rural Government in New Jersey and of its several sub-committees.

FARM FIRE INSURANCE

During the year it was forcibly brought to the attention of the bureau that many farmers in the state are having great difficulty in obtaining adequate fire insurance and that the rate for farm fire insurance is very high. Individuals and several farm organizations requested that the department attempt to alleviate this condition.

In meeting this request, a study was made of the farm fire insurance business in the state to learn the reasons for the unsatisfactory conditions. Conferences were held with the deputy commissioner in charge of insurance of the State Department of Banking and Insurance, and with the expert of the Schedule Rating Office of New Jersey, who determines and promulgates fire-insurance rates for the majority of stock companies doing business in this state. It was definitely determined that farmers' difficulties in obtaining adequate insurance and the high rates for farm fire insurance are the result of a very high loss ratio on farm business which makes this type of business unprofitable for the insurance companies. Also, it was clear that any improvement in conditions will come about only as a result of reduced farm fire losses.

As a step in the direction of reduced farm fire losses, the Department of Agriculture suggested that an optional limited value clause be incorporated in New Jersey farm fire insurance policies. A clause of this nature was incorporated in the schedule of farm fire insurance rates put into effect by the Schedule Rating Office on June 1, 1932. This new clause, the use of which is optional with the insured, limits the liability of the insurance companies to 75 per cent of the value of the property at the time of its destruction by fire. In other words, by use of this clause, the insured agrees to carry 25 per cent of the risk. In return, he receives a reduction in the premium he must pay, varying from 6 to 20 per cent, depending on the type of building and certain other conditions. It is hoped that the use of this clause will result in reducing the number of farm fires resulting from what are now considered two important causes; namely, negligence and arson, and that, as a result, farm fire insurance will be easier to obtain at lower rates.

In order to acquaint farmers with the reasons for the present unsatisfactory insurance situation and the measures that farmers can take to remedy it, Circular No. 223, "Farm Fires and Farm Fire In-

surance" was published. This circular gives the principal causes of farm fires, points out the importance of protective and preventive measures and explains the fire insurance rates which apply to farm property in New Jersey.

STUDY OF THE APPLE INDUSTRY IN NEW JERSEY

A study was made of the apple industry in New Jersey, covering production, numbers of trees, varieties, shipments, storage, exports and prices for a period of years for New Jersey, competing states and the United States. The study, with illustrative charts, has been published as Circular No. 228.

LISTING IDLE FARMS FOR SALE

It is the belief of the department that there is a considerable amount of idle farm land in New Jersey which could be put to some use. Some of this land is suitable for farming purposes, some for summer homes and for other purposes. Knowing that the use of such land would prove beneficial to all parties concerned, including the municipality in which the land is located, the department decided to establish a listing service for idle farms which are for sale.

Shortly before the end of the year, the department began to obtain names and addresses of owners of idle farms which are for sale. A descriptive list of the properties will be prepared, based on information given by owners. In all of this work, the department will act only as an agency for the collection and dissemination of information and in no sense as a sales agency. For details, interested parties will be referred to county agents and owners of farms. While the department will gladly give any information at its disposal, it can not and will not assume any responsibility for the truthfulness of statements made by persons who list their farms for sale. By the end of the year, a large number of requests for information about idle farms had been received. These requests were answered as fully as possible with the information on hand.

DEPARTMENT OF AGRICULTURE COST STUDY

At the end of the year an analysis was being made of the cost of performing the various functions and services of the Department of Agriculture. In all cases where possible, the function or service was being reduced to a unit basis and the average per unit cost was being determined. For certain functions which can not be analyzed in this way, another method of analysis will be devised.

MISCELLANEOUS ACTIVITIES

As in the previous several years, a study was made of sales on the Cedarville and Rosenhayn auction markets and, for the first time, on the Vineland Auction Market. This study included a comparison of daily sales on these markets with computed hypothetical sales on the New York City market. The results of this study appeared in the December issue of the New Jersey Crop Report.

A comparison was made of prices received for onions sold in bags and prices received for onions sold in baskets on the Cedarville Auction Market during the 1931 season.

A study was made of the effect of falling prices for farm products on the competitive position of farmers in New Jersey and in competing states. This study covered the cost of producing and shipping potatoes, sweet potatoes and strawberries in New Jersey and certain other states.

WHITE PINE BLISTER RUST CONTROL

The major activity in the control of white pine blister rust was the creation of a sanitation zone about the State Forest Nursery at Washington Crossing. A sanitation zone is an area from which all ribes (currants and gooseberries), the alternate host plants of the rust, have been removed; it surrounds seedling and transplant beds and is large enough to prevent the spread of blister rust to the planting stock. Protecting a nursery in this manner prevents the dissemination of blister rust throughout the state through the reforesting of areas with diseased planting stock.

The work of establishing the sanitation zone was started in the fall of 1931 and resumed and completed in the spring of 1932. Two sets of zones were made necessary by the development in 1932 of a transplant field about one mile distant from the seedling beds. All ribes within 150 feet of the two fields and all European black currants (*Ribes nigrum*) within one mile of the two fields were located and their removal sought. In all, 511 ribes bushes were pulled. By species they were: 26 European black currants (*Ribes nigrum*), of which four were infected with the rust in its telial stage; 462 wild American black currants (*Ribes americanum*), uninfected; 15 red or garden currants (*Ribes sativum*), uninfected; 8 gooseberries (*Ribes reclinata*), uninfected.

All five-leaf pines within the zone were examined for infection. In the Washington Crossing State Park, in Pennsylvania, which is within the protective zone, three trees about seven years old were infected and two of them bore the fungus in its fruiting stage. These were reported to the Pennsylvania authorities for blister rust control, who

traced the infection to the place of origin of the trees, in Tioga County, Pa., a known blister rust infection area. Arrangements for the destruction of the three diseased trees were made by the Pennsylvania authorities. It is probable that the timely discovery of diseased trees nearby and the creation of a sanitation zone about the State Forest Nursery will prevent the spread of blister rust to various part of the state through the agency of planting stock. It therefore follows that this piece of work will save local authorities the considerable effort and money that might be required several years hence in attempting to wipe out infection centers which would crop out as a result of reforesting with diseased stock.

Labor used in the removal of ribes bushes was furnished by the State Forest Nursery. Permission to remove bushes was obtained from the owners entirely on the merits of the project, no funds being available for compensating them. A permanent map of the project was made for future reference in rechecking the area.

Three sites containing 824 three- to seven-year-old white pines, two sites containing old ornamentals with suspicious dying-back of branches, and one site of native white pines were examined for infection and alternate host plants with negative results. These inspections were made in response to inquiries by owners.

A white pine tree to which museum materials were applied to represent the fruiting stage of blister rust and its effect upon the tree was prepared and placed in the department's exhibit at the State Farm Products and Equipment Show held during Agricultural Week.

SEED CERTIFICATION AND RELATED WORK

WHITE POTATO CERTIFICATION

Several unusual weather conditions prevailed during the growing season of the 1931 seed-potato crop. At the time of planting, in the latter part of July, the soils were dry as a result of high temperatures and a deficiency of rainfall. In August, heavy downpours caused the drowning-out of parts of fields. September was the warmest in a record that goes back to 1885, the copious rainfalls of August giving way to a prolonged dry, hot period. High temperatures were experienced in early October also. Normally, there is a killing frost in the middle of October; however, in 1931, the first real killing frost did not occur until November 7.

The total rainfall in August at Bridgeton was 9.61 inches, which was above the normal by 5.02 inches. From August 28 to September

27, there were only two days during which rain fell. The total amount of rain in that period was .39 inches. This dry spell, after a period of excessive rainfall with its resultant succulent growth, was unquestionably a pronounced factor in the rapid dying of seed potato plants and lower-than-expected yields. Late-planted fields which had not made such rapid growth survived the dry spell of September and made much growth from October 1 until they were killed by frost, November 7. These fields were among those having the highest yields.

Early blight was present in almost every field at the time of the first inspection early in September. Apparently this leaf disease had become well established in August, when, because of the soggy condition of the soil, it was impossible to get sprayers on most fields. Aphids, although present in small numbers at this time, soon became prevalent and, with dry hot weather and early blight, helped to reduce yields.

Yields ranged from 93.4 to 342 five-eighths-bushel baskets per acre, with the average for 851.5 acres being 214.5 baskets per acre. The expenses of the inspector provided by the department for the certification work were covered by fees paid by growers. The influence on yields of the previous cropping of the field is shown below:

15 acres of early truck land—228.5 baskets, average
631.5 acres green manure crop land—225.4 baskets, average
120.5 acres sod land—221.4 baskets, average
19 acres grain-stubble land—216.0 baskets, average
42 acres fallow land—213.4 baskets, average
76.5 acres early potato land—99.8 baskets, average

For some unknown reason, only 79.49 per cent of the seed planted was disinfected. Although it may often seem that seed treatment is of little value, heavy losses often occur as a result of the planting of diseased seed. Therefore, seed treatment should be considered in the same sense as is insurance. With the ease of disinfection and the low cost of the instantaneous-dip methods, no grower can well afford to dispense with the important practice of seed disinfection.

The average fertilizer application for the 904.5 acres was 2,009 pounds per acre, with one grower using as high as 2,666 pounds. Fertilizer analyses of 5-8-7 and higher were the most popular.

An unusual condition which marked the growth of the late crop (certified seed) in 1931 was that practically every strain of seed entered was free from virus diseases. In the seed-source test plot on the farm of Alfred Sloan, at Shirley, 18 different strains of seed were

free from virus diseases. In the field inspections, a similar absence of virus diseases was noticeable. The desirability of procuring parent stock on the basis of the previous season's field readings cannot be too strongly emphasized. Such a practice tends to eliminate or simplify the bothersome roguing process, and also gives assurance to the grower that his field will probably be passed, as far as virus disease content is concerned.

In marketing the crop, a portion of the growers, acting through the J. Harry Kandle Seed Club, sold approximately 8,000 sacks of seed to two central New Jersey dealers. Other growers acted as their own selling agents. Slightly more than 70 per cent of the crop was sold before December 1. The need of a collective marketing organization of all the growers in 1932 is evident.

An attempt was made to supervise more carefully the grading of seed by placing an extra inspector in the field at grading time. It is apparent that such an effort is well worth while and that continued effort along this line will eventually clear up the dissatisfaction sometimes expressed by buyers relative to the presence of certain minor defects in the package received. Work done during the past year indicates that there are many little things attendant to the grading operation, which, if given attention, would result in better-appearing seed. Padding of the tailgate on the grader, thereby eliminating bruising, is one of many examples. The use of a picking table (moving canvas) for grading seed as well as table stock is strongly advised, as it gives the grower a better opportunity to see and to remove defects.

SUMMARY OF SEED POTATO CERTIFICATION

Acres Entered for Certification

County	Acres	Per Cent
Burlington	14.0	1.55
Camden	5.0	0.55
Cumberland	534.5	59.09
Salem	351.0	38.81
	904.5	100.00

Seed Source

	Bags	Per Cent
Prince Edward Isle	6,593	90.08
Maine	516	7.05
New Jersey	210	2.87
	7,319	100.00

Seed Storage

	Bags	Per Cent
Del Bay	2,583	35.29
Salem	2,071	28.29
Woodstown	905	12.36

Seed Storage (Continued)

	Bags	Per Cent
Vineland	814	11.12
Pitman	375	5.14
Newark	261	3.57
Riverton	122	1.66
Freehold	115	1.57
Hightstown	37	0.50
Bridgeton	26	0.36
Camden	10	0.14
	7,319	100.00

Seed Disinfection

	Bags	Per Cent
Semesan	4,459	60.92
Sanoseed	1,359	18.57
No treatment	1,501	20.51
	7,319	100.00

Previous Cropping of Field

	Acres	Per Cent
Green manure crops	631.5	69.82
Sod	120.5	13.32
Early potatoes	76.5	8.46
Fallow	42.0	4.64
Grain stubble	19.0	2.10
Early truck and plant beds	15.0	1.66
	904.5	100.00

Fertilization

Tons applied (904.5 acres)	908.59	tons
Average application per acre	2,008.00	pounds
Heaviest application per acre	2,666.00	pounds
Lightest application per acre	1,400.00	pounds

Rate of Planting

	150-lb. Sacks
Total number bags of seed planted	7,319
Average number bags per acre	8.09
Heaviest planting per acre	10.00
Lightest planting per acre	4.00

Calculated Weight of Seed Piece
(*Spacing 11x32 in.—17,968 hills per acre*)

Bags Per Acre	Weight of Seed Piece
4	0.534
8.09	1.081
10	1.336

Yields Per Acre (⅝ Bushel Baskets)

Average yield (851.5 acres)	214.5
Lowest yield	93.4
Highest yield	342.0

Preliminary Expenses Per Acre

Seed—8.09 bags @ $5.10	$41.26
Fertilizer—2,008 pounds @ $30.00 per ton	30.12
	$71.38

Potato Acreage Entered for Certification, 1931

County	Growers	Cobblers	Green Mountains	Red Skins	Total
Burlington	1	14.0	..	..	14.0
Camden	1	...	..	5	5.0
Cumberland	56	509.5	1	24	534.5
Salem	24	351.0	..	..	351.0
Total	82	874.5	1	29	904.5

Acreage Failing and Passing Certification

	Acres	Per Cent
Acreage rejected at first inspection	5.0	0.55
Acreage rejected at second inspection	..	...
Total acreage rejected at end of two field inspections	5.0	0.55
Acreage rejected at third (tuber) inspection	34.0	3.76
Acreage withdrawn at third (tuber) inspection	14.0	1.55
Acreage withdrawn and rejected, three inspections	53.0	5.86
Acreage passing three inspections	851.5	94.14

INSPECTION RESULTS BY COUNTIES, 1931

	Cumberland	Salem	Burlington	Camden	Total
Acreage entered	534.5	351	14	5	904.5
Number of growers	56	24	1	1	82
Average number of acres per grower	9.54	14.63	14	5	11.03
Acres rejected first inspection	2	3	..	..	5
Per cent rejected first inspection	0.37	0.85	..	..	0.55
Acres rejected second inspection	..	..	..	..	..
Per cent rejected second inspection	..	..	..	..	..
Acres rejected third inspection	33	15	..	..	48
Per cent rejected third inspection	6.17	4.27	..	..	5.31
Acres rejected total	35	18	..	..	53
Per cent rejected total	6.54	5.13	..	..	5.86
Acres certified	499.5	333	14	5	851.5
Per cent certified	93.46	94.87	100	100	94.14

VARIETAL DISTRIBUTION OF REJECTIONS AND WITHDRAWALS

Variety	Acres Entered	Acres Rejected and Withdrawn 1st Inspection	2nd Inspection	3rd Inspection	Acres Certified
Irish Cobblers	874.5	5	..	48	821.5
Green Mountains	1.0	..	..	..	1.0
Red Skins	29.0	..	..	..	29.0

PRODUCTION AND DISTRIBUTION
NEW JERSEY CERTIFIED CROP OF WHITE POTATOES
1929-1931

	1931	1930	1929
Acres of seed certified	851.5	518.	542.5
Total yield (field run) in baskets	182,669.	79,465.	99,658.
Total yield (field run) in bushels	114,168.	49,666.	62,286.
Average yield per acre in baskets	214.5	153.4	183.7
Average yield per acre in bushels	134.1	95.8	114.8
Bags certified seed sold	21,007.	7,898.	12,339.
Bags sold locally	476.	13,521.*	1,863.
Bags sold elsewhere in state	20,518.	7,845.	9,291.
Bags shipped out of state	13.	53.	1,185.
Delaware	1.	....	....
Pennsylvania	....	....	885.
New York	2.	3.	240.
Washington, D. C.	10.	....	....
South Carolina	....	50.	60.
Bags sold untagged (Tags not allowed; old sacks used)	855.	450.	....
Bags sold locally	255.	....	....
Bags sold elsewhere in state	600.	450.	....
Total bags of seed shipped	21,862.	8,348.	10,476.
Bags seed unsold Dec. 1st	9,108.	5,450.*	3,756.
Baskets of seed retained for own use	36,891.	24,039.	24,458.
Bushels of seed retained for own use	23,057.	15,024.	15,288.

* Five-eighths-baskets in 1930 instead of 150-pound bags.

RASPBERRY INSPECTION

Certain states require that a special certificate, issued by the proper state authority, accompany each shipment of raspberry plants. This certificate attests to the freedom of the shipment from transmissible diseases and is issued following field inspections of the growing plants. In 1931, four nurserymen sought certification for 116.5 acres of raspberries. Of this number, 21.5 acres were rejected for the presence of mosaic and leaf curl. The rejected plants were mostly of the Latham variety and those accepted for certification were mostly of the St. Regis variety. It is anticipated that the introduction of varieties other than the St. Regis into the vicinity of Hammonton will bring about attendant difficulties in certification in the future, unless the growers build up a system of roguing and isolation necessary to meet the needs of certification. The St. Regis, which has been the standard variety in the past, is resistant to virus diseases, whereas the newly introduced varieties such as Latham, Viking and Chief are susceptible. These newer varieties are being brought in because of the larger size and better shipping qualities of their fruit.

TOMATO SEED CERTIFICATION

The history of tomato seed certification is as follows:

Year	Acres Certified	Growers
1921	128.0	16
1922	199.0	23
1923	219.0	32
1924	327.0	40
1925	582.0	58
1926	456.0	71
1927	871.0	74
1928	743.0	68
1929	703.0	63
1930	1,414.5	94
1931	1,434.0	155

The 1931 acreage was distributed as follows:

Variety	Acres
Break O' Day	127.5
Marglobe	689.5
Baltimore	106.0
Bonny Best	219.0
J. T. D	292.0
Total	1,434.0

The tomatoes certified for seed purposes were grown in Burlington, Mercer, Camden, Salem, Cumberland and Gloucester Counties. The previously adopted three-generation plan of seed selection continued to be adequate, in its class limitation, to promote tomato seed certification.

NURSERY INSPECTION SERVICE

PLANT INSPECTION

The following tables summarize the plant inspection activities of the bureau for the fiscal year ending June 30, 1932, and include nursery inspections, domestic and foreign nursery stock inspections, special certificates issued, special request inspections, the certification of stock consigned to Canada, Christmas tree inspections and the certification of narcissus bulbs in compliance with federal regulations.

FOREIGN STOCK INSPECTIONS

Fall of 1931	33 cases	1 bale
Spring of 1932	107 cases	.. bale
Totals	140 cases	1 bale

DOMESTIC STOCK INSPECTIONS (ORNAMENTAL)

	Cases	Cars	Bales
Fall of 1931	99	3	23
Spring of 1932	53	2	16
Totals	152	5	39

DOMESTIC STOCK INSPECTIONS (FRUIT)

	Cases	Bales	Trees Condemned
Fall of 1931	8	58	24
Spring of 1932	34	17	2
Totals	42	75	26

NURSERY INSPECTION

The annual inspection of nurseries was begun June 25 and finished in September, except for a number of new nurseries, which were inspected after that month.

Seven hundred and thirteen nurseries and dealers' establishments were inspected and certified and certificates issued as follows:

General	553	Fruit	4
Rose	13	Greenhouse	22
Privet	1	Dahlia	13
Perennial	8	Orchid	1
Berry	12	Asparagus	2
Peony	2	Cacti	1
Bulb	1	Dealers	80
		Total	713

NEW ENGLAND STOCK INSPECTION

A total of 2,225 cases and 10 carlots of nursery stock which originated in the quarantined gipsy moth area of the New England States were inspected. Each plant was individually examined.

SPECIAL CERTIFICATES

Special certificates were issued to private citizens and to nurserymen who wished to ship nursery stock to other states and to foreign countries. A certificate was issued at the time of packing if the stock in question was found to be free from injurious insects and plant diseases. One hundred and six of these certificates were issued.

SPECIAL REQUEST INSPECTIONS

Each year, numerous requests are received for advice on the control of various insects and on nursery and horticultural problems. In most cases they necessitate visits to the persons requesting aid. Seventy-seven of these visits were made.

CANADIAN STOCK INSPECTION

In compliance with Canadian regulations, 130 inspections were made of stock consigned from New Jersey to Canada.

CHRISTMAS TREE INSPECTION

A total of 22,368 Christmas trees that originated in the slightly infested gipsy moth area of the New England States were examined for gipsy moth infestations. No infestations were intercepted. Inspections were made in 96 different towns in New Jersey.

NARCISSUS BULB INSPECTION

The inspection of narcissus bulbs destined for places outside of New Jersey was made necessary by the provisions of a federal plant quarantine. The inspection work is summarized as follows:

Total number of bulbs inspected—1,190,225.
Total number of shipping certificates issued to growers—624.
Total number of bulbs sterilized—773,450.

THE EUROPEAN CORN BORER

On August 1, 1931, two inspectors were located in the quarantined areas of Hunterdon and Warren counties to issue permits and to seal trucks containing corn consigned to New York City. This service enabled growers in the two areas mentioned to move corn through the uninfested portions of New Jersey.

As the season progressed, Federal scouts working in New Jersey found slight infestations of the European corn borer in many localities and, as a result, the following areas of the state were placed under quarantine by the Plant Quarantine and Control Administration of the United States Department of Agriculture, on February 5, 1932: the counties of Atlantic, Bergen, Cape May, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union and Warren; the townships of Bass River, New Hanover, Pemberton, Shamong, Southampton, Tabernacle, Washington and Woodland, in Burlington County; the townships of Berlin, Waterford and Winslow, and the borough of Berlin, in Camden County; the townships of Franklin and Monroe, and the borough of Newfield, in Gloucester County.

Chapter 114, Laws of 1932, gives the State Board of Agriculture authority to require the clean-up of areas which become infested with the European corn borer. This authority may be useful if communities desire to institute clean-up campaigns.

STATE QUARANTINES

On May 20, 1932, the State Board of Agriculture repealed the quarantine on account of the gipsy moth, dated September 5, 1924, together with its amendments. This action was possible because of the success of gipsy moth exterminative work in New Jersey.

At the close of the fiscal year, New Jersey had two intra-state quarantines, the Narcissus Bulb Quarantine, adopted July 27, 1926, and the Corn Borer Quarantine of February 9, 1931.*

BEE INSPECTION SERVICE

Bee disease control work during the past fiscal year was conducted on practically the same lines as during the preceding one. The two areas in which intensive work was done during the preceding year were again thoroughly inspected. One comprises a strip of territory from Belvidere to Netcong and the other comprises Essex and Union counties. Additional territory contiguous to these areas was also inspected by the three part-time inspectors who worked during May and June, 1932, and by one part-time inspector who worked during July, 1931, and another who served during July and August, 1931.

Besides making inspections in these two areas on the area-clean-up plan, the full-time inspector worked in places outside these areas where the need was pressing, and also gave attention to all calls for inspection and service.

The policy of protecting queen-rearing apiaries was continued by the semi-annual inspection of all discoverable bees near such apiaries. During the fiscal year, 10,699 colonies of bees in 1,275 apiaries were inspected. Four hundred and sixty-three colonies were in box hives and 839, in hives with immovable combs. In 349 apiaries, 1,036 cases of American foulbrood were found. Twenty-four colonies in 14 apiaries were infected with European foulbrood. Sacbrood was noted in 1,209 colonies. One hundred and seventy-two diseased colonies were destroyed.

The service of making microscopic diagnoses of smears of dead bee larvae greatly increased during the year, 57 such samples having been examined during the year, as compared to 30 during the preceding year. The increased number of smears submitted for examination indicates a livelier interest on the part of beekeepers in the work of bee disease control. Twenty-eight of these samples showed the presence of *Bacillus larvae*, the organism causing American foulbrood; eight

*The State Corn Borer Quarantine was repealed by the State Board of Agriculture, September 20, 1932.

showed the presence of *Bacillus pluton,* the organism causing European foulbrood, and 21 showed no bee disease germs.

The following table shows the amount of bee inspection work done in each county and the conditions found.

County	Yards Inspected	Colonies Inspected	Box Hives	Cross Comb	Yards Afb.*	Yards Efb.†	Colonies Afb.*	Colonies Efb.†	Colonies Sacbrood	Colonies Burned
Burlington	38	141	7	3	14	..	51	..	..	2
Camden	8	56	..	..	5	..	19	..	20	..
Cape May	1	9	..	..	..	..	..	..	..	..
Cumberland	7	67	1	8	..	3	..	10	..	2
Essex	236	1,138	10	29	53	4	111	7	87	23
Gloucester	4	68	..	..	3	1	7	2	18	12
Hunterdon	196	2,485	78	140	59	..	216	..	168	29
Mercer	17	114	2	2	3	1	4	1	12	2
Middlesex	41	248	2	..	22	..	88	..	23	7
Monmouth	13	143	..	..	3	..	9	..	12	..
Morris	184	1,280	39	228	31	..	78	..	85	31
Ocean	2	9	..	..	..	..	..	..	..	..
Passaic	13	118	..	..	7	..	23	..	15	..
Salem	2	50	..	3	1	1	2	1	13	2
Somerset	33	371	2	4	21	1	47	1	112	10
Sussex	10	56	3	2	6	..	33	..	..	..
Union	270	1,822	19	35	104	3	307	2	562	45
Warren	200	2,524	400	385	17	..	41	..	82	7
State	1,275	10,699	563	839	349	14	1,036	24	1,209	172

* American foulbrood. † European foulbrood.

QUEEN REARERS' CERTIFICATES

Two queen-rearing apiaries were examined, found free of disease and certified. One was located at Glen Gardner and was examined July 28, 1931, and May 3, 1932, and the other was located at Pittstown and was examined July 29, 1931, and May 4, 1932.

EDUCATIONAL WORK

As a beekeeper's knowledge of beekeeping in general increases and his returns from bees increase correspondingly, his interest in bee disease control becomes greater. Every opportunity to make better beekeepers is therefore embraced. To this end, five field meetings for beekeepers were held during the year: one at Roselle Park, August 26, 1931, at which the attendance was 40; one at Allendale, September 10, 1931, at which the attendance was 55; one at Pitman, May 24, 1932, at which the attendance was 30; one at Sussex, June 14, 1932, at which the attendance was 30, and one at Chester, July 8, 1932, at which the attendance was 48. The total attendance at these meetings

was 203 as compared with 56 at similar meetings held during the previous year.

An exhibit of beekeeping apparatus was staged at the Trenton Inter-State Fair, in September, and another, at the State Farm Products and Equipment Show, in January. A discussion of the identification of and treatment for American foulbrood was given at a meeting of beekeepers at the New Jersey Agricultural Experiment Station Field Day, June 15. Material giving directions for transferring bees to movable-comb hives was prepared and published as Circular No. 217.

THE GIPSY MOTH*

This report of work against the gipsy moth in New Jersey supplements a series of circulars dealing with gipsy moth extermination in New Jersey and covers the twelfth year's work against the insect, which was done during the fiscal year that ended June 30, 1932. Circulars dealing with the work of previous years are numbered 38, 56, 67, 79, 89, 105, 127, 150, 169, 189 and 208.

During the early part of the fiscal year (July), inspectors patrolled areas in which burlap bands had been applied to trees, but no larvae of the moth were found. About the middle of July, the distribution of 581 assembling cages was started. These cages are used to trap male gipsy moths. They were placed in 20 townships. The refilling of these cages with attractant started about the last of July, and, early in August, 229 additional cages were put out. No male moths were found in any of the cages.

About September 1, woodland scouting began in the Watchung Mountains north of Bound Brook. This was discontinued September 12. Regular scouting began the first of February in the eastern part of Bridgewater Township and in the western part of Hillsboro Township. This was completed on April 16. No sign of the gipsy moth was found either during the scouting or as a result of the checking done by the "trailers," who followed the scouting crews.

The quarantine work was carried on as usual. During June, 1932, assembling cages were located in a wide band around the entire formerly infested area. These were filled with attractant after July 1, 1932, and a report on the results of the placing of these cages will be included in the annual report of the Bureau of Plant Industry for the 1933 fiscal year.

---

*The work covered in this report was conducted cooperatively by the New Jersey Department of Agriculture and the United States Department of Agriculture, Plant Quarantine and Control Administration, with A. F. Burgess in charge of moth work; H. L. Blaisdell in charge of scouting and extermination work; H. A. Ames in immediate charge in New Jersey.

RESULTS OF SCOUTING AND OTHER WORK

	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	8th Year	9th Year	10th Year	11th Year	12th Year
Number of egg masses found..	3,003,039	909	1,182	725	69	54	646	70	2	..	..	..
Number of colonies found	835	216	98	48	9	3*	12	5	1	..	..	..

*Does not include the colony of caterpillars found in Duke's Park. Does include the Readington colony and the Montgomery and Franklin colonies, although the latter were two parts of one colony which extended into two townships.

NUMBER OF MEN EMPLOYED THROUGHOUT THE YEAR

(Average for Month)

	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June
1920-21.....	3	12	21	28	92	100	100	100	132	140	172	145
1921-22.....	56	55	63	72	81	93	118	141	155	129	185	276
1922-23†.....	92	76	115	88	153	309	334	423	383	331	374	473
1923-24.....	24	26	62	69	79	81	125	144	125	120	167	227
1924-25.....	89	29	46	64	66	69	104	136	147	157	206	243
1925-26.....	39	14	53	56	53	59	113	184	216	217	201	155
1926-27.....	35	14	38	46	49	57	135	167	178	153	123	103
1927-28.....	57	12	15	21	29	8	148	140	125	106	112	140
1928-29.....	4	6	7	7	13	93	121	168	159	62	10	11
1929-30.....	12	6	6	6	6	10	135	134	120	2	3	3
1930-31.....	10	3	3	8	19	50	92	88	27	6	6	1
1931-32.....	12	10	5	3	2	2	2	39	74	39	2	2

†Total men on payroll each month. Other figures represent average for the month.

SCOUTING WORK, 1931-32

Townships	Miles Scouted	Acres Scouted	Fruit Trees	Oak Trees	Shade Trees	Infestations Found	Miles Trailed	Acres Trailed	Fruit Trees	Shade Trees	Infestations Found
Bridgewater..	34.25	4,043	8,307	1,073	14,167	..	.875	297	160	215	..
Hillsboro....	51	2,999	13,460	6,575	27,045	..	.25	219	75	..	..
Totals ..	85.25	7,042	21,767	7,648	41,212	..	1.125	516	235	215	..

QUARANTINE WORK, 1931-32

Number of Shipments of Nursery Stock, etc.	Nursery Stock Examined	Evergreens Examined	Forest Products Examined	Infestations Found
1,120	11,460	33,594	93.5	....

The twelfth year of work against the gipsy moth marked the end of federal participation in the exterminative work in New Jersey. During the 12 years of successful cooperation, intensive work, including scouting, creosoting, spraying and supplemental activities, was carried on. No infestations have been found in New Jersey for the past three years. However, in order that there may be no future outbreaks and in order to protect the investment made in New Jersey, a small

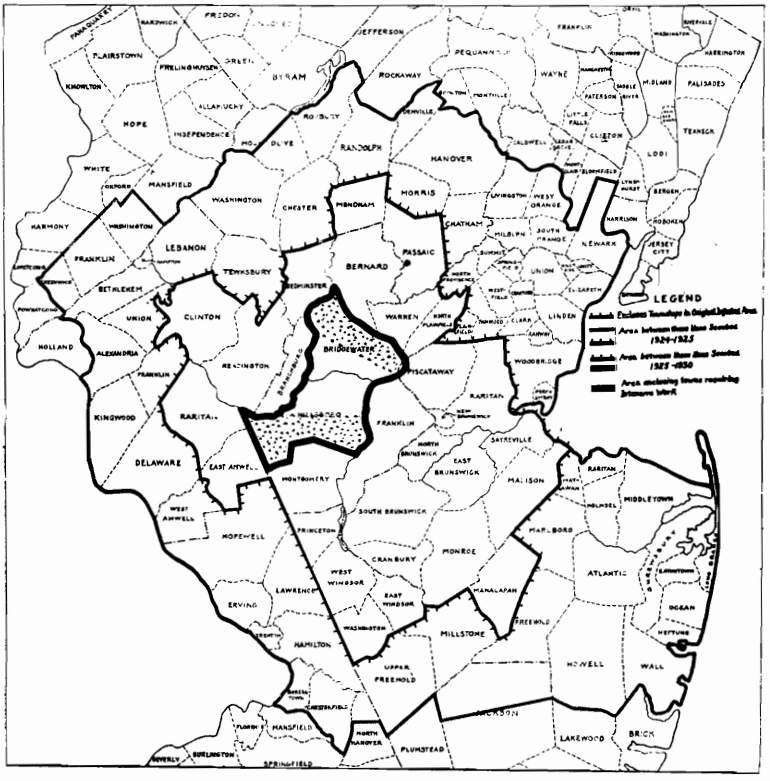
force of men will be employed by the State Department of Agriculture to watch the areas that were formerly infested and to patrol parts of the state likely to become infested from the outside.

A complete statement of the early work in New Jersey and of the scattered infestations that were found and later exterminated with the main infestation will be found in Circular No. 38 of the department. A complete record of the work as it progressed year by year is given in Circulars 38, 56, 67, 79, 89, 105, 127, 150, 169, 189 and 208, and in this report. On this page is a table outlining the expenditures, both state and federal, made in New Jersey to exterminate the moth, from the start of the work until the present time.

GIPSY MOTH EXPENDITURES IN NEW JERSEY

Fiscal Year	State Expenditures	Federal Expenditures
1919-1920	$	$ 2,948.68
1920-1921	111,628.21	122,495.04
1921-1922	122,431.98	104,552.61
1922-1923	124,322.83	171,469.03
1923-1924	124,698.42	137,084.48
1924-1925	94,930.47	156,110.36
1925-1926	124,996.43	154,019.64
1926-1927	99,907.70	121,528.83
1927-1928	79,963.25	89,582.67
1928-1929	76,798.08	86,890.78
1929-1930	56,244.70	56,108.00
1930-1931	33,176.54	39,483.40
1931-1932	18,811.73	19,983.72*
Totals	$1,067,910.34	$1,262,257.24

* This amount may be increased or decreased very slightly when complete figures for fiscal year 1932 are available.



The area shaded by dots indicates the territory that was scouted during the twelfth year's work against the gipsy moth.

JAPANESE BEETLE WORK

JAPANESE BEETLE SUPPRESSION

Headquarters for the conduct of Japanese beetle suppression work were established in Elmer, which is central to the area in the state that is most heavily infested by the beetle. In this area most of the work herein reported was done. For the most part, the work was confined to July, when most of the beetles emerge from the ground and the infestation reaches its peak and undergoes its greatest decline.

To facilitate spraying, a new, light-weight, high-speed spray outfit was purchased in June, 1931. This unit consisted of a truck chassis, with four forward speeds and a 131-inch wheelbase, on which was mounted a high-pressure pumping unit and a 300-gallon tank. The accessory equipment consisted of 250 feet of five-eighths-inch high-pressure hose and a park gun with three different sized tips.

Six locations of non-economic foliage and one abandoned orchard in the vicinity of Elmer and Woodstown were sprayed with an attractant spray. The spraying was done on mornings of days when heavy flight and good geraniol volatilization were anticipated. In two of the cases, a diminution of the number of beetles in the area of attraction was noticed; in the others, no appreciable difference in the infestation was noted in spite of what appeared to be a satisfactory beetle response to the spray. In all cases, the areas sprayed became within one hour after spraying thickly populated with beetles. However, by mid-afternoon on the days when the spraying was done, the sprayed areas rapidly became almost free from beetles. Although a considerable number of beetles were found dead on the ground in the sprayed areas, the spraying failed by a considerable margin to account for the beetles which were attracted and which subsequently disappeared. Such susceptible plants as sassafras and wild cherry with a coating of the attractant spray, failed to interest the beetle the day after spraying or subsequently. It appears, therefore, that the attractant spray, after losing most of the geraniol, serves as a protective spray. Sassafras leaves sprayed with the attractant remained practically undamaged to the end of the beetle-feeding period in spite of the fact that the beetles were plentiful in the territory adjoining the sprayed areas.

Geraniol was the attractant used. Inasmuch as it is immiscible in water, a 30 per cent sodium oleate emulsion is usually employed when it is used for spraying. Syrlene is a highly refined (invert) cane sugar syrup of high specific gravity. It is readily soluble in water and is greedily fed upon by the beetles. The green lead arsenate which was used in the spray was essentially the commercial lead arsenate colored green. It was the stomach poison used. The spray was made up as follows:

Ingredients	Quantity	Cost
Geraniol	1.5 pounds	$2.75
Syrlene	60.0 pounds	2.55
Green Lead Arsenate	9.0 pounds	1.98
Water	300.0 gallons	
		$7.28

The effectiveness of this attractant spray is dependent upon at least three factors: temperature, relative humidity and the number of beetles within the range of attraction. Attractant sprays should not be applied with the temperature lower than 90° F. The relative humidity should be about 65°. The sprays should be applied during the absence of strong sunlight. The desired coordination of favorable humidity,

temperature and light is not frequently realized. During July, 1931, temperature and sunlight were conducive to beetle flight, but the prevailing high humidity was strongly adverse. High humidity retards the volatilization of the geraniol so much that the density of odor is low and the beetle response weak. Under ideal conditions, an attractant spray applied about 10 o'clock in the morning should volatilize most of the geraniol by three o'clock in the afternoon. Between these times a heavy flight of Japaense beetles should occur. Attractant sprays display practically no effectiveness after the day of application. The area of attraction is a truncated triangle, with the sprayed area at the place of truncation. The distance of attraction is variable and not easily ascertained. However, definite directional movements of beetles one half mile from the sprayed center were observed.

On July 26, a call was received for assistance in controlling Japanese beetles which were becoming very damaging in blueberry plantations. Inasmuch as most of these plantations are surrounded by pine-barren vegetation, the use of the attractant spray was decided upon. The spraying was done on a cranberry and blueberry farm at Buddtown, Burlington County. Mr. Charles S. Beckwith, cranberry specialist, New Jersey Agricultural Experiment Station, supervised the application of the spray. Although a considerable number of beetles were attracted to the sprayed area, it was realized that additional steps would be necessary to provide control of the insects. To this end, shaking of the infested bushes and mechanical trapping were adopted. The trapping results will be reported under that heading.

ELECTRICAL TRAPPING

Several years ago the Japanese Beetle Laboratory at Moorestown experimented with an electrical beetle trap. The principle of the trap is to cause the beetle to fly between two wires carrying a heavy charge of electricity. The laboratory trap was dependent on 110 volts; consequently its erection and use were restricted to the availability of electrical power of that potential. The results of the operation of this trap seemed to indicate that a portable low primary voltage trap could be advantageously employed in reducing the beetle population in areas of extremely heavy infestation.

Plans for the construction of such a trap were prepared and adopted. As originally planned, the trap would assume the shape of a cube, with the sides three feet wide and four feet high and with wires on the sides and top. Field experiences in operating the trap arranged as a cube revealed the fact that only those sides of the trap directly

in the path of the attracted beetles were actually functioning. The arrangement of the trap was therefore changed so that the four sides were placed in a continuous parallel line, thereby doubling the area of trapping surface interposed in the path of the attracted beetles. The wires are five-eighths of an inch apart, with adjacent wires of opposite polarity. A six-volt storage battery supplies the current for the primary winding of a jump spark coil. The secondary winding of the coil produces the high voltage for the electrocution of the insect. A two-inch coil with a secondary winding delivery of 20,000 volts was first used. This potential killed only about 75 per cent of the involved beetles. A four-inch coil, delivering 40,000 volts killed almost all the beetles which passed between the wires. A 30 per cent geraniol emulsion was the attractant used. It was volatilized by a six-volt, motor driven, greenhouse hand sprayer, fitted with one-inch rubber tubing which was extended to the top of the trap.

The first assembly of the trap for actual operation was in an orchard near Elmer, July 12. Strong sunshine, high temperature and medium to low humidity provided excellent climatic conditions for the determination of the value of the trap. About two minutes after the geraniol volatilizer had been set into motion a steady stream of beetles was coming toward the trap. Observations made on a crossroad about one-half mile away showed many beetles flying in the direction of the trap.

The beetles flew between the wires approximately at the rate of two per second. Inasmuch as the two-inch coil was in use at this time, the voltage delivered at all contacts was not sufficient to cause a 100 per cent kill. About 25 per cent of the beetles, although evidently stunned, recovered sufficiently to fly away. A considerable number of beetles, when confronted with this array of parallel wires in the path of their flight, chose to land on a wire rather than to pass between them. The beetles so clinging to the wires received the electrocution charge. Most of them dropped to the canvas underneath while the others persisted in their attachment to the wires even though they had been killed. Many were observed maintaining this connection with the support of only one leg. Of course a beetle in such a position caused a continuous discharge at that point, which may have been responsible for the reduction of the potential in the rest of the trap and the consequent stunning, but not killing, of some of the beetles. It was necessary to employ a fibre brush to dislodge the beetles.

It was observed that a considerable number of beetles which had been moved to flight by the geraniol from the trap flew toward the trap, but escaped it and landed on corn plants in a field about one hundred yards behind the trap. By mid-afternoon the trap had, among other things, accomplished a translocation of many beetles to this corn field.

The assembling of the trap for the second time was in another field near Elmer. The four-inch coil was used during this trial and proved to be very satisfactory. Very few of the beetles receiving the charge displayed signs of life. Furthermore, less trouble caused by beetles clinging to wires was experienced. Apparently the voltage was sufficiently high to cause the immediate dislodgement of beeties so attached. The volatilizer and the coil were operated by a six-volt seventy-five ampere hour battery. One charging of the battery operated these two units for about eight hours.

MECHANICAL TRAPPING

The mechanical trap as developed at the Japanese Beetle Laboratory at Moorestown represents a series of concepts that show great promise in the suppression of the beetle. The basic principles of the trap are unquestionably sound. However, amplifications of these principles will in all likelihood constantly increase its efficiency. Small-scale experimentation was conducted at Elmer during 1930 and 1931 with traps loaned by the laboratory. These tests were essentially qualitative in nature.

The unsatisfactory rate of volatilization of the attractants in the standard bait mixture deserves attention. Theoretically, the bait emanates the maximum concentration of attractant odors when freshly prepared and when it is first exposed for vaporization. Usually beetles are strongly attracted to freshly baited traps. However, the intensity of attraction gradually decreases. This condition is probably due to the progressive decrease of the concentration of the attractants in the bait and the packing of the bait, with consequent reduction of its porosity.

Removal of the bait receptacle from a trap and the stirring of bait that had been exposed for several days or a week, suddenly created a heavy concentration of the attractant odors and induced an immediate strong beetle response. An interpretation of this response confirms the belief that bait, unless stirred daily, will lag in the vaporization of the stimulant and there will be a corresponding decrease in trapping efficiency. Attention was therefore directed to devising an ar-

rangement whereby the attractants could be volatilized with the aid of a capillary wick. A baffle-perforated tube-funnel assembly was devised. A perforated tube, one inch in diameter, appears at the intersection of the baffle wings. A frame of four brass straps supports a one-ounce vial, from which the capillary wicking extends. The outer sheath was not removed from that part of the wick within the vial. However, that portion of the round wick extending above the vial for volatilization of the attractant was made free from the sheath, and the strands were separated. The frame supports the vial which is almost withdrawn from the perforated tube. In planning this arrangement, it was believed that sufficient air would pass through the perforated tube to volatilize the attractant on the wick in such concentration that the performance of the trap would equal or surpass that of the standard trap. However, field trials revealed that the traps with this arrangement captured fewer beetles than the standard traps. The disappointing results can probably be attributed to the restricted air volume in the one-inch perforated tube. Another modification of this principle is planned for next year. The adoption of such a device as satisfactory would permit the elimination of the bait receptacle and cylinder of the unit which at present is standard.

Beetle response under varying conditions to an attractant spray of the formula mentioned under the heading, "Attractant Spraying," was studied during the summer of 1930. A small one-quart hand sprayer was employed. Most of the spraying was done in an orchard near Elmer, where the beetles were sufficiently numerous. The response of beetles at close range to the stimulus of this attractant mixture sprayed on foliage is remarkable. However, the spraying of the same mixture on a mechanical trap which was placed nearby attracted few beetles. In the spraying of these two objects resulting in vastly different responses, only two factors appeared to be at variance; namely, the shape and the color constituents of the object so sprayed.

From the performance of the mechanical trap, it is well known that neither the shape of the trap nor the color are particularly repulsive to the beetle. Nevertheless, the shape or coloration, or both, of the sprayed leaves may present an optimum condition not closely approached by the trap. The color composition differences were adjudged as possibly the most significant factor. The problem which therefore presented itself was to paint the traps with a pigment having approximately the same spectral composition as the chlorophyll of leaves. The assistance of Dr. Frank M. Shertz, of the Bureau of Chemistry and Soils of the United States Department of Agriculture, was solic-

ited. Doctor Shertz, who is an authority on chlorophyll, very kindly supplied small samples of the precipitated chlorophyll pigments (copper pheaphytin), one sample pure, and the other crude. Directions to dissolve the samples in petroleum ether and incorporate them into linseed oil with a drier were carefully followed. A priming coat of lead oxide was applied to the funnels and baffles. Even so, the chlorophyll paints did not produce a sufficiently heavy covering on the priming coat to give the painted surface a chlorophyll-like appearance. Several funnels and baffles so painted were included in a competitive mechanical trapping experiment conducted at the Japanese Beetle Laboratory by Fred W. Metzgar of the Bureau of Entomology of the United States Department of Agriculture. Their captures averaged 82 per cent greater than those of the standard trap.

Further studies with the mechanical trap demonstrated the inadequacy of the glass-jar beetle receptacle of the trap. The shortcomings of this type of receptacle are: (1.) The capacity is usually restricted to a pint or quart. (2.) The jar becomes fouled by beetle excretions and regurgitations, necessitating frequent washing. (3.) The almost airtight condition results in the generation of odors damaging to the efficiency of the trap.

The idea of using a wire-mesh beetle receptacle to replace the glass jar was conceived while observing traps in operation during the summer of 1930 at Elmer, N. J. A local tinsmith was employed to construct several wire receptacles, which were subsequently tried and found to be more practical than the glass jar. During the fall of 1930, a detachable rigid wire mesh receptacle of three-quart capacity was designed. The wire beetle receptacle was given a thorough trial in 1931, and demonstrated quite convincingly the following advantages: (1.) A capacity of four quarts can be attained without appreciable addition of weight. The capacity is important on days of heavy flight. (2.) Cleaning or washing of the receptacle is not necessary. (3.) Aeration of the mass of captured beetles delays the appearance of decomposition odors several days after capture.

The evident need for the placement of traps in a suppression and control capacity in several localities of the state led to the purchase of 50 traps of the standard type. Under the heading of "Attractant Spraying," reference was made to a beetle infestation on blueberry plants on a cranberry and blueberry farm at Buddtown, Burlington County. Twenty-four department traps were loaned to the owner. These traps were placed the morning of July 28. The reported capture by these traps, which were placed for the most part along the edge of the plantation, is as follows:

July 28	28	quarts
July 29	60	"
July 30	10	"
July 31	12	"
Aug. 1	16	"
Aug. 2	5	"
Aug. 2-25	13	"
Total	143	quarts

The trapping and spraying work was supplemented by early morning shaking by hand of the infested bushes and the collection of beetles in baskets. A total of 229 quarts of beetles were collected in this way. The traps would have had, in all likelihood, a substantially larger capture had the glass jars been kept clean. The approximate number of beetles per quart is 3,300.

RESUMÉ OF SPRAYING AND TRAPPING WORK

The use of attractant sprays can not be recommended unreservedly. Apparently the only index to the effectiveness of these sprays is the noticeable diminution of the number of beetles in the attractant zone. The fate of the beetles attracted to, and feeding on the attractant mixture, is not known. Attractant sprays can probably be evaluated as last-resort protection and control measures, and should be used only after a careful survey of circumstances justifies their application.

The use of soap contact sprays holds considerable promise. In the area of extremely heavy infestation, beetles will congregate frequently in spite of protective sprayings. Such nuclei of attraction can be practically destroyed by contact spraying. Late-season infestations in areas where protective sprays are not considered necessary can be effectively controlled by this method. The mortality of the sprayed beetles is usually between 60 and 76 per cent.

The electrical trap as heretofore described can not be considered as an economical and efficient device in Japanese beetle trapping work. The fact that an attendant is required immediately subordinates it to the mechanical trap as a practical trapping arrangement.

The mechanical trap is the most effective suppression weapon available today and it has found favor with many persons. The basic principles of the trap evidently being sound, work is being directed toward the correction of imperfect details. Replacement of the standard bait by a capillary wick arrangement, the use of attractive pigments of high luster, and the enlarged aerated beetle receptacle are factors now being investigated with generous reward. The capture of approximately 36,000 beetles in one trap,

in one day, should stimulate strong effort in mechanical trap research, as well as a tangible determination of the suppression possibilities of traps.

COMMUNITY SPRAYING

Community spraying was again done in Moorestown and Haddon Heights. In Moorestown, the work was sponsored by the Moorestown Improvement Association, in Haddon Heights, by the Department of Public Property. In Moorestown, the work was satisfactory, with but one exception. Spraying with the recommended coated lead arsenate mixture during a morning with abnormally high temperature and humidity resulted in severe foliage damage to the vegetation on two properties. An analysis of the materials used showed that they conformed to specifications. The cause of this unfortunate happening is therefore one of speculation, and it is supposed that weather conditions were responsible. The continued benefits derived from the spraying in the control of insects other than the Japanese beetle have established this procedure as one which the residents of Moorestown will continue for some time to come. In Haddon Heights the work was finished without interruption and with good results. Here, too, the spraying is looked upon as a control for many shade-tree insects.

During the middle of June, 2,500 state-owned Japanese beetle traps of an approved design were distributed principally in southern New Jersey in an effort to determine their effectiveness as a means for the limitation of egg laying and subsequent grub development. About 2,100 traps were placed on 316 farms in eastern Salem and northern Cumberland County. About 250 traps were placed in the vicinity of Lakewood and Toms River. This phase of the work is important insofar as an excessive infestation of grubs will necessitate the treatment of turf with lead arsenate at a minimum cost of $25 per acre. A limited number of traps were also placed on private property in Trenton and Pennington to determine from the individuals to whom these traps were loaned their opinion regarding the helpfulness of traps.

THE NEMATODE PARASITE OF THE JAPANESE BEETLE

Further information on *Neoaplectana glaseri,* a nematode parasite of the Japanese beetle, was obtained during the year. Much of this was incorporated in Circular No. 211, "Studies on Neoaplectana Glaseri, a Nematode Parasite of the Japanese Beetle (Popillia Japonica)."

Field work, which involves tests on the survival and efficacy of the parasite, was continued during the year. The original small experimental plots were used and three larger experiments were initiated. The parasite survived the winter in the original small plots and during April entirely destroyed a new grub population placed in the soil during the latter part

of the fall of 1931. Still another population was added during May and this was also heavily attacked, but the mortality records are not complete. Two large experiments started in the fall were continued and, at the close of the year, a comparison, with proper controls, was being made between two methods of introducing the parasites into soil infested by Japanese beetle grubs. One large experiment in which three methods of introduction were practiced was initiated in the spring. The cheapest and most practical method of introduction must be discovered before a general distribution of the parasites throughout the state can be properly accomplished. By the end of the fall of 1932 or by the end of the spring of 1933 sufficient data on these questions should be available.

In conclusion, it should be emphasized that it takes time for a parasite to become established and effective in regions where it did not occur previously. The history of the introduction of parasitic insects into the United States, the Hawaiian Islands, Fiji Islands and elsewhere has shown that a reasonable period invariably intervenes between the time of liberation of parasites and the noticeable effect. The results obtained by efficient insecticides are immediate and consequently seemingly more encouraging. Biological methods take time, and if worth anything, are cheaper and will act where insecticides cannot be used. The idea is not to replace insecticidal and other methods now extensively used in combating the Japanese beetle, but to fortify them.

JAPANESE BEETLE QUARANTINE WORK*
(Calendar Year, 1931)

The following statistics of the Japanese beetle quarantine work, conducted during 1931, will serve to bring out its scope and varied character. Much more detailed information may be had from the files of the department. Because of the need for conserving space, discussions such as those that appeared in the report for 1930 have been omitted.

NURSERY AND GREENHOUSE SCOUTING DURING SUMMER OF 1931

	Number of Establishments Scouted	Number of Scoutings
Nurseries	165	1,094
Greenhouses	110	1,017
Totals	275	2,111

*The Japanese beetle quarantine work was conducted in cooperation with the Plant Quarantine and Control Administration of the United States Department of Agriculture.

SAND, SOIL, PEAT, ETC. ESTABLISHMENTS SCOUTED

	Number of Establishments Scouted	Number of Scoutings
Sand, soil, marl, peat, etc.	128	753
Moss, storage and loading points	9	37
Hay and straw presses, storage and loading points	20	52

FARM PRODUCTS

INSPECTION POINTS, PACKAGES OF FARM PRODUCTS CERTIFIED AND BEETLES REMOVED

Place	Period Operated	Hours Per Day Open	Number of Men	Packages Certified	Beetles Removed
Bridgeport	Aug. 1 to Aug. 4	8	*1	2,460	1
Bridgeton	June 15 to Sept. 27	8	1	55,680	14
Bridgeton§	June 15 to Sept. 3	8	†1	2,037	..
Cedarville	June 15 to Sept. 25	8	‡1	103,125	67
Fairton	8 A. M. to 5 P. M., July 7	8	*1	531	..
Glassboro	June 15 to Oct. 15	8	1	27,095	376
Hammonton	June 15 to Sept. 21	8	1	23,682	150
Landisville	June 15 to Sept. 27	8	1	47,204	22
Malaga	June 17 to Sept. 25	8	*1	4,429	..
Mt. Royal	Aug. 1 to Aug. 21	8	*1	30,022	25
Newark	Aug. 4 to Sept. 28	8	1	4,109	..
Newfield	June 15 to Sept. 26	8	1	100,142	2
Newport	June 18 to July 18	8	*1	1,053	..
Pedricktown	July 14 to Sept. 27	8	‡1	213,584	32
Rosenhayn	July 8 to Sept. 19	8	*1	4,696	..
Rutherford	June 15 to Oct. 15	8	1	16,837	..
Swedesboro	June 18 to Sept. 27	8	3	111,946	72
Trenton	June 15 to Oct. 15	8	1	77,810	473
Vineland	June 17 to Oct. 15	8	1	427	..
Wheat Road	June 15 to Sept. 27	8	1	19,112	1
Totals				845,981	1,235

*Three points taken care of by one man (supervisor of that area).
†One month.
‡As many as ten men at rush periods.
§Inspection point at farm near Bridgeton.

PACKAGES OF FRUIT, VEGETABLES AND CUT FLOWERS CERTIFIED IN THE REGULATED AREA OF NEW JERSEY AND NUMBER OF BEETLES REMOVED IN SUMMER OF 1931

	Number of Packages	Number of Beetles Removed
Corn	945	28
Beans	91,676	791
Peas	767	..
Lettuce	545	..
Vegetables with tops	11,718	3
Miscellaneous vegetables	580,148	113
Bananas	243	..
Miscellaneous fruit	158,958	290
Cut flowers	981	10
Total packages	845,981	1,235

NUMBER OF BALES OF HAY, STRAW AND SPHAGUM MOSS CERTIFIED BY EACH OFFICE FOR SHIPMENT FROM THE REGULATED AREA OF NEW JERSEY DURING THE 1931 SEASON

Office	Bales Hay	Bales Straw	Bales Moss	Oak Leaves	Total Bales
Trenton	2,885	5,780	720	..	9,385
Glassboro	1,592	7	151	88	1,838
Total	4,477	5,787	871	88	11,223

During the 1931 season, 12,415 crates of berries were fumigated with carbon bisulphide at the Hammonton Market in Hammonton.

NURSERY AND ORNAMENTAL STOCK

TOTAL NUMBER OF PLANTS CERTIFIED FOR SHIPMENT TO VARIOUS STATES BY MONTHS, 1931

	Number of Plants Certified		Number of Plants Certified
January	419,937	July	1,004,165
February	551,321	August	345,752
March	1,329,240	September	293,811
April	7,390,264	October	553,412
May	1,332,564	November	1,269,840
June	1,822,209	December	667,067
		Total	16,979,582

TREATMENTS

There were 40 plants treated with carbon-disulphide emulsion in 1931 as compared with six in 1930.

Only 1,925 plants were treated with carbon-disulphide dip as compared with 3,150 plants in 1930. There was a slight increase in the number of plants treated with "Hot Water," the number advancing from 19,354 in 1930 to 22,463 in 1931.

In 1930, 2,740 cubic yards of potting soil were fumigated with carbon-disulphide, whereas in 1931 only 1,983 cubic yards were fumigated. Only 12 cubic yards of soil were sterilized in 1931 as compared with 38 cubic yards in 1930.

During the calendar year of 1931, exactly 3,021,547.5 square feet of ground were treated with lead arsenate. This area, of course, does not include areas where the arsenical content was 1,500 pounds to the acre and which did not require additional treatment. There are 2,610,606.15 square feet of such area, bringing the total of recognized leaded areas to 5,632,153.65 square feet and containing therein, 708,618 plants.

There was a slight increase in the area of soil plots treated with straight carbon-disulphide. In 1930, 13,723 square feet were treated while, in 1931, 16,626 square feet were treated.

There was an increase of 260.4 square yards in the area of soil plots treated with carbon-disulphide emulsion. In 1930, 517.3 square yards were treated, whereas 777.7 square yards were treated in 1931.

SAND, SOIL, EARTH, PEAT, COMPOST AND MANURE

NUMBER OF CARLOADS OF EACH CLASS OF SAND, SOIL, PEAT, ETC., CERTIFIED EACH MONTH AND TOTALS, 1931*

Month	Construction	Molding	Marl	Clay	Soil	Sand	Peat	Totals
January	83	91	6	22	..	4	..	206
February	72	90	5	21	..	1	1	190
March	84	116	4	24	..	1	..	229
April	86	133	10	32	..	2	1	264
May	106	166	10	115	..	5	1	403
June	117	195	12	93	..	4	..	421
July	58	119	10	114	..	5	1	307
August	36	83	7	113	..	11	5	255
September	48	114	9	73	..	12	5	261
October	112	243	7	101	..	7	..	470
November	52	192	5	33	11	5	..	298
December	48	74	7	11	..	6	2	148
Totals	902	1,616	92	752	11	63	16	3,452

*Totals of 3,341 cars of sand, etc., and 10 cars of peat were reported in monthly reports. However, 7,614,254 pounds of sand were shipped in small lots, as were 190,534 pounds of peat. By considering that there are 80,000 pounds of sand to a carload, and 30,000 pounds of peat to a carload, it was calculated that there were an additional 95 cars of sand, making a grand total of 3,436 cars of sand and 6 additional cars of peat, making a total of 16 cars of peat.

NUMBER OF CARLOADS OF MANURE CERTIFIED FOR SHIPMENT TO VARIOUS STATES*

State	Carloads
Connecticut	12
Massachusetts	11
Maryland	18
Maine	2
Michigan	1
North Carolina	1
New York	23
Pennsylvania	8
Rhode Island	5
Virginia	5
Total	86 carloads

*According to monthly reports, a total of 77 cars of manure were certified. In addition to this, a total of 373,407 pounds were certified. The total of 86 carloads was arrived at by considering that there are 40,000 pounds to the carload.

TOTAL MEN EMPLOYED AT ALL OFFICES

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct	Nov.	Dec.
Scouting	..	..	..	..	..	..	32	20	..	..	..	..
Farm Products	..	..	..	..	..	11	27	19	6	..	..	..
Nursery and Greenhouse	28	28	37	42	40	39	68	57	46	46	43	40
Maintenance	1	1	1	2	2	4	8	8	8	6	5	4
Totals	29	29	38	44	42	54	135	104	60	52	48	44