

STATE OF NEW JERSEY
DEPARTMENT OF AGRICULTURE

W. H. ALLEN, *Secretary*



Thirty-eighth Annual Report
OF THE
New Jersey
State Department of Agriculture

July 1, 1952—June 30, 1953

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Trenton, N. J., June 30, 1953

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Messrs. Dobbs and Chamberlin will retire from the Board on June 30, 1953. The new members will be Charles E. Maier of Pine Brook and Lloyd W. Yeagle of Elmer.

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STATE OF NEW JERSEY
DEPARTMENT OF AGRICULTURE
W. H. ALLEN, *Secretary*
TRENTON

June 30, 1953

*To His Excellency, the Governor, and Members of 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 Thirty-eighth Annual Report of the New Jersey Department of Agriculture,
for the fiscal year ended June 30, 1953.

Respectfully yours,

W. H. Allen

THIRTY-EIGHTH ANNUAL REPORT OF THE NEW JERSEY STATE DEPARTMENT OF AGRICULTURE

The Year In Review

Following a record crop year in 1951 when the gross value of New Jersey agricultural products rose to an all time high of \$395,700,000, the value of 1952 products declined slightly (about 1 per cent) and was estimated at \$391,500,000. Actually, more components of the agricultural industry made advances in varying degrees over the previous year but substantial declines in the value of eggs and vegetables were largely responsible for the downward shift. Eggs and vegetables collectively accounted for 43 cents of each dollar of value of farm products.

The greatest change occurred in the value of white potatoes which in the 1952 season had a farm value nearly 40 per cent above that of 1951. Relatively low yields per acre resulted in a short crop in 1952—so short that the price per bushel was more than double that of the previous year. Also, the 1952 acreage was 7 per cent below that of the previous year, thus continuing the constant decline that has occurred since the war and early postwar years. The 1952 acreage was less than half the 10-year average for 1941-50.

The farm value of agricultural products in 1952 by general commodity groups was: eggs, \$111,800,000; milk, \$69,800,000; vegetables, \$57,000,000; poultry, \$33,800,000; nursery and greenhouse, \$27,000,000; grains, \$26,700,000; meat animals, \$21,000,000; hay, \$15,100,000; white potatoes, \$11,100,000; tree fruits, \$9,400,000; berries, \$7,700,000; miscellaneous, \$1,100,000.

THE WORK OF THE DEPARTMENT

Both regulatory and promotional work have comprised the activities of the Department of Agriculture for a number of years. In its regulatory work the Department has continued the enforcement of laws enacted by the Legislature concerned mainly with the control and eradication of diseases of livestock and with diseases and insects affecting plant life. Other important regulatory measures concerned dealers of milk, produce and cattle, and the sale of eggs. Promotion activities largely centered around specialized marketing projects involving market news, standardization and informational service.

These two broad phases have covered a wide variety of service beneficial directly to producers and indirectly in many phases to the general public.

The outbreak of vesicular exanthema in swine shipped to and maintained in garbage-feeding establishments posed the Department's most serious animal disease problem and necessitated stringent quarantine measures by the Department and the Federal Government. The main areas of infection were Hudson and Gloucester counties where there has been a concentration of garbage-feeding establishments for many years. The close similarity of the disease to foot and mouth disease in cattle has necessitated the most vigilant attention to outbreaks in order to prevent the appearance of the latter disease in cattle, if there is any relationship between the two. Such an outbreak would be disastrous to the dairy industry in this State.

The continuance of regular periodic testing of cattle for tuberculosis has resulted in the lowest incidence of the disease on record. Only 176 reactors were disclosed during the entire year, or about one in every 1,360 animals. This is six or seven times better than the standard required by the Federal Government for accreditation as the State has been so classed for a number of years. The total indemnities paid to farmers whose animals reacted to the test and which were subsequently slaughtered was less than \$11,000, about two-thirds of that of the previous year.

Farmers' interest in the Department's brucellosis eradication work was stimulated by an announcement by the Department of Health of a regulation requiring all milk sold in New Jersey after April 1, 1958 to be from brucellosis free herds. Elimination of reactors on testing and the buildup of resistance through calfhood vaccination have made major contributions to the advancement of this work.

Marketing activities continued to be one of the major programs. Attention has been devoted to milk, eggs, poultry and a wide variety of fruits and vegetables, principally through the use of official grades. Shipping point inspections of fruits and vegetables aided materially in efficient marketing. Determination of grade on fresh products delivered for processing, chiefly asparagus and tomatoes, resulted in superior products because of the premium incentive for quality. Approximately 50 million pounds of asparagus delivered to processors were graded during the 1953 season and more than 125,000 tons of tomatoes in the 1952 season when weather conditions were decidedly adverse. This tonnage of tomatoes was about 15 per cent below the 10-year average.

Farmer-owned auctions continued to serve New Jersey producers as a highly efficient and economical method of marketing. During 1952 over 3.5

million packages of fruits and vegetables were moved at each market, for a gross return of around \$8 million. Nearly 40 million dozens of eggs in case lots and upwards of 6 million pounds of live poultry were sold at six egg and poultry auction markets in the State. Gross sales for these two commodities amounted to \$23 million.

Attention to plant pests and diseases covered a variety of activities including nursery inspection, red stele disease of strawberry plants, blueberry stunt, raspberry plant certification, Japanese beetle quarantine enforcement, bee diseases, Gipsy moth scouting, alfalfa weevil, golden nematode (the last two relatively new in New Jersey), canker stain disease of plane trees, Dutch elm disease control, white pine weevil and others.

The Department's seed certification work has become more valuable with each passing year. Certified seed has proved to be an important fundamental in good farm management and more growers are recognizing its value for higher germination, trueness to type, freedom from diseases and increased yields. The total volume of certified grain seed, principally wheat and corn, has nearly tripled in the past five years but still does not meet the constantly growing demand. Other important seed certification is carried out on tomatoes and to a limited extent on white potatoes.

ACKNOWLEDGEMENT

This is but a brief summary of activities and accomplishments of the Department of Agriculture during the fiscal year 1952-53, details of which will be found in specific sections of the report to follow. The gratifying results of the year's work have been achieved by the diligence and devotion to duty of all the staff members who have carried the responsibility of their assignments. An expression of real appreciation is extended to all members of the staff.

LICENSING AND BONDING

The State Department of Agriculture is entrusted with the enforcement of Article I, Chapter 12, Title 4 of the Revised Statutes (1937), more commonly known as the Milk Dealers' Licensing and Bonding Act; and Article 1, Chapter 11, Title 4, the Cattle Dealers' Licensing Act.

MILK DEALERS' LICENSING AND BONDING ACT

During 1952-53 bonds totaling \$4,517,000 were filed with the Department by 198 dealers. This is an increase in the amount of bonds but a decrease in the number of dealers, continuing a trend that began in 1946. Claims and complaints this year totaled \$28,523.74.

Effective October 1, the Office of Milk Industry raised the farmer-to-dealer price for Class I (fluid) milk to \$6.07 per hundredweight. That price remained until May 1 when it was dropped to \$5.27.

MILK DEALERS LICENSED AND BONDED
July 1, 1952 to June 30, 1953

County	Licenses Issued	Bonds Filed	Amount of Bonds	
Atlantic	5	5	\$98,000.00	
Bergen	6	6	128,000.00	
Burlington	10	11	226,000.00	
Camden	9	9	137,000.00	
Cape May	3	3	5,000.00	
Cumberland	11	11	135,000.00	
Essex	11	11	455,000.00	
Gloucester	10	10	97,000.00	
Hunterdon	9	9	280,000.00	
Mercer	17	17	314,000.00	
Middlesex	11	11	343,000.00	
Monmouth	20	20	249,000.00	
Morris	22	22	356,000.00	
Ocean	3	4	68,000.00	
Passaic	11	11	405,000.00	
Salem	5	5	50,000.00	
Somerset	12	12	243,000.00	
Sussex	1	1	100,000.00	
Union	7	7	148,000.00	
Warren	4	4	39,000.00	
Out-of-State	11	11	641,000.00	
Totals	1952-53	198	200	\$4,517,000.00
	1951-52	210	210	4,276,000.00
	1950-51	214	214	4,136,000.00
	1949-50	214	214	4,066,200.00
	1948-49	235	235	4,071,000.00

PRODUCE DEALERS' LICENSING AND BONDING ACT

Although OPS ceiling prices on fresh fruits and vegetables were removed after the 1952-53 licensing year began, the expected increase in persons en-

THIRTY-EIGHTH ANNUAL REPORT

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tering this business was not realized. Also, a number of those already in the business found other work more profitable. Seventeen fewer licenses were issued this year, 366 dealers filing bonds that totaled \$1,098,000.

Claims and complaints during 1952-53 amounted to \$9,021.09. One complaint was filed by the Cooperative Growers' Association, Inc. in Beverly against a licensee who failed to pay for a load of sweet corn. At a hearing on November 13 the dealers' attorney said the case was an interstate matter and that the Department therefore had no jurisdiction. He asked permission to have the case settled by Federal authorities. The Washington office would not hear the case so it was returned to the Department for settlement.

A bill which would amend the Produce Dealers' Licensing and Bonding Act to include live poultry and egg dealers was introduced in the State Assembly, although a similar bill was defeated in the 1952 Legislature. The bill passed and will become effective January 1, 1954.

PRODUCE DEALERS LICENSED AND BONDED

May 1, 1952 to April 30, 1953

County	Licenses Issued	Bonds Filed	Amount of Bonds
Atlantic	46	46	\$138,000.00
Bergen	1	1	3,000.00
Burlington	2	2	6,000.00
Camden	7	7	21,000.00
Cumberland	50	50	150,000.00
Essex	36	36	108,000.00
Gloucester	34	34	102,000.00
Hunterdon	1	1	3,000.00
Mercer	16	16	48,000.00
Middlesex	9	9	27,000.00
Monmouth	25	25	75,000.00
Morris	1	1	3,000.00
Passaic	5	5	15,000.00
Salem	8	8	24,000.00
Somerset	2	2	6,000.00
Union	2	2	6,000.00
Warren	5	5	15,000.00
Out-of-State	116	116	348,000.00
Totals	1952-53 366	366	\$1,098,000.00
	1951-52 383	383	1,149,000.00
	1950-51 396	396	1,191,000.00
	1949-50 401	401	1,202,000.00
	1948-49 418	418	1,261,000.00

CATTLE DEALERS' LICENSING ACT

During 1952-53 the Department issued licenses to 213 dealers, 11 fewer than the previous year.

Prices of dairy animals remained high during the first half of this

licensing year, but the prices of beef animals dropped so much that some licensees of previous years found it unprofitable to handle beef animals. They also hesitated to invest in dairy animals fearing a similar price decline. Their fears were justified when, before the end of this year, there was an average decline of about \$85 per head for dairy cows.

CATTLE DEALERS LICENSED		
July 1, 1952 to June 30, 1953		
County		Licenses Issued
Bergen		1
Burlington		19
Camden		5
Cape May		1
Cumberland		15
Essex		8
Gloucester		4
Hunterdon		19
Mercer		10
Middlesex		3
Monmouth		15
Morris		14
Ocean		6
Passaic		6
Salem		20
Somerset		14
Sussex		22
Union		7
Warren		19
Out-of-State		5
Totals		—
	1952-53	213
	1951-52	224
	1950-51	229
	1949-50	218
	1948-49	219

THE NEW JERSEY JUNIOR BREEDERS' FUND

During the fiscal year 1952-53 the New Jersey Junior Breeders' Fund made 169 loans totaling \$19,858.35. This is an increase of 20 per cent over the previous year and places 1952-53 as the third highest year on record for amounts loaned. The top year was 1948-49 with \$23,529.10 and the second was 1949-50 with \$20,764.17 loaned.

Operations for the past year resulted in a net loss of \$376.03. The reserve for bad debts is \$693.94 which is only 81.8 per cent of the total now delinquent. However, it is expected that most of the delinquent accounts will be paid.

Awards totaling \$660 were made at the Flemington Fair, Cumberland Fair, Sussex Farm and Horse Show, the Baby Beef Show and during Farmers Week. Since this was the last year for presenting awards at the Sussex Show a reduction in award money for the coming year is anticipated, thus reducing operating expenses.

With the increase in loan activity there is added difficulty with delinquent borrowers. On June 30 there were 13 delinquent accounts totaling \$847.78 or 3.22 per cent of all outstanding loans. Except for loans totaling \$181.22 to one Burlington County boy, the accounts should be cleared eventually.

Eight charges totaling \$1,125 were made again the Calf Emergency Fund while only \$888.85 was actually received from dairy borrowers. Since 65 per cent of the total loaned last year was for the purchase of dairy animals, dairy calf emergency charges present a problem. Emergency fees now charged dairy borrowers yield 6.3 per cent of the total loaned for dairy purchases while emergency charges for animal mortality from 1946-50 averaged 7.6 per cent of the total loaned, an annual loss of 1.3 per cent for the Emergency Fund. It seems imperative to either be more selective in approving loans or to increase the emergency fees; or possibly to do both.

STATE DEPARTMENT OF AGRICULTURE

TOTAL AMOUNT LOANED BY COUNTIES

	Loaned 1952-53	Total Loans Since 1921
Atlantic	\$ 661.00	\$ 3,585.87
Bergen	----	75.00
Burlington	552.00	17,300.91
Camden	----	676.15
Cape May	----	3,027.43
Cumberland	525.00	9,046.63
Essex	----	805.30
Gloucester	1,300.00	7,699.30
Hudson	----	----
Hunterdon	1,750.00	22,013.21
Mercer	1,140.00	29,920.95
Middlesex	1,875.00	35,078.59
Monmouth	2,555.00	23,843.65
Morris	235.00	7,009.00
Ocean	520.00	3,476.00
Passaic	----	716.25
Salem	500.00	29,430.44
Somerset	1,900.00	17,994.20
Sussex	4,240.35	44,135.42
Union	----	----
Warren	2,105.00	24,739.58
TOTAL	<u>\$19,858.35</u>	<u>\$280,573.88</u>

LIVESTOCK LOANS MADE ANNUALLY SINCE ESTABLISHMENT OF JUNIOR BREEDERS' FUND

Fiscal Year	Dairy Loans		Beef Cattle		Pig Loans		Poultry Loans		Lamb Loans		Total Livestock Loans	
	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount
1920-21	30	\$ 2,815.00	---	---	---	---	---	---	---	---	30	\$ 2,815.00
1921-22	92	7,985.00	---	---	16	\$ 1,074.98	16	\$ 824.25	---	---	124	9,884.23
1922-23	81	6,365.00	---	---	21	1,267.25	13	636.25	---	---	115	8,268.50
1923-24	96	8,670.00	---	---	10	409.50	14	932.00	---	---	120	10,011.50
1924-25	81	7,065.00	---	---	26	1,320.00	17	1,183.50	---	---	124	9,568.50
1925-26	71	6,639.50	---	---	25	1,684.30	32	1,563.10	---	---	128	9,886.90
1926-27	83	7,444.00	---	---	19	1,240.00	28	1,112.50	---	---	130	9,796.50
1927-28	54	4,644.00	---	---	10	620.00	31	890.70	---	---	95	6,154.70
1928-29	55	4,960.00	---	---	13	805.00	15	680.65	---	---	83	6,445.65
1929-30	37	3,317.50	---	---	15	876.00	17	692.20	---	---	69	4,885.70
1930-31	38	3,467.50	---	---	12	769.00	7	308.00	---	---	57	4,544.50
1931-32	38	2,875.00	---	---	8	415.00	9	394.00	---	---	55	3,684.00
1932-33	24	1,820.00	---	---	10	426.75	8	323.00	---	---	42	2,569.75
1933-34	30	2,310.00	---	---	9	295.00	24	940.43	---	---	63	3,545.43
1934-35	46	4,169.00	---	---	3	110.00	23	1,174.49	---	---	72	5,453.49
1935-36	26	2,050.00	---	---	5	297.00	18	797.85	---	---	49	3,144.85
1936-37	32	2,905.00	---	---	14	941.00	21	894.40	---	---	67	4,740.40
1937-38	43	4,366.00	---	---	8	492.50	31	1,644.82	---	---	82	6,503.32
1938-39	45	3,740.00	21	\$ 1,050.00	28	1,377.00	32	1,399.24	---	---	126	7,566.24
1939-40	36	3,680.00	35	2,012.20	9	303.00	49	2,213.92	---	---	129	8,209.12
1940-41	34	2,503.50	40	2,309.10	3	110.00	34	1,321.10	---	---	111	6,243.70
1941-42	40	3,127.00	43	2,754.48	10	295.50	24	888.88	---	---	117	7,065.86
1942-43	24	2,095.00	39	2,654.85	1	50.00	7	377.20	---	---	71	5,177.05
1943-44	21	2,055.00	32	2,348.77	2	95.00	1	36.25	---	---	56	4,535.02
1944-45	13	1,305.00	35	2,384.68	---	---	---	---	---	---	48	3,689.68
1945-46	13	1,160.00	17	1,675.19	---	---	---	---	14	\$375.28	44	3,210.47
1946-47	36	3,930.00	30	3,040.20	---	---	---	---	---	---	66	6,970.20
1947-48	79	9,755.00	28	3,846.40	1	45.00	---	---	---	---	108	13,646.40
1948-49	151	19,570.00	33	3,746.10	1	50.00	1	13.00	---	---	186	23,379.10
1949-50	112	14,092.50	56	5,929.15	5	225.00	2	180.00	---	---	175	20,426.65
1950-51	97	11,539.00	55	6,004.97	---	---	4	166.00	---	---	156	17,709.97
1951-52	95	12,595.00	33	3,325.00	---	---	3	293.75	1	25.00	132	16,238.75
1952-53	102	14,092.50	45	4,203.00	4	275.00	2	190.00	6	350.00	159	19,110.50
Totals	1,855	\$189,107.00	542	\$47,284.09	288	\$15,868.78	483	\$22,071.48	21	\$750.28	3,189	\$275,081.63

AGRICULTURAL LOANS MADE ANNUALLY SINCE ESTABLISHMENT OF JUNIOR BREEDERS' FUND*

	Feed Loans		Crossbred Lamb		Crossbred Poultry		Agricultural Prod. Loans		Fat Barrow Loans		Miscellaneous		Total Agricultural Loans	
	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount
1934-35	3	\$ 38.38	---	---	---	---	---	---	---	---	---	---	3	\$ 38.38
1935-36	---	---	---	---	---	---	---	---	---	---	---	---	---	---
1936-37	6	63.70	---	---	---	---	---	---	---	---	---	---	6	63.70
1937-38	14	276.24	---	---	---	---	---	---	---	---	---	---	14	276.24
1938-39	27	451.04	---	---	---	---	9	\$128.43	---	---	---	---	36	579.47
1939-40	43	728.45	---	---	---	---	7	199.08	---	---	1	\$ 8.02	51	935.55
1940-41	29	506.63	---	---	---	---	6	240.26	---	---	---	---	35	746.89
1941-42	2	160.70	---	---	---	---	3	104.85	---	---	---	---	5	265.55
1942-43	---	---	---	---	2	\$ 72.50	---	---	---	---	---	---	2	72.50
1943-44	---	---	---	---	1	100.00	---	---	---	---	---	---	1	100.00
1944-45	1	21.45	---	---	1	48.00	---	---	---	---	---	---	2	69.45
1945-46	1	27.65	---	---	---	---	---	---	---	---	---	---	1	27.65
1946-47	---	---	---	---	---	---	---	---	3	\$134.00	---	---	3	134.00
1947-48	---	---	---	---	1	25.00	---	---	10	388.00	---	---	11	413.00
1948-49	3	75.00	---	---	---	---	---	---	1	75.00	---	---	4	150.00
1949-50	8	309.63	---	---	---	---	1	9.89	1	18.00	---	---	10	337.52
1950-51	3	68.00	---	---	---	---	1	43.10	---	---	---	---	4	111.10
1951-52	4	296.40	---	---	2	127.00	---	---	---	---	---	---	6	423.40
1952-53	5	207.85	4	\$520.00	1	20.00	---	---	---	---	---	---	10	747.85
	149	\$3,231.12	4	\$520.00	8	\$392.50	27	\$725.61	15	\$615.00	1	\$ 8.02	204	\$5,492.25

*The number of agricultural loans shown represents actual loans made, rather than number of borrowers. In most cases more than one loan was made to a single borrower.

Report of Division of Information

FRED W. JACKSON, *Director*

During the past fiscal year activities of the Division of Information have been directed principally toward (1) bringing to the attention of farmers and farm agencies the services and regulatory functions of the State Department of Agriculture; (2) cultivating and maintaining contacts with distributor, trade and consumer groups concerned with the sale and distribution of New Jersey farm products; (3) general public relations aimed at developing and maintaining among New Jersey's urban and suburban population an appreciation and favorable recognition for agriculture; (4) advance, current and follow-up publicity and arrangements concerned with the annual Farmers Week; and (5) editorial work related to servicing Department of Agriculture publications.

In pursuing the foregoing objectives the Division of Information has continued to place all of its facilities at the service of the press, radio, editors of magazines and house organs, speakers and others in order to secure recognition for New Jersey and New Jersey agriculture. Such activities include almost daily contacts with interested individuals or organizations throughout the year. The response to these efforts is best measured in the increasing number of requests received by the Division of Information each year for data and statistics on a local or county basis, regulations, biographies, photographs and reports and general information.

Another noticeable trend during the past year is the increased attention which a number of daily and weekly publications are devoting to agriculture, largely in the development of new and regular farm pages or special farm editions. These, no doubt, reflect an appreciation on the part of their readers of the importance of agriculture and the allied interests which service the farmers. This trend has been especially true in the areas where the poultry industry has expanded rapidly in recent years and where three publications have inaugurated farm pages or sections. All of the newspapers and radio stations covering those areas are giving an increasing amount of space and attention to agricultural news, personalities and subject matter.

Acknowledgment should be made of the excellent cooperation which has been extended by the editors and members of the staffs of the New Jersey dailies and weeklies. Without their sustained interest, the Division would be able to reach only a fraction of the farmers and leaders in allied industries as well as the general public. Likewise, the radio stations through their news and special farm broadcasts have extended their cooperation. Such re-

lationships developed through many years of contacts are of very real value to the Department as well as to those engaged in agriculture. However, to maintain those relationships requires alertness to the needs of each publication and constant effort to render every possible service.

EDITORIAL ACTIVITIES

News Releases

During the past fiscal year a total of 255 news releases were prepared and issued by the Division of Information to approximately 200 newspapers, radio stations and correspondents serving the New York City-Philadelphia-New Jersey area. These releases, with only a few exceptions, are prepared so as to permit mailing four or five days in advance. Although no clipping service is available, a regular inspection of 10 to 12 weeklies and four or five dailies indicates that the releases are being used consistently, particularly in the agricultural counties.

As usual, an effort is made to recognize and publicize the important phases of the functions and regulations of the Department of Agriculture. However, it is obvious from the following listing that announcements and releases concerning the Office of Milk Industry, the Division of Markets and Farmers Week account for the greater number, due largely to the subject matter and the current interest in food on the part of the public. Classified according to subject matter and the divisions concerned, the releases issued last year included:

Administration	14
Division of Animal Industry	11
Division of Information	
Farmers Week	
Advance	15
Current	46
Other	35
Division of Market	
Truck Crop News	24
Other	18
Division of Plant Industry	42
Office of Milk Industry	13
Office of Milk Industry	57
Miscellaneous	22
Total	255

The following tabulation shows a comparison of the number of releases issued during the past three fiscal years:

	1952-53	1951-52	1950-51
Administration	14	13	13
Division of Animal Industry	11	22	12
Division of Information	96	100	102
Division of Markets	42	47	48
Division of Plant Industry	13	13	21
Office of Milk Industry	57	20	21
Miscellaneous	22	24	32
Totals	255	239	249

Special Reports

One of the most difficult problems which has faced this office during recent years has been that of getting into circulation authentic data concerning the controversial milk price situation. New Jersey producers for years have enjoyed a higher percentage of Class I milk returns than prevail in neighboring states. For the second year these figures have been compiled by the Office of Milk Industry on the basis of statewide and weighted averages and have been released to the press through this office. Representatives of one of the producer organizations continue to insist that the figures are not typical.

The reports were continued during the past year although it was difficult to keep them up-to-date.

Photographs

Each year there is an increase in demand for photographs as editors devote more space to pictorial copy. The lack of sufficient funds has made impossible the servicing of all these requests, particularly those seeking subjects for illustrations in color for both newspapers and magazines. During the past year about 300 glossy prints and seven sets of mats were distributed. To meet the needs of those papers which are using the Fairchild reproduction process, the photographs have been furnished them in special size.

Farm Magazines

Acknowledgment should be made of the continued cooperation of the editors and staff of *New Jersey Farm and Garden* throughout the entire year and, in particular, for the special issue published each January to promote the annual Farmers Week meetings. The editorial page of *New Jersey Farm and Garden* is made available to the Secretary of Agriculture in each issue for an editorial, thus providing an excellent means for reaching the 25,000 readers, an almost complete cross section of New Jersey agriculture. A review of 1,500 to 2,000 words on current farm topics also is prepared each month by the Division of Information for the same publication. Similar cooperation has been extended by the *Pennsylvania Farmer*, *American Agriculturist* and *Rural New Yorker*, as well as the editors of news letters and house organs issued by farm commodity groups.

DEPARTMENT PUBLICATIONS AND CIRCULARS

Publications and circulars prepared by members of the Department staff are edited, prepared for printing and serviced for proof reading by the

Division of Information. Last year most of the publications were routine reports. They included:

- Circular No. 386—Laws, Rules and Regulations Governing the Shipment of Nursery Stock Out of New Jersey.
- Circular No. 388—Licensed Dealers Under the Milk Dealers' Licensing and Bonding Act, Produce Dealers' Licensing and Bonding Act and Cattle Dealers' Licensing Act.
- Circular No. 389—Facts and Figures—Annual Potato Summary—Crop of 1952.
- Folder—For Your Drinking Milk, Ask for New Jersey Grade A or B.
- Leaflet—Brucellosis Control Program.
- Report—Thirty-sixth Annual Report of the New Jersey State Department of Agriculture—July 1, 1950-June 30, 1951.
- Binding—12 issues of *New Jersey Farm and Garden*, for calendar year 1952.
- Binding—New Jersey State Department of Agriculture Circulars Nos. 372-382.
- Farm Service News*—Six issues—July, September, November 1952; January, March, May 1953.

As of June 30, 1953, the following have been edited but delivery has not been completed by the printer:

- Report—Thirty-seventh Annual Report of the New Jersey State Department of Agriculture—July 1, 1951-June 30, 1952.
- Circular No. 378—New Jersey—The Garden State. Manuscript has not been submitted to the printer.

Other publications edited and issued prior to or during the 1953 Farmers Week are as follows:

- 1953 Farmers Week Program
- Flyers—Vocational Agriculture Rally
 - Livestock and Crops
 - American Cranberry Growers
 - Blueberry Farmers
- Women's Program—1953 Farmers Week
- Highlights of Your Convention
- Citations for Distinguished Service to New Jersey Agriculture, 1953

Farm Service News was continued with issues in July, September and November 1951 and January, March and May 1952. This publication serves as a direct medium for reaching about 20,000 farm and rural readers within the State. As usual the March issue was devoted exclusively to the annual listing of the hatcheries and breeders whose baby chicks and breeding stock have qualified under the NJ-US Poultry Improvement program, thus eliminating the cost of publishing such a listing in a separate circular.

FARMERS WEEK PUBLICITY

One of the major activities of the Division of Information during October, November, December and January is concerned with the arrangements

and the advance and current publicity related to Farmers Week. Extended now to include seven days of meetings, Farmers Week has become the major event of New Jersey agriculture in which over 40 farm and commodity groups participate. Attendance has grown each year. Acknowledgment is made of the excellent cooperation of *New Jersey Farm and Garden* as well as of other press and radio editors who render effective aid in promoting Farmer's Week. Each year the editorial staff of the Agricultural Extension Work of Rutgers University, a number of farm publications and most of the radio farm editors render valuable assistance in handling the publicity during Farmers Week.

FARM PRODUCTS PROMOTION

During the past fiscal year the agricultural activities of the former New Jersey Council now organized as the State Promotion Section, a unit of the Department of Conservation and Economic Development, again were serviced on a cooperative basis through the Division of Information. The Division served in a liaison capacity with the participating agricultural commodity groups. This arrangement, in effect since 1938, has proved to be satisfactory to the State agencies concerned as well as to the cooperating farm organizations.

The allotment for agriculture was divided among seven projects. The allotments were supplemented by funds furnished by each of the cooperating commodity groups. However, the activities of each necessarily were curtailed because of the limited funds available.

As during the previous year, an effort was made to compensate for the lack of advertising space by making the most of every opportunity to provide editors, particularly food editors, with copy and photographs for use in reader column space. Considerable success was achieved in enlisting the cooperation of other agencies, the trade and the utilities by getting them to mention New Jersey products in their advertisements and releases and to use them as much as possible in their demonstrations.

Acknowledgment again should be made of the cooperation of the members of the home economics staffs of all four of the principal utilities. These include about 40 home economic specialists who are responsible for a large number of meetings and demonstrations on food subjects scheduled throughout the year. Consequently, there are many opportunities when New Jersey farm products can be featured or included in recipes, thus presenting them directly to thousands of food-minded housewives. Two of the utilities again prepared at their own expense consumer leaflets on New Jersey products. One utility concern continued the sponsorship of a series of general

institutional advertisements emphasizing the availability of local products and illustrated with photographs made on New Jersey farms. The same utility prepared and distributed 70,000 copies of an attractive booklet under the title of "The Riches of New Jersey" which described the fruits and vegetables available from New Jersey farms and how to select and buy them. This concern also advertised the booklets extensively in order to secure greater circulation.

Brief outlines of the projects carried on cooperatively with the farm commodity groups during the 1951-52 year follow.

Cooperative Marketing Associations in New Jersey, Inc.

A considerable volume of New Jersey grown fruits and vegetables is marketed through the 10 cooperative produce auction markets which are organized in a statewide cooperative. This organization sponsored a series of advertisements which appeared in *The New York Packer* and *The Produce News*, the two principal publications circulating among the produce trade. There were two insertions in each of these publications, running in August 1952 and five insertions each running in April, May and June 1953. The layout included a map of New Jersey showing the locations of the produce auction markets and the copy included a list of crops currently in season which was revised for each insertion. During the 1952 season a total of over 1,100 different buyers from 13 states and Canada purchased New Jersey products at the auctions. The auctions furnish an outlet for a considerable volume of New Jersey produce. They also establish a price level for many other transactions and so are beneficial in maintaining food markets.

Blueberry Cooperative Association

This group, which marketed a large crop of cultivated blueberries under the *Tru-Blu* label, operates through a well planned sales program. The value of the State's cultivated blueberry crop now exceeds that of cranberries or any other small fruit. The association also carries on a consistent advertising and publicity program toward which a small allotment of State funds met the cost of the locations and space for posters on the platforms of the New York Subway, the Hudson and Manhattan Railroad and at the stations and terminals of several commuter railroads.

New Jersey Field Crop Improvement Cooperative Association

This organization produces and sells certified field crop seeds which are of special importance to New Jersey dairymen and poultrymen who produce homegrown feeds. The New Jersey hybrid varieties of corn have been featured in the series of cooperative advertisements with some mention of State-certified soybeans, wheat, oats and barley in season. The advertisements

now on a full year basis again were carried in 10 issues of *New Jersey Farm and Garden* and nine issues of *The Moos*.

New Jersey Peach Industry Committee

This Statewide organization continued last year with its promotional activities to call attention to the new varieties of New Jersey peaches now available. As usual the campaign was conducted with the cooperation of food editors, radio commentators, representatives of the wholesale and retail trade and others concerned with the promotion of food products. A review of the season's prospects was prepared and gift boxes of peaches and cultivated blueberries were distributed and there was an excellent response in terms of newspaper reader column space, editorial mention and radio time.

New Jersey Apple Institute

The New Jersey growers experienced little serious difficulty in moving the main season varieties of apples, so most of the promotional effort was concentrated again on the summer varieties. Consequently, a series of releases, photographs and recipes was issued illustrating how the Starr and Twenty Ounce varieties could be used by consumers. In addition a woman publicity agent in New York City was retained on a cooperative and part-time basis to handle relations with the food page editors of newspapers and magazines, radio food editors and the utilities' representatives. Gift packages of Stayman apples were sent to the editors in December and repeated with Rome Beautys in March. A conference and visits to two orchards and dinner were scheduled at the Carlough Orchard in Bergen County with about 60 food editors and guests attending, most of them making the trip in a special bus. As usual the response in terms of publicity throughout the winter has been excellent and aided materially in moving the crop. A series of announcements scheduled on the Alfred McCann Food Hour on WOR again proved very effective in moving late holdings of Rome Beauty.

PUBLIC RELATIONS

As in previous years the Division of Information has continued efforts to further understanding and good will between the farm and non-agricultural interests which dominate the life and economy of New Jersey. Such activities are conducted in a number of fields, many at the request of interested groups.

The director continues to serve as secretary of the Farm Electrification Council of New Jersey, a program which originated in the Department of Agriculture in 1928. The Council has sponsored an active educational program during the past year devoted to more efficient use of electricity on New Jersey farms now that the project of extending electrical service to near-

ly every farm is practically completed. Monthly mailings of articles on types and uses of electrical equipment have been prepared for extension workers and teachers of vocational agriculture. A similar service has been developed for home economics workers to promote the more efficient use of electricity in farm homes. A conference and forum attended by the instructors in vocational agriculture launched a new program on the use of electricity in meeting the farm labor shortage.

Another similar assignment for the director is that of serving as secretary of the Committee on Agriculture of the New Jersey State Chamber of Commerce. That activity consists largely of arranging for and conducting the farm-industrial tours scheduled by the Committee. These tours have been held annually since 1938 and have helped to develop excellent relations between business and agriculture in New Jersey. The 1592 tour held in August visited three farms in Monmouth County and again set a new record of attendance.

Other activities have included the preparation of special articles, most of them with photographs, for the *Newark Sunday News*, *Washington Star*, *New York Times*, Associated Press, the *Dairymen's League News*, *American Agriculturist*, *New Jersey Counties*, *Bridgeton Evening News*, *Philadelphia Bulletin* and *Asbury Park Press*. Cooperation has been extended frequently to feature writers and regularly to members of the Associated Press staff in preparing special articles on agriculture.

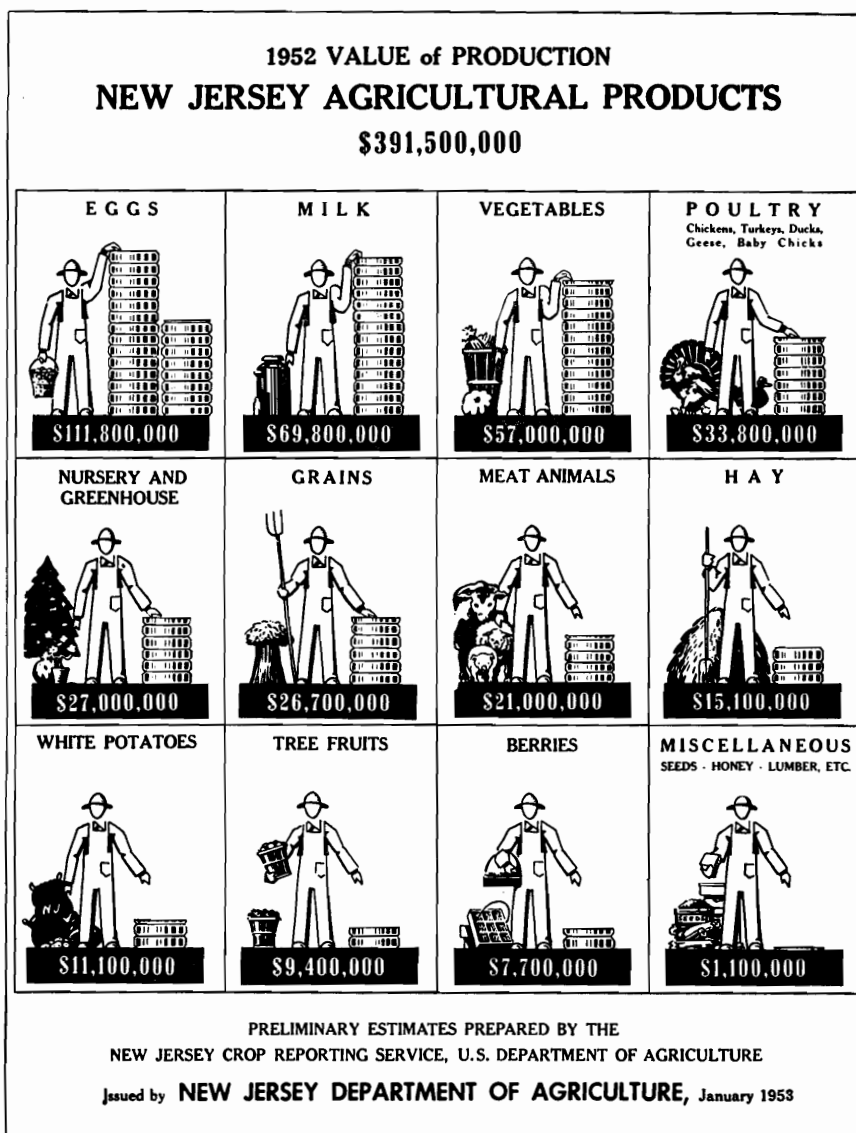
In response to a request from an overall dairy industry group, a publicity program was prepared and carried through for the former New Jersey June Dairy Month Committee which is now organized as the Garden State Milk Council. To further advance the interests of the industry the new organization will serve on a year-round basis.

Further cooperation was extended to the officers of the New Jersey Aberdeen Angus Association to aid that group in publicizing the organization and promoting the breed in New Jersey. A general program was prepared which is being followed by the association pending the employment of a field secretary.

Exhibits and samples of New Jersey farm products were furnished for the 1952 session of the Northeastern Institute at Yale University and the New Jersey Home Economics Association and the New Jersey State Hotel Association, both in Atlantic City.

The New Jersey office of the Bureau of Agricultural Economics of the U. S. Department of Agriculture has been very cooperative in furnishing considerable statistical data on New Jersey agriculture which has been used extensively as subject matter for news releases and to answer inquiries. One

of such releases is the annual chart showing the value of agricultural products classified according to commodity groups.



Other activities included publicity projects associated with the New Jersey Vegetable Queen, New Jersey Agricultural Society, New Jersey Canners Association, New Jersey 4-H Baby Beef Show and Sale and the New Jersey Veterinary Medical Society.

Report of the Division of Animal Industry

DR. R. A. HENDERSHOTT, *Director*

REVIEW OF THE YEAR'S ACTIVITIES

VESICULAR EXANTHEMA

On June 29, 1952, a shipment of 210 head of feeder swine consigned to Charles Schoch was received from the King Pig Company. The swine had been shipped from Fremont, Nebraska, and were unloaded at the Jersey Feed Farms in Secaucus. The same day Dr. J. R. Porteus, Federal inspector in charge, was notified by Dr. S. O. Fladness, assistant chief of the U. S. Bureau of Animal Industry, that the shipment had reached its destination. Dr. Porteus was asked to check on the shipment because Dr. Fladness suspected the investigation would disclose lesions of vesicular exanthema as the disease had been reported at point of origin of the swine.

Inspection of the shipment on June 30 revealed vesicular disease and the premises were placed under quarantine. Action was also taken to obtain two horses, two cows and two swine from distant farms for test purposes. The test was started July 1. Meanwhile arrangements were made to dispose of infected and exposed animals for tankage because there were no means for burial at the quarantined farm.

By July 3 the tests showed that the condition was most likely vesicular exanthema so arrangements were made to kill the infected and exposed animals on July 5.

Two agents of the division were assigned to kill the animals but the owner refused to allow them to shoot the animals unless the State would agree to pay full value for all swine slaughtered, at 230 pounds weight, the average weight attained of hogs consigned to slaughter.

Chapter 4:5-10 provides—"When animals are slaughtered or otherwise disposed of as directed in section 4:5-9 of this title, the value of the same may, at the request of the Department or any person interested, be ascertained and appraised by any authorized agent of the Department, or in cases where an agreement between the agent and the owner cannot be reached, by three disinterested freeholders resident in this State, one chosen by the agent, one chosen by the owner and the third by the first two at the expense of the owner, who shall make and sign a certificate thereof, in the presence of a witness who shall attest the same.

"The appraisal shall be made on the basis of the market value of the animals to be slaughtered immediately prior to the time of the discovery of the infection, but shall be limited to the sum of one hundred dollars (\$100.00) for registered animals, and to forty dollars (\$40.00) for all others except as provided in section 4:5-27, and except for animals authorized by the Department to be slaughtered because of brucellosis under a program permitting payment of indemnity.

"One-half of the valuation so ascertained shall be paid by the State on the presentation of such certificate, with the approval of the Department indorsed thereon, to the owner."

The owner of Jersey Feed Farms was informed of the legal limitations and told that the slaughter would be withheld until he presented his request to the Secretary of Agriculture which he did. The only alternative to killing the animals would be to continue the State quarantine but there was the danger of the infection spreading to the 4,000 other swine on the farm and to adjoining farms. The State could not be committed to an expenditure of more than eight to ten thousand dollars to kill all of the infected and exposed swine, so the only recourse was to continue the quarantine. The order to kill the exposed and infected swine was countermanded.

Charles Schoch, head of the Secaucus Livestock Association, was asked to arrange a meeting with all garbage feeders in the area so they could be informed about the disease and measures they should take to avoid infection. Arrangements were made also to discuss the situation with the U. S. Bureau of Animal Industry officials in Washington on July 8. A meeting of Secaucus garbage feeders was arranged for July 9.

At the Washington meeting between Dr. S. O. Fladness, assistant chief of the Bureau, Dr. C. L. Gooding, in charge of vesicular exanthema control, E. Robert Shannon of the Swine Records Association and Dr. Hendershott, it was requested that the Federal government be asked to declare the outbreak an extraordinary emergency and proceed to eradicate the disease.

Background of the Disease

Vesicular exanthema first appeared in 1932 in California where it was diagnosed as foot and mouth disease and handled by slaughter, burial, cleaning and disinfecting.

In 1933 the disease broke out again hundreds of miles distant from the first outbreak. Dr. J. Traum noted the virus acted differently from that of foot and mouth disease and he called the condition vesicular exanthema. Thereafter the Federal government refused to participate in the payment of indemnity and as a result of the wording of the California law, that state likewise had to discontinue the slaughter burial method of eradication.

In the intervening years the disease was confined principally to raw garbage feeding farms in California. On or about June 6, 1952, a garbage feeding farmer of Cheyenne, Wyoming, noted increased lameness in his swine. He supplied raw garbage-fed hogs to the Norden Laboratories for serum production. The laboratories called their farm hogs about June 16 and sent 73 head of cull hogs to the Omaha Stock Yards. They arrived in Omaha the night of June 17. Twenty-four head went to Reliable Packing Company, Chicago, Illinois, 18 to a Mr. Weichman of Fremont, Nebraska, 22

to Armour and Company for immediate slaughter and nine to Swift and Company of Omaha for slaughter subject to inspection. The history of the nine that went to Swift and Company reveals that one was dead on arrival, three passed ante mortem and post mortem inspection and were approved for food while four were condemned to tankage because of high temperature and pneumonia and one was condemned because of emaciation.

On June 18 West and Diez, in filling Weichman's order, presented 51 head for inspection. One had rhinitis, two were crippled and four had high temperatures. The remaining 44 head were vaccinated with an average of 71 c.c. anti-hog cholera serum and 3 c.c. hog cholera virus, were sprayed with disinfectant and then released.

Shipments of swine continued through the Omaha Yards until June 28. The Yards were then quarantined for cleaning and disinfection.

Between June 17 and 27 there were 578 hogs shipped out, 105 going to Fremont on June 27. During this time the King Pig Company order for 210 head of feeders to Charles Schoch was filled from Fremont. They left Fremont on June 26 and arrived late on the night of June 28 or early morning on June 29. Within a few weeks vesicular disease had spread to 16 states.

Because this disease had existed for about 20 years in California, the USDA solicitor ruled that it was illogical to declare the disease an emergency at this time.

There was no uniformity of procedure for handling the disease in the various states so it was decided to call together the state veterinarians of all states where infection had occurred to endeavor to work out a uniform method of handling vesicular exanthema. This meeting, called for July 15 and 16 in Washington, D. C. resulted in the adoption of the following program:

"PROPOSED UNIFORM METHOD OF CURRENTLY HANDLING VESICULAR EXANTHEMA

July 17, 1952

"Dr. E. P. Anderson of Lincoln, Nebraska, was elected chairman of the subcommittee appointed to draw up the program of uniform procedure to be followed throughout the United States to deal with the current fast-spreading outbreak of vesicular exanthema in swine.

The members of the committee are Dr. A. R. Miller, chief of the Meat Inspection Division, and Dr. C. L. Gooding, chief of the Inspection and Quarantine Division, of the U. S. Bureau of Animal Industry; Dr. Jacob Traum, consultant, U. S. Bureau of Animal Industry; Dr. A. G. Boyd, chief, Division of Animal Industry, California Department of Agriculture; Dr. E. P. Anderson, chief, Nebraska Bureau of Animal Industry; and Dr. R. A. Hendershott, director, Division of Animal In-

dustry, New Jersey Department of Agriculture. Dr. Hendershott was designated recording secretary for the subcommittee.

"The committee met July 15, 1952.

"Vesicular exanthema in California, Washington, Oregon, Arizona, Utah, Idaho, Wyoming, Nebraska, Iowa, Missouri, Kansas, New Jersey, Alabama and South Dakota was reviewed, the object being to bring into focus the varying situations that currently are existant in the Nation..

"The committee recognized the fact raw garbage is the major factor in the introduction, perpetuation and dissemination of vesicular exanthema, as well as other viral, bacterial and parasitic diseases of livestock; that the transportation of swine has resulted in the present widespread dissemination of the disease; and that any plan or endeavor to control and eradicate vesicular exanthema must include a uniform requirement that all garbage and slaughterhouse and butcher shop waste intended for use as animal feed be heated throughout the mass at a minimum temperature of 160 degrees F. for not less than 30 minutes.

"Until such time that the disease is brought under control we recommend that all transporting conveyances be cleaned and disinfected after the transportation of each lot of swine and that no further unloading of swine from the infected area be permitted in transit. All troughs and other equipment used to feed or water swine in cars shall be cleaned and disinfected following each use.

"The committee maintains that eradication of vesicular exanthema is the goal. We offer as one program the application of the methods heretofore employed with success in the eradication of another and similar virus disease of livestock, foot and mouth disease. Appreciating that some time will be required to put this eradication method into operation, your committee offers a modified eradication procedure for immediate application as follows: The supervised movement of all hogs from infected premises direct to Federal meat-inspection plants be expedited to reduce the amount of virus infection on farms or other premises.

"1. Handling or disposition of carcasses of infected and exposed lots now held in quarantine in packing houses:

(a) The meat of all animals in this class shall be processed as provided in Regulation 94.4 of U.S.B.A.I. Order 373 and implementing instructions.

(b) Such carcasses shall be boned and passed for cooking (by heating throughout to a temperature of 160 degrees F. for 30 minutes). All parts of the carcass not so treated shall be tanked.

or

(c) The consignment of such carcasses to the tank. (Tankage, meat scraps, etc.)

"2. The disposition of live hogs now under quarantine because of vesicular exanthema:

(a) Submit such swine to ante-mortem inspection as usual under Federal meat inspection regulations and handle the carcasses as in (a), (b) or (c) of paragraph 1.

or

(b) Subject all swine to ante-mortem inspection as in No. 2 (a) and tank all ante-mortem rejects and condemnns.

"Prohibit the introduction of swine onto infected premises until the premises will have been depopulated and thoroughly cleaned and disinfected.

"Following thorough cleaning, it is recommended that the premises be disinfected through the use of four pounds sodium carbonate (soda ash-sal soda), 1 pound in 3 gallons of water, or 2 per cent sodium hydroxide (lye) at the rate of one 13-ounce can to 5 gallons of water.

Restocking

"Depending on the size of the plant, restock by introducing 2 to 5 per cent of the hog capacity of the plant for the first three weeks and continue at this rate, making inspections prior to each new addition of swine."

County Agent George Lamb called a meeting of garbage feeding farmers in Gloucester County for July 14 in Woodbury. A film, "Vesicular Disease" was shown and the farmers told how the disease spread and what to do to avoid infection. They suggested staying away from neighbors' farms, not visiting the Secaucus area and not receiving garbage or other food stuffs from New York or North Jersey and cooking all garbage before feeding.

A feed purveyor of bakery wastes inquired if he could continue to bring in bakery wastes as he had trucks that were used exclusively for hauling such food from New York to Westville Grove. He was told that there was no thought that bakery wastes, as such, were infected with the virus. It later developed, however, that his trucks moved in and out of the Secaucus area and on down to Gloucester County.

At this time there was no disease simulating vesicular disease reported in this area. Meanwhile veterinarians of the Division were conducting farm to farm inspections in the Secaucus area. They found 14 farms infected between July 1 and July 25, the time the quarantine of infected farms was cancelled.

Infections This Year

Between June 29, 1952, and June 30, 1953, there were 162 premises on which cases of vesicular exanthema were disclosed. Of these, 89 were in Gloucester County, 27 in Hudson, 10 in Burlington, nine in Atlantic, eight in Middlesex and the remainder in Ocean, Monmouth, Cape May, Camden, Hunterdon, Morris and Bergen counties.

On July 10 the Division was notified that the Federal meat inspectors at the Charles Miller Packing Company in North Bergen had found suspicious lesions in a lot of 159 slaughter hogs received by rail car from Indiana. A visit to the plant revealed that six of the 159 head had been held on ante mortem inspection, the remaining 153 head had been passed through meat inspection and were hanging in the cooler along with 2,200 other slaughter hogs.

Examination of the six held in the quarantine pen gave evidence of vesicular disease. A number of other hogs held in the slaughter pens, some of which had been delivered as early as June 30, also were suspicious. It also developed that they had received two lots of slaughter hogs from Nebraska, one on June 25 which seemed satisfactory and a second lot on June 27 which Dr. Bauman believes may have had lesions since there was increased lameness. .



A quarantine was placed on all hogs in the holding pens as well as those in the slaughterhouse cooler. It was decided that exposed swine carcasses, even though capable of passing ante mortem and post mortem meat inspection, still carry virus. When this returns in pork trim in garbage and fed raw to swine it would certainly set up new centers of infection. Later Mr. Miller stated he could identify all of the 153 hogs shipped from Indiana as they were marked them with a "D." He was told if he would sort these carcasses and hold them aside in quarantine the remainder of the slaughtered hogs would be released for sale. This he did. Division employees inspected subsequent shipments and quarantined all hogs in shipments where any animal was found with lesions of vesicular disease. By July 17 about 2,600 hogs were held in quarantine pens at Charles Miller Packing Company and a number of heavy hogs were beginning to die. Miller complained about the quarantine and the death losses and asked who was going to reimburse him for his loss.

The authority for establishment of a quarantine on hogs in interstate commerce delivered to a U. S. government inspected packing house was questioned. The State Board met July 22 and considered the matter. It was pointed out that the law granted powers specifically to the State Board of Agriculture, that the State Board could be called on short notice and should be consulted before quarantines were issued. The State Board decided to continue the quarantines placed by the Director of the Division of Animal Industry until 7:30 a.m., July 25. The quarantine would then be lifted. The quarantine was extended to allow the USDA to take some positive action should it deem it advisable. Unfortunately, although the U. S. Secretary of Agriculture signed an order July 24 which placed a quarantine on the interstate movement of all swine originating in counties in which vesicular exanthema was diagnosed, the order was not received in New Jersey until July 29. In the interim what remained of the 2,600 exposed and infected swine at the Charles Miller Packing Company moved through meat inspection to market as fresh pork.

With the cancellation of State quarantines, inspection of swine farms in the Secaucus area was temporarily discontinued. At this time the initial infection found in the Gloucester area was undergoing tests to determine the nature of infection in that area. As soon as the disease was definitely diagnosed, a letter was sent to all veterinarians, county agents and breed associations informing them of the situation within the State.

PREMISES ON WHICH VESICULAR EXANTHEMA WAS DISCLOSED AS RESULT OF DIFFERENTIAL TEST FISCAL YEAR 1952-53

County	Date Reported	Name, Address and Test Date	Swine Involved	Inships	Origin
1. Hudson	June 29, 1952	Jersey Feed Farms Secaucus Test July 1 to 7, 1952—Dr. King, Diagnostician	3,500	210	Freemont, Nebraska
2. Hudson	July 10, 1952	Charles Miller & Company Union City Test July 11 to 16, 1952—Dr. King	500		National Stock Yards, Illinois & Indiana
3. Hudson	July 16, 1952	Jersey City Stock Yards Jersey City Test July 18 to 23, 1952—Dr. Wilder	800		National Stock Yards, Illinois
4. Ocean		U. S. Farm Company, Box 91, Whiting Test July 24 to 29, 1952—Dr. King	1,800		Local
5. Burlington		Smentkowski Bros. Chatsworth Test July 25 to 30, 1952—Dr. King	3,800		Local
6. Gloucester		William Laferty & Sons, Sewell Test July 28 to August 1, 1952 Negative—Poor Lesions. Reinoculated test animals and 1 additional pig August 2 to 12, 1952—Dr. Waddell	3,500		Local
7. Gloucester		Lightman Brothers Westville Grove Test July 27 to August 6, 1952—Dr. Waddell	8,000		Local
8. Hudson		Charles Miller and Company Union City Test August 1 to 11, 1952—Dr. King	89		St. Louis, Missouri

County	Date Reported	Name, Address and Test Date	Swine Involved	Inships'  Origin 
9. Morris	August 12, 1953	Eugene Delmonico, Fairchild Avenue, Morris Plains, Operated by Peter Tyczkowski, Morris Plains, Test August 15 to 25, 1952—Dr. King	200	Local Garbage
10. Burlington	August 29, 1952	Oscar Smith, Vincentown Test September 2 to 12, 1952	1,500	Philadelphia Garbage
11. Camden	October 9, 1952	Reginald Bennett R.D. Marlton Test October 13 to 22, 1952—Dr. King	400	Philadelphia Garbage
12. Cape May	October 13, 1952	Wildwood Packing Co. Rio Grande Test October 16 to 26, 1952—Dr. King		77 East St. Louis, Illinois
13. Bergen	November 21, 1952	Henry Henkle and Son Wyckoff Test November 22 to December 2, 1952—Dr. King	4,630	Local Garbage
14. Middlesex	January 5, 1953	John Baldauf, R.D. 1 New Market Test January 10 to 20, 1953—Dr. King	80	Plainfield Garbage
15. Hudson	January 21, 1953	Charles Miller and Company, North Bergen Test January 22 to February 2, 1952— Drs. Leiby and McKinney		140 St. Henry, Ohio
16. Cape May	January 27, 1953	Wildwood Packing Company Rio Grande Test January 29 to February 9, 1953—Dr. King		146 East St. Louis, Illinois
17. Hunterdon	January 26, 1953	Elizabeth Henkle, Glen Gardner Test January 22 to February 2, 1953—Dr. King	700	Newark Garbage

County	Date Reported	Name, Address and Test Date	Swine Involved	Inships	Origin
18. Cape May	February 2, 1953	Wildwood Packing Co. Rio Grande Test February 4 to 14, 1953—Dr. King		131	Chicago
19. Hunterdon	February 12, 1953	Croton Farms, Inc., R.D. 1 Box 275, Pittstown Test February 18 to 28, 1953—Dr. King	1,400		Newark Garbage
20. Hudson	March 11, 1953	Charles Miller and Company, North Bergen Test March 12 to 22, 1953—Dr. King		25	Pomona, New York
21. Hudson	March 18, 1953	Charles Miller and Company, North Bergen Test March 21 to 31, 1953—Dr. King		132	Stoney Ridge, Ohio
22. Cape May	March 26, 1953	Edwin Bradway, Cape May Test March 28 to April 7, 1953—Dr. King	235		Local Garbage
23. Cape May	April 6, 1953	Ben Germanio, Woodbine Test April 8 to 18, 1953—Dr. King	900		Garbage
24. Monmouth	April 23, 1953	Michael Bazlowics, R.D. 3 Freehold Test April 8 to 18, 1953—Dr. King	68		Local Garbage or Additions
25. Atlantic	May 18, 1953	Elmer Haines, Leipsig Avenue Egg Harbor Test May 20 to 30, 1953—Dr. King	500		Local
26. 27. 28. Hudson	June 25, 1953 June 26, 1953 June 26, 1953	Charles Miller and Company North Bergen June 29 to July 9, 1953 Test on 3 lots Drs. Wilder and McKinney		142 144 140	King Pig, Minnesota Kleinheinz, Ohio King Pig, Minnesota

Authority To Quarantine Granted

The question of the authority of State veterinary agents to immediately quarantine animals exhibiting symptoms of a dangerous, infectious disease was resolved by the State Board of Agriculture. The Board granted permission for the placement of quarantines until such time as they could meet to either ratify or cancel them.

With respect to the quarantine of swine affected with vesicular exanthema, the Board ruled as follows:

"On motion of Mr. Wescott, seconded by Mr. Heritage, the Board voted that State quarantines on farms infected with vesicular exanthema should be lifted when the Division of Animal Industry finds that animals on the farm no longer show evidence of the disease, such as blisters and lameness, and are apparently recovered to the extent of having good appetites, and are lively, and when the Division in its judgment, through tests or otherwise, has concluded that the disease is not foot and mouth disease nor vesicular stomatitis."

Numerous meetings between State officials and the Federal inspector in charge in New Jersey were held during the early days of the outbreak. Ways and means were sought to find slaughterers who would be willing to kill and specially process recovered swine from infected farms.

Recommendations were presented to the State Board of Agriculture for consideration and approval concerning the control of importation of swine for immediate slaughter, feeding and breeding purposes, the licensing of garbage feeders and the movement of swine from quarantined counties, from non-quarantined counties and from infected herds following recovery of infected swine. Division veterinarians were taken from their regular assigned duties to make farm to farm inspection to detect vesicular exanthema. Livestock auction markets were requested to temporarily discontinue the sale of swine. Provisions were made to require veterinary inspection of swine before they were moved from any farm. Additional provisions were made for the issuance of permits by county agents and veterinarians of swine from known grain feeding farms for slaughter for home consumption.

A letter, identified as D.A.I. Form 352, dated November 19 and titled "Recommended Procedure for the Eradication of Vesicular Exanthema" was sent to all swine farmers outlining what steps could be taken to avoid infection and to remove the infection once it invaded their farm.

On August 1, the U. S. Secretary of Agriculture declared a national emergency because of the disease and offered Federal aid to cover half the costs of indemnity, cleaning and disinfection if the state government was prepared to pay an equal amount.

Federal quarantines were placed on 13 counties because of vesicular

exanthema on the dates noted. Two counties were later released from quarantine.

County Quarantined	Date Quarantined	County Released	Date Released
	1952		
Bergen	July 24		
Burlington	July 24		
Essex	July 24		
Gloucester	July 24		
Hudson	July 24		
Hunterdon	July 24		
Ocean	July 24		
Union	July 24		
Morris	August 27		
Camden	November 5	Hunterdon	November 5, 1952
	1953		
Hunterdon Re-Quarantined	February 20		
Cape May	April 1		
Atlantic	May 28		
Monmouth	May 28	Essex	May 28, 1953

Proposed Legislation

Three bills were prepared. Assembly No. 563 dealt with the prohibition of the movement of garbage into the State. Assembly No. 203 provided for the payment of indemnity and the third, Assembly No. 205, provided for the licensing of garbage feeders. All three bills were opposed by the New Jersey Farm Bureau and the garbage feeding pig farmers.

A public hearing was held for the licensing bill and a committee was appointed to work out a compromise bill. This too did not pass.

Aid of New Jersey State Police Enlisted to Enforce State Board of Agriculture Regulations

During October a meeting was held with a representative of the State Police and the cooperation of this body sought to assist in policing movements of swine on State highways. A form of complaint was prepared with the assistance of a member of the Attorney General's office.

Examinations During Year

At the end of the first year of vesicular exanthema 8,634 inspections were made on 3,622 farms containing 265,288 head of swine. One hundred and nineteen farms containing 131,344 head of swine were found infected. These infected farms were in 11 counties with 62 in Gloucester County and 30 in Hudson County.

Permits were issued for the movement of 94,805 hogs to slaughter and 64,173 from one farm to another within the State for feeding or breeding

purpose. Permits were also issued for the importation of 909,442 hogs for immediate slaughter. .

Garbage Cooking Legislation

Forty-one states have passed laws or regulations requiring the cooking of garbage at 212 degrees F. prior to feeding. Some of these laws will not be effective until January 1, 1954, and it is expected that some time will naturally elapse before operators will be able to purchase and install proper equipment to carry out the provisions of the laws.

Causes for Alarm About Vesicular Exanthema

Livestock farmers should primarily be alarmed about vesicular exanthema because it is difficult to distinguish it from foot and mouth disease except through time consuming animal inoculation tests.

There are three known strains of vesicular exanthema virus, A-48, B-51 and C-52, and recovery from infection with one strain offers no immunity from the others. There are six known strains of foot and mouth disease virus. On two previous occasions foot and mouth disease was introduced into the United States through the medium of garbage fed to swine. Unless vesicular exanthema is eradicated it will be possible for foot and mouth disease to get a head start under the belief that it was vesicular exanthema. It could spread rapidly to all cloven hoofed animals in the State and result in the destruction of valuable breeding and milk and meat producing herds. Also, as long as vesicular exanthema remains in New Jersey swine herds, anyone so inclined could simply place a few drops of any one or all six strains of foot and mouth virus into a garbage can and really ruin the livestock industry.

During the past year vesicular disease has spread from California, where it had been confined since the initial infection diagnosed in 1932. Raw pork scraps were dropped from a transcontinental train dining car in Cheyenne, Wyoming, and were fed to swine, part of which were consigned to Norden Laboratories in Grand Island, Nebraska. Cull swine consigned by Norden Laboratories and arriving at the Omaha Stock Yards on June 17, 1952, started the disease on its way to 42 states.

One major stockyard after another became infected through the docking of exposed swine that left infective material in pens, yards, trucks and railway cars with which they came in contact. Healthy swine using these same facilities were exposed to virus. Some of these swine moved into slaughtering establishments before they exhibited symptoms of the disease and in turn served as a great reservoir of vesicular exanthema virus. The

trim from such carcasses shipped all over the United States will continue to serve as a source of infection whenever fed raw to swine. The logical answer to such a situation is for each garbage feeding farmer to cook the garbage to destroy the virus.

Early adoption by the State Board of Agriculture of proposed regulations prohibiting the movement of garbage fed hogs into New Jersey has had its effect in the restraint of new importation of virus. If it were possible to adequately control the movement of swine within the State as provided in the Board order and if garbage feeders heeded the Department's recommendation to cook garbage fed to swine, more progress would have been made in eradication of this disease.

Laws, orders and quarantines are no better than the enforcement of them. A mere statement of policy without wholehearted cooperation of those involved or adequate policing and enforced compliance is valueless. A law, order or regulation that is promulgated and not enforced is far worse than if none were declared.

The regulation issued with respect to the importation of breeding and feeding swine, particularly the provision of 10-day quarantine, has been effective in preventing new infection; no case of vesicular disease has been found in all of the swine introduced in conformity with this requirement.

Since the initial outbreak of vesicular exanthema in Nebraska in June 1952, many agencies throughout the nation have repeatedly pointed out the disease potential in the feeding of raw garbage. During the year a drive was carried on to obtain passage of garbage cooking legislation throughout the nation and remarkable success was attained in 37 states.

The principle in any disease control and eradication is to prevent the animal from coming into contact with sufficient amounts of the causative agent to produce the disease. In the order of importance, the principle sources of infection are: (1.) the introduction of infected or exposed swine and (2.) the introduction of live virus in the feed. Regulations governing the importation of feeders will eliminate introduction of infection through this route. The proper cooking of the garbage will prevent introduction through feeding.

VESICULAR EXANTHEMA INSPECTIONS

July 1, 1952 to June 30, 1953

County	Suspicious		Infected		Non-Infected		Total		Number Infected & Suspicious	Farm Non-Infected	Inspections Made Total
	Herds	Swine	Herds	Swine	Herds	Swine	Herds	Swine	Herds	Herds	Inspections Made
Atlantic	3	96	7	1,863	297	11,951	307	13,910	22	580	602
Bergen	---	---	1	2,300	16	937	17	3,237	9	26	35
Burlington	5	1,973	5	7,176	196	9,216	206	18,365	43	348	391
Camden	1	275	2	235	215	4,746	218	5,256	8	395	403
Cape May	---	---	---	---	119	5,691	119	5,691	4	290	294
Cumberland	---	---	---	---	256	1,771	256	1,771	---	273	273
Essex	---	---	---	---	4	903	4	903	---	14	14
Gloucester	27	13,355	62	62,033	542	26,327	631	101,715	545	951	1,496
Hudson	---	---	30	49,941	7	13,230	37	63,171	721	145	866
Hunterdon	---	---	2	2,118	285	8,123	287	10,241	19	729	748
Mercer	---	---	---	---	105	3,658	105	3,658	---	318	318
Middlesex	10	1,813	3	838	107	2,124	120	4,775	38	247	285
Monmouth	---	---	4	3,380	191	7,069	195	10,449	18	680	698
Morris	---	---	1	250	135	9,210	136	9,460	6	266	272
Ocean	3	169	2	1,210	58	1,113	63	2,492	10	116	126
Passaic	---	---	---	---	8	244	8	244	---	14	14
Salem	---	---	---	---	541	3,920	541	3,920	---	874	874
Somerset	---	---	---	---	124	2,661	124	2,661	---	309	309
Sussex	---	---	---	---	122	1,417	122	1,417	---	251	251
Union	---	---	---	---	10	744	10	744	---	24	24
Warren	---	---	---	---	116	1,208	116	1,208	---	341	341
State	49	17,581	119	131,344	3,454	116,263	3,622	265,288	1,443	7,191	8,634

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SWINE IMPORTED AND SLAUGHTERED AT FEDERAL PLANTS
SINCE ISSUANCE OF SPECIAL PERMITS
Through June 30, 1953

ARMOUR & COMPANY JERSEY CITY		CHARLES HAAG, INC. HOBOKEN	
August	5,218	July	241
September	8,199	August	978
October	14,539	September	716
November	18,194	October	3,679
December	5,798	November	7,121
January	34,272	December	290
February	14,078	January	8,326
March	19,599	February	1,143
April	17,636	March	5,848
May	14,608	April	7,830
June	14,888	May	3,922
		June	6,082
Total	167,129	Total	46,176
ARBOGAST & BASTIAN NEWARK		JERSEY CITY STOCK YARDS JERSEY CITY	
August	240	February	16
		March	81
		Total	97
DELAWARE PACKING CO. TRENTON		C. MILLER & CO. NORTH BERGEN	
November	102	August	521
January	987	September	657
February	323	October	18,450
March	1,014	November	27,194
April	1,196	December	4,937
May	174	January	39,955
		February	15,110
Total	3,796	March	18,258
		April	14,141
		May	8,187
		June	20,495
		Total	167,905
JOHN ENGELHORN & SON NEWARK		CHARLES SCHOCH SECAUCUS	
August	4,951	January	343
September	5,506		
October	19,401		
November	33,490		
December	3,064		
January	38,298		
February	18,608		
March	57,377		
April	32,712		
May	24,597		
June	37,483		
Total	275,487		
FISHER BROTHERS BRIDGETON		SWIFT & COMPANY JERSEY CITY	
January	377	August	116
February	60	September	626
March	109	October	602
April	30	November	19,959
June	71	December	1,668
		January	15,456
		February	14,169
		March	26,328
		April	18,502
		May	12,123
		June	16,218
Total	647	Total	125,767

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TRENTON PACKING CO.		March		21,067
TRENTON		April		15,159
January	376	May <td>10,640</td>		10,640
February	2,079	June <td>14,064</td>		14,064
March	1,369	Total		103,583
April	654			
May	534			
June	50			
Total	5,062	WILDWOOD PACKING CO.		
VAN WAGENEN & SCHICKHAUS		WILDWOOD		
HARRISON		October	122	
August	640	November	144	
September	355	December	541	
October	454	January	4,623	
November	12,545	February	1,204	
December	1,750	March	501	
January	16,419	April	1,040	
February	10,490	May	1,577	
		June	3,458	
		Total	13,210	

PERMITS ISSUED FOR MOVEMENT OF SWINE TO SLAUGHTER AND FROM FARM TO FARM

Through June 30, 1953

County	Hogs Moved to Slaughter	Feeding and Breeding Swine Moved Within the State
Atlantic	2,504	1,089
Bergen	134	752
Burlington	3,553	4,566
Camden	1,260	2,346
Cape May	1,934	1,182
Cumberland	1,372	1,020
Essex	147	14
Gloucester	9,145	34,044
Hudson	50,984	8,200
Hunterdon	4,538	3,203
Mercer	1,584	685
Middlesex	2,765	271
Monmouth	5,482	3,976
Morris	1,026	926
Ocean	1,078	114
Passaic	99	98
Salem	2,353	421
Somerset	2,534	682
Sussex	1,044	257
Union	103	143
Warren	1,066	184
State	94,805	64,173

SWINE IMPORTED FOR SLAUGHTER PURPOSES

July 1, 1952 to June 30, 1953

Armour & Company, Jersey City	167,129
Arbogast & Bastian, Newark	240
Delaware Packing Co., Trenton	3,796
John Englehorn & Son, Newark	275,487
Fisher Bros., Bridgeton	647
Charles Haag, Inc., Hoboken	46,176
Jersey City Stock Yards, Jersey City	97
C. Miller & Company, North Bergen	167,905
Charles Schoch, Secaucus	343
Swift & Company, Jersey City	125,767
Trenton Packing Company, Trenton	5,062
VanWagenen & Schickhaus, Harrison	103,583
Wildwood Packing Co., Wildwood	13,210
Total	909,442

A total of 59,966 swine weighing approximately 14,991,500 pounds have been moved this fiscal year to the Charles Haag, Inc. abattoir in Secaucus for special processing.

OTHER ANIMAL DISEASES

Leptospirosis

During November a case of leptospirosis in a purebred Jersey herd within the State was reported to the Division.

Leptospirosis is one of the diseases of animals which is communicable to man. Many strains of the organism have been isolated in the United States, in England and in Europe. One of the old diseases of man and animal, it spread in Europe and Asia through the migration of rats from the East to the West.

The disease to the Department's knowledge has appeared three different times in New Jersey. The earliest case diagnosed was at the Walker-Gordon Plant several years ago. The second was in the dairy herd at Annandale Reformatory and the third reported case, which affected purebred Jersey cows, is the one which occurred in November on a farm in R.D. 2 Lambertville.

During the past year or two *Leptospira Pomona* has been isolated many times from swine in the United States. *Leptospira Icterohemorrhagia*, commonly found in rats, is highly infectious for man and usually results in death. The rat excretes the organism in its urine, contaminating food material and transmitting the infection to man.

As far as the Division knows there have not been many cases in man contracted through the consumption of milk from cattle affected with the

disease. Probably the reason for this is that the vast majority of the milk consumed is pasteurized and pasteurization temperatures destroy the infectivity of the organism for man.

Leptospirosis does pose a serious problem to the owners of livestock, however. They have reported it as cause for a high percentage of abortions in cattle not otherwise attributable to brucellosis, trichomoniasis or vibriosis.

Attendants handling animals which are affected with the disease may contract the infection through wounds that are bathed with milk containing the organism. It is also possible that man and other animals could contract the infection through air that has droplets of urine which could convey the organism from diseased animals.

In considering the possibilities of transmission of this disease, particularly through open wounds, one wonders about the chances of infecting swine which have vesicular exanthema with open blisters or wounds on the feet. It is also possible that vesicular disease may provide means for the introduction of not only *Leptospira Pomona* infection but *Leptospira Icterohemorrhagia* from the urine of infected rats.

Vesicular Stomatitis

Early in June Dr. Petree, a local practitioner in Hunterdon County, reported the appearance of foot, mouth and teat lesions in a herd of cattle.

The first symptoms noted were lesions resembling cow pox on the teats and the cases were treated as pox. Investigation showed that six cows from the herd had been delivered to Riegelsville. These animals also exhibited lesions on the teats and were being treated for cow pox. In addition, one cow had been delivered to a farm in Bloomsbury.

Investigation by agents of the U. S. Bureau of Animal Industry and the New Jersey Division of Animal Industry revealed lesions on the teats, feet and tongue suggestive of either foot and mouth disease or vesicular stomatitis. The farms involved were placed under quarantine, test animals were procured and material was collected for inoculation. The test indicated the condition to be vesicular stomatitis, New Jersey strain.

Quarantines on animals and animal products placed on the farms are to be maintained until all teat lesions are healed and for a period of 30 days following recovery. All farms which had received animals from the cattle dealer, as well as adjoining farms, are being subjected to weekly veterinary inspections and to date no additional cases have been found. Investigation failed to disclose the source of the infection, however.

Ten farms, containing a total of 100 cattle, 60 sheep, 37 mink and 3 horses were under close observation to detect any spread of the disease.

Anthrax

New Jersey had no resurgence of anthrax in 1953, although 1952 was the year of the highest number of confirmed cases of the disease in the history of the State. Practicing veterinarians, however, continued to send to the laboratory specimens of animals which died suddenly from no apparent cause. Specimens from 47 bovines, 7 sheep, 1 swine and 1 horse were received and tested in the laboratory, all with negative results.

The first case of natural anthrax was reported September 5, on a farm in R.D. Wrightstown. Three animals had died suddenly, one of which was removed without contacting the office. Specimens were brought in on two, both of which were diagnosed as anthrax.

On December 17 Dr. Ralph Wilson was called to investigate the cause of sudden death of a cow in Hamburg. Tests showed that the cow had anthrax, but there was no previous history of sporadic anthrax or anthrax resulting from treatment disclosed in this herd. As is customary, the animal was properly disposed of and the premises were cleaned and disinfected.

On January 27 in Basking Ridge a calf died of no apparent cause. The calf had been a natural addition, no animals were imported into the herd and there is no history of a case of anthrax having occurred previously on these premises.

On February 4 Dr. Amos Stults brought to the Division the ear from a half which he autopsied in Hopewell. Laboratory examination disclosed the animal had had anthrax. The body of the affected animal was destroyed by the usual method, burning.

In each of these cases specimens were also sent to Washington and each time a confirmation of the State laboratory diagnosis was received. In addition, all animals on the four premises were immediately treated to protect them against anthrax. No additional cases were reported.

All owners on whose premises anthrax occurred during the past two years were offered the services of the State to vaccinate their stock. Only nine of 22 owners and two owners of adjacent farms requested the service. These were taken care of by State agents.

Again this year preventive vaccination was carried out in Salem County where 1,256 cattle on 48 premises and seven horses on five farms were immunized.

Encephalomyelitis

(Brain Fever in Horses)

During the year six cases of encephalomyelitis and protective vaccinations were reported to this office by practicing veterinarians.

Month 1952	Veterinarian	Vacci- nations	Affected Animals	County	Deaths
July	Irving E. Botwinick	56	----	Cape May	----
July	Irving E. Botwinick	10	----	Cumberland	----
October	Irving E. Botwinick		1 pony, M. Holsinger, Heislerville	Cumberland	1
October	James M. Johnston		1 horse, J. Bennett Hills, Swedesboro	Gloucester	Recovered
October	W. W. Wynn	2	2 horses, Thomas Baker, Bridgeton	Cumberland	2
October	Ryland Croshaw	2	1 horse, Joseph Collins, Columbus	Burlington	1
October	Ryland Croshaw		1 horse, Thomas Wainwright, Bordentown	Burlington	1

Scabies in Sheep

Several cases of scab in sheep were reported during the year. In each instance investigation was made of the source flock and all infected flocks were sheared and treated with Lindane. This promptly resulted in complete control of the parasitic condition.

Scabies in cattle, judged by the few reports received, indicate either fewer cases or failure of owners and attending veterinarians to report the occurrence.

Five cases of mange were reported in Sussex County by Dr. R. A. Wilson. The owners were informed about the disease, its transmissibility to man and methods of eradication. Dr. H. A. Roney reported mange in cattle in Columbia.

LIVESTOCK AUCTION MARKETS

The transmission of livestock diseases through the lack of environmental sanitation continues to be a problem at some of the livestock auction markets where animals are received without adequate inspection with regard to health or physical condition.

Since 1938 regulations have been proposed by the director of the Division of Animal Industry to provide for improved sanitation at the markets, some of which leave a great deal to be desired from the standpoint of construction, cleanliness and sanitation. This would not cause concern if all livestock consigned to these auction markets were released from the market

for sale for immediate slaughter only. It is hoped that in the near future consideration will be given to legislation which would provide for better control over these sale places.

Dr. Arthur Gemberling, working as a supervisor appointed by the Division at the Harris Sales Company, Woodstown, continued to inspect all livestock entering that market and to tuberculin test cattle not checked within 60 days of the sale. He also immunized all swine passing through the sale for other than slaughter purposes. During the year he has reported the following work performed at the market:

Cattle		Cattle		Swine Immunized	
Transferred	Lots	Tuberculin Tested		Single Treated	0
Inshipped	2	39		Double Treated	288
Local	572	952		Total	288

LIVESTOCK SOLD AT HARRIS SALES STABLES

July 1952 to June 1953

Lambs	Cattle	Bulls	Calves	Hogs	Goats & Sheep	Steers	Horses	Re-actors
325	4,897	826	13,711	6,431	1,376	2,254	504	115

During the year the following livestock was received in carload lots unloaded in Jersey City and lightered to New York:

DIRECT RECEIPTS OF LIVESTOCK AT JERSEY CITY STOCK YARDS

July 1952 to June 1953

Month	Cattle	Sheep	Calves	Hogs	Horses
July	143	28,663	1,823	12,976	----
August	11,962	47,195	2,931	11,543	----
September	9,480	61,226	3,551	19,070	----
October	8,510	69,522	3,288	18,500	----
November	8,252	43,323	3,976	19,830	----
December	9,171	66,496	4,243	22,363	----
January	14,355	68,275	4,549	20,300	----
February	11,818	56,293	2,977	17,395	38
March	10,160	61,822	2,646	20,673	54
April	11,472	60,137	3,675	15,557	----
May	11,012	57,655	6,976	11,745	----
June	10,139	28,085	6,001	11,241	----
Total	116,474	648,695	46,636	201,193	92

In addition, livestock is received in the Yards from points in New Jersey and from adjacent states.

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SUMMARY OF LIVESTOCK SOLD AT THE JERSEY CITY YARDS FOR SLAUGHTER

July 1952 to June 1953

Month	Calves	Sheep	Cows	Bulls	Hogs	Steers
July	2,818	650	482	46	2,274	15
August	1,670	133	462	46	1,011	24
September	2,687	736	657	41	1,777	108
October	2,395	929	817	114	1,140	104
November	2,273	1,521	817	144	1,984	49
December	2,047	641	952	164	1,999	123
January	1,346	207	1,032	74	1,945	177
February	853	---	916	53	3,661	93
March	1,400	1,086	1,033	42	1,791	213
April	2,025	70	960	40	1,808	27
May	3,077	72	463	58	2,907	48
June	4,103	558	644	47	5,065	3
Total	26,694	6,603	9,235	869	27,362	984

NEW JERSEY EXPORTS OF HATCHING EGGS AND POULTRY

July 1, 1952 to June 30, 1953

Destination	Hatcheries Shipping	Eggs	Chicks	Cockerels	Pullets	Hens
Barbados	1	---	40	---	---	---
Brazil	2	---	5,000	---	---	---
Kingston, British West Indies	1	---	1,000	---	---	---
Canada	1	---	156	---	---	---
Central America	1	---	---	---	400	---
Germany	1	100	---	---	---	---
Greece	1	---	1,000	---	---	---
Italy	1	---	600	---	---	---
Curacao,						
Netherlands, West Indies	1	---	100	---	---	---
Puerto Rico	4	---	1,508	1,200	500	---
Siam	2	800	---	3	8	12
Total	16	900	9,404	1,203	908	12

POULTRY INSPECTION AT NEWARK TERMINAL

July 1, 1952 to June 30, 1953

Origin	Truck Loads	Birds	Approximate Weight
Connecticut	792	972,000	3,960,000
Delaware	329	460,000	1,665,000
Maryland	75	84,000	375,000
Massachusetts	60	60,000	300,000
New Jersey	1,486	1,703,000	7,430,000
New York	307	310,000	1,535,000
North Carolina	9	5,000	45,000
Pennsylvania	1,957	2,074,000	9,785,000
Rhode Island	21	21,000	105,000
Virginia	226	233,000	1,215,000
West Virginia	215	125,000	1,075,000
Total	5,477	6,047,000	27,490,000

POULTRY CONDEMNED AT POULTRY TERMINALS

July 1, 1952 to June 30, 1953

1952	Birds Condemned	Approximate Weight in Pounds
July	3,000	12,000
August	2,400	7,800
September	4,000	16,000
October	3,300	13,200
November	3,500	14,400
December	2,400	9,500
1953		
January	4,400	17,500
February	2,100	3,400
March	2,200	3,800
April	4,000	16,000
May	3,100	12,400
June	3,100	12,400
Total	37,600	148,600

PULLORUM DISEASE CONTROL

Again this year the Division obtained the services of reliable men to assist in the pullorum disease control work. The crews were assigned territories and through the concerted efforts of all the men, the largest year in the history of pullorum disease control was completed in a very satisfactory manner both to the poultrymen and to the Division.

Year after year the number of requests for laboratory tube tests in this work has decreased, probably because of the increased confidence poultrymen have in the plate or field test and in its interpretation.

Inspections were made of the pullorum testing agents operating throughout the State in connection with their pullorum rating, a requisite in order to maintain the pullorum clean or pullorum passed rating. As in previous years, the antigen used by the State agents is prepared in the Division laboratory.

During the year 1,025,726 field or plate tests were conducted by both the State and testing agents. Only 537 reactors, 0.052 per cent, were found. This compares favorably with last year when a total of 938,864 field tests conducted resulted in 571 reactors, a reaction of 0.06 per cent. Laboratory or tube tests were made this year on 52,081 samples with 24, 0.05 per cent, reacting, while last year 86,854 laboratory tests disclosed 133, 0.15 per cent, reaction.

FOWL BLOOD-TESTED FOR PULLORUM DISEASE,
NUMBER AND PER CENT REACTING, AND RECORD OF CHECK TESTS MADE, BY COUNTIES
July 1, 1952 to June 30, 1953

County	Fowl Tested In Field	Number Reacting	Per Cent Reacting	Fowl Tested in the Labor- atory	Number Reacting	Per Cent Reacting	Fowl Tested	Fowl Reacting	Per Cent Reacting	Total Laboratory Check Tests Conducted	Number Reacting	Per Cent Re- act- ing
Atlantic	47,035	58	.12	323	---	---	47,358	58	.12	---	---	---
Bergen	5,647	15	.27	936	---	---	6,583	15	.23	---	---	---
Burlington	28,235	6	.02	1,950	---	---	30,185	6	.02	---	---	---
Camden	---	---	---	585	---	---	585	---	---	---	---	---
Cape May	20,485	1	.004	---	---	---	20,485	1	.004	---	---	---
Cumberland	184,686	1	.001	---	---	---	184,686	1	.001	---	---	---
Essex	233	---	---	---	---	---	233	---	---	---	---	---
Gloucester	51,705	---	---	1,637	---	---	53,342	---	---	---	---	---
Hudson	---	---	---	---	---	---	---	---	---	---	---	---
Hunterdon	118,890	144	.12	25,807	3	.01	144,697	147	.10	3	3	100.00
Mercer	68,541	13	.02	11,583	---	---	80,124	13	.02	---	---	---
Middlesex	52,813	2	.003	1,963	---	---	159,390	91	.06	---	---	---
Monmouth	167,465	177	.11	2,295	21	.92	65,146	109	.17	50	---	---
Morris	2,207	---	---	68	---	---	2,275	---	---	---	---	---
Ocean	198,876	67	.03	763	---	---	199,639	67	.03	---	---	---
Passaic	5,837	---	---	662	---	---	6,499	---	---	---	---	---
Salem	44,434	7	.02	21	---	---	44,455	7	.02	---	---	---
Somerset	22,369	3	.01	292	---	---	22,661	3	.01	---	---	---
Sussex	6,268	43	.69	1,952	---	---	8,220	43	.52	---	---	---
Union	---	---	---	150	---	---	150	---	---	---	---	---
Warren	---	---	---	1,094	---	---	1,094	---	---	---	---	---
State	1,025,726	537	.05	52,081	24	.05	1,077,807	561	.05	53	3	5.66
1951 - 52	---	---	---	---	---	---	---	---	---	---	---	---
Total	938,864	571	.06	86,854	133	.15	1,025,718	704	.07	1,493	346	23.17

CATTLE IMPORTED AND RELEASED FOR DAIRY AND BREEDING PURPOSES
July 1952 to June 1953

Origin	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
Alabama	---	---	---	---	---	8	---	---	---	---	---	---	8
California	---	---	---	---	---	---	---	---	---	---	---	2	2
Canada	---	---	---	---	---	---	---	---	33	89	57	30	209
Connecticut	46	26	44	10	---	16	---	---	10	---	---	33	185
Delaware	---	---	---	---	---	---	---	---	14	4	6	13	37
Florida	---	---	---	---	---	---	---	---	---	1	---	1	2
Georgia	---	---	7	---	---	---	---	---	---	---	---	---	7
Idaho	---	10	81	107	49	126	27	26	---	---	---	---	426
Illinois	---	---	---	---	10	3	---	24	6	---	---	---	43
Indiana	---	---	---	---	---	1	2	---	---	---	---	---	3
Iowa	---	5	---	---	---	---	---	3	19	3	---	---	30
Ireland	---	---	126	---	---	---	---	---	3	---	142	---	271
Kansas	---	1	---	5	1	---	---	---	---	---	---	---	7
Kentucky	---	---	---	---	---	---	11	---	2	---	---	---	13
Maryland	7	9	12	31	2	39	40	19	13	4	22	27	225
Massachusetts	1	---	---	2	1	1	1	---	2	1	---	4	13
Michigan	127	138	210	142	60	94	40	39	18	111	79	150	1,208
Minnesota	31	22	25	44	---	27	17	23	---	---	2	17	208
Mississippi	---	---	---	---	---	11	1	1	---	---	1	---	14
Missouri	---	---	---	---	---	4	4	1	12	---	---	1	22
Nebraska	---	13	---	---	---	---	---	---	---	---	---	---	13
New Hampshire	2	1	1	---	---	---	---	---	---	---	---	---	4
New York	242	497	379	441	297	235	158	189	181	313	186	269	3,387
North Dakota	---	---	---	---	---	---	---	2	---	---	---	---	2
Ohio	98	31	27	32	38	104	47	21	51	69	26	50	594
Oklahoma	---	---	---	1	---	---	---	2	1	---	---	---	4
Pennsylvania	103	105	149	111	112	130	104	50	87	39	55	75	1,120
Rhode Island	2	---	---	---	---	---	---	4	1	---	---	---	7
South Dakota	---	---	---	---	---	---	---	12	---	---	---	---	12
Texas	---	---	---	---	---	---	---	---	2	---	---	---	2
Vermont	---	1	---	1	---	1	---	---	---	---	1	1	5
Virginia	12	2	1	15	1	1	24	4	27	2	2	18	109
West Virginia	---	11	---	---	---	---	1	---	---	---	---	2	14
Wisconsin	599	525	733	878	463	497	210	118	212	182	380	299	5,096
Total	1,270	1,397	1,795	1,820	1,034	1,298	687	538	694	818	959	992	13,302

DAIRY AND BREEDING CATTLE UNDER 6 MONTHS OF AGE IMPORTED AND RELEASED BY STATE OF ORIGIN

July 1952 to June 1953

Origin	July/	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
Canada	---	---	---	---	---	---	---	---	2	---	---	---	2
Connecticut	---	---	---	---	---	---	---	---	---	---	---	1	1
Delaware	---	---	---	1	---	---	---	---	---	---	---	---	1
Florida	---	16	---	---	---	---	---	---	---	---	---	---	16
Illinois	---	---	---	---	---	---	---	---	1	---	---	---	1
Maryland	---	---	---	---	---	---	---	1	2	2	---	---	5
New Hampshire	---	---	---	1	---	---	---	---	---	---	---	---	1
New York	---	1	---	3	1	---	---	3	---	---	---	3	11
Pennsylvania	3	---	2	1	1	4	2	---	3	3	2	3	24
Vermont	1	---	1	---	1	---	---	---	---	---	---	---	3
Total	4	17	3	6	3	4	2	4	8	5	2	7	65

FEEDER STEERS IMPORTED AND RELEASED BY STATE OF ORIGIN

July 1952 to June 1953

Origin	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
Delaware	15	---	---	---	---	---	---	---	---	---	---	---	15
Florida	---	---	8	---	---	---	---	---	---	---	---	---	8
Idaho	---	---	13	112	70	---	---	---	---	---	---	---	195
Kansas	---	---	---	---	---	---	---	---	---	---	---	46	46
Lancaster St. Yds.	78	51	238	123	150	133	83	17	52	171	155	217	1,468
Maryland	---	---	---	---	---	5	---	---	---	5	---	---	10
Ohio	---	---	---	---	---	---	---	---	---	---	---	20	20
Oklahoma	---	---	47	100	451	336	---	46	---	---	---	---	980
Pennsylvania	46	---	23	1	---	31	---	---	---	4	---	---	105
Tennessee	---	---	14	---	---	---	---	---	---	---	---	---	14
Texas	---	---	---	---	---	---	---	41	---	---	---	---	41
Virginia	---	24	---	---	---	---	---	---	---	---	---	---	24
West Virginia	21	25	---	---	---	---	---	---	---	---	---	---	46
Total	160	100	343	336	671	505	83	104	52	180	155	283	2,972

SUMMARY OF INSHIPMENTS

July 1952 to June 1953

	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
Total Cattle Imported	1,270	1,397	1,795	1,820	1,034	1,298	687	538	694	818	959	992	13,302
Calves Under 6 months Imported	4	17	3	6	3	4	2	4	8	5	2	7	65
Total Dairy and Breeding Cattle Imported July 1952 to June 1953	1,274	1,414	1,798	1,826	1,037	1,302	689	542	702	823	961	999	13,367
Total Dairy Cattle Imported July 1951 to June 1952	2,119	1,587	1,580	1,821	1,482	979	1,000	674	929	1,137	1,072	1,409	15,789
Feeder Steers Imported July 1952 to June 1953	160	100	343	336	671	505	83	104	52	180	155	283	2,972
Feeder Steers Imported July 1951 to June 1952	243	159	223	345	233	142	344	208	308	466	503	602	3,776
Total Dairy Cattle and Feeder Steers Imported July 1952 to June 1953	1,434	1,514	2,141	2,162	1,708	1,807	772	646	754	1,003	1,116	1,282	16,339
Total Dairy Cattle and Feeder Steers Imported July 1951 to June 1952	2,362	1,746	1,803	2,166	1,715	1,121	1,344	882	1,237	1,603	1,575	2,011	19,565

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RECORD OF BLOOD TESTS MADE ON INSHIPPED ANIMALS

July 1, 1952 to June 30, 1953

Origin	Lots Bled	Cattle Bled	Reactors Number	Resulting Percentage
Alabama	1	8	.....	.....
California	1	2	.....	.....
Canada	21	210	.....	.....
Colorado	2	5	.....	.....
Connecticut	19	216	1	.45
Delaware	8	40	.....	.....
Florida	3	3	.....	.....
Georgia	2	7	.....	.....
Illinois	9	37	.....	.....
Indiana	1	1	.....	.....
Iowa	6	31	.....	.....
Ireland	44	271	.....	.....
Kansas	2	6	.....	.....
Kentucky	4	15	.....	.....
Louisiana	1	1	.....	.....
Maryland	51	205	.....	.....
Massachusetts	10	12	.....	.....
Michigan	71	1,194	3	.25
Minnesota	14	199	.....	.....
Mississippi	5	16	.....	.....
Missouri	6	26	.....	.....
New Hampshire	3	4	.....	.....
New York	405	3,295	36	1.09
North Dakota	2	2	.....	.....
Ohio	45	544	4	.74
Oklahoma	3	5	.....	.....
Pennsylvania	234	1,124	4	.35
Rhode Island	4	7	.....	.....
South Dakota	1	12	.....	.....
Tennessee	1	2	.....	.....
Texas	3	4	.....	.....
Vermont	4	4	.....	.....
Virginia	36	156	1	.64
West Virginia	3	15	.....	.....
Wisconsin	249	5,215	10	.19
Total	1,274	12,894	59	.46

In addition to the above, 15 lots of 453 Idaho cattle were shipped in and tested on arrival and 17, 3.75 per cent, reactors were disclosed.

Following is a comparison of the number of cattle shipped into New Jersey during the past five years:

1943-49	1949-50	1950-51	1951-52	1952-53
21,445	18,315	19,595	19,555	16,339

These figures include dairy, breeding and feeding cattle and calves.

STATE DEPARTMENT OF AGRICULTURE

CATTLE SHIPPED OUT OF NEW JERSEY

July 1952 to June 1953

	Lots From Herds Under Supervision	Animals From Herds Under Supervision
1952		
July	88	239
August	55	169
September	343	553
October	161	261
November	147	196
December	83	152
1953		
January	55	148
February	49	142
March	146	327
April	235	489
May	170	253
June	94	213
Totals	1,626	3,142

BUREAU OF TUBERCULOSIS ERADICATION

At the close of the 1951-52 fiscal year the bovine tuberculosis situation was:

Total tests	232,511
Reactors disclosed	234
Percentage of reaction	0.10
Infected herds carried at end of year	88

At the close of the 1952-53 fiscal year the picture was:

Total tests	239,489
Reactors disclosed	176
Percentage of reaction	0.07
Infected herds carried at end of year	76

There were 6,878 more tests conducted this year than during the 1951-52 fiscal year resulting in 58 fewer reactors, 0.03 per cent less reactors. At the end of this year there are 12 fewer infected herds compared with the previous year. The 0.07 per cent infection shown for the year was the lowest incidence of disease reported since the beginning of the tuberculosis eradication program.

While this is encouraging in many ways, it is doubtful whether this trend can continue indefinitely. As mentioned many times, New Jersey is a cattle importing state. With the so-called normal number of reactors found plus the inexplicable breaks encountered in herds from time to time, the incidence of disease will vary. For some years there may be record low percentages of reaction followed perhaps in some succeeding year by a marked increase. The percentage of reactors in any year depends upon the number and numerical size of the outbreaks encountered.

During the year there were 176 reactors disclosed of which 74.43 per cent was encountered unexpectedly in previously accredited herds. The remainder, 25.57 per cent, was disclosed in initial tests of herds and herds previously designated as infected. Of the 176 reactors 41 were of the herd addition variety and were not eligible for indemnity. Of these herd addition cases, several reacted at the time of the regular herd tests and beyond the time for the 60 day guarantee retest period. Consequently, the owners rather than dealers suffered the loss. There were, however, at least three additions reacting within 60 days of the time of their importation. All showed extensive to generalized lesions of tuberculosis when slaughtered.

The main problems of tuberculosis eradication, therefore, are the sporadic disclosure of reactions in accredited herds, the reaction of herd additions at the time of their first, second or third tests in the State and a few cases of persistent reaction disclosures in infected herds. It might be said that a

large majority of the reactions inexplicably disclosed in accredited herds do not show macroscopic evidence of infection at the time of slaughter and in practically all cases the herds are easily returned to their accredited status after the indicated number of tests.

Herd additions, because of the comparatively large number of imports, might be, and often are, blamed for transmitting the disease to native animals. This was proven on two occasions during the year and is not surprising since extensive herd outbreaks from time to time are noted in the states from which most New Jersey dairy cattle are purchased. This is especially true of New York and Wisconsin, two states which led in the export of cattle to New Jersey for the year.

Twenty-two reactors were found in Dover in a herd that has persistently shown reactors since January 1952. Changes in the stabling arrangement at this farm have been made which should be beneficial. The barns were given a thorough supervised cleaning and disinfecting following the last test.

A herd in Pittstown has disclosed four reactors. This herd was assembled of Michigan imports in 1951. Six reactors were found in March 1952 and four in July 1952. This is an example of a herd comprised of imports which disclosed reactions soon after their importation.

In a herd in Lafayette nine reactors were found. This herd was assembled during the past year through purchases from dealers and local farms and is another example of reactions among recent imports.

Three reactors were found in a herd in Long Valley consisting of nine animals, mostly self-contained. Following the sale for slaughter of an unwanted animal, a report was received from the Federal Meat Inspection Service stating that the animal presented lesions of tuberculosis. A retest of the herd disclosed the three reactors.

One reactor was found in a herd in Medford. There have been 112 reactors in this herd since 1944. At the time of the September 1952 test, when the one reactor which later showed extensive lesions was found, it was recommended that the whole herd be sold for slaughter as it was of little value for efficient milk production. A few animals of the herd were sold but they did not present evidence of being affected and the herd has since passed two clean tests.

A test of a herd in Newton showed seven reactors. This herd was recently assembled through purchases from dealers and local farms and has had three tests which disclosed three, two and two reactions respectively. The

premises have since been investigated and thoroughly cleaned and disinfected so improvement in test results is anticipated.

A high percentage of No Visible Lesion cases reported after post mortem examinations of reactors continues but, as stated many times, this situation should not be looked upon as alarming. The percentage of these No Visible Lesions has increased proportionately as the need for making initial tests of herds has decreased and can be expected to increase even more in this time of low per cent incidence of disease.

For a number of years the testing done by regular personnel showed a very satisfactory increase each succeeding year but during the past year testing by private practitioners increased considerably.

1951-1952—Tests by practitioners—76.45% State 18.55% Federal 5.00%

1952-1953—Tests by practitioners—84.09% State 12.08% Federal 3.33%

This increase in practitioner testing is largely because the State tuberculosis staff must perform services in other fields.

During the year there were two anthrax outbreaks, vesicular stomatitis outbreaks on three farms and a number of cases of vesicular exanthema. All of these accounted for a heavy drain on the tuberculosis personnel. However, eliminating these emergencies, it is hoped that more and more testing can be done by staff personnel and every effort will be put forth to encourage and bring this about.

Personnel

There were only two changes in personnel in the tuberculosis control field. Dr. Edward P. Newman, Jr. joined the force July 1 and was assigned as supervisor in the Camden-Gloucester-Cumberland-Atlantic County area. He resigned on November 30 to engage in practice. Most of the time he spent in State service was devoted to the vesicular exanthema control field. As yet his position has not been filled. In the meantime the territory has been covered as well as possible by Doctors Armstrong and Bonese, supervisors in adjacent territories. However, a veterinarian who could devote his full time to supervisory duties in this territory is needed.

In November Dr. Robert Simms, supervisor in the Morris-Passaic County area, underwent an operation and therefore could not carry on his testing and supervisory duties. Dr. C. Kenneth Jewell, supervisor in an adjoining territory, capably undertook the supervisory work in Dr. Simms' territory. The need for a full-time supervisor in this territory was also evident and Dr. T. A. Newlin who joined the force on June 15 now holds this position.

Dr. Newlin had been engaged in practice in Dover but had given up his practice. He has had considerable experience in tuberculosis control and is well acquainted with the dairy and livestock interests in the area.

Therefore, our tuberculosis control personnel as of the end of the year follows:

State— Dr. M. K. Mann—Warren-Hunterdon County area
 Dr. H. A. Roney—Sussex-Warren County area
 Dr. R. A. Wilson—Sussex County area
 Dr. T. A. Newlin—Morris-Passaic County area
 Dr. C. K. Jewell—Somerset-Middlesex County area
 Dr. B. F. Clapham—Mercer-Middlesex County area
 Dr. E. L. Brower—Monmouth-Ocean-Middlesex County area
 Dr. M. J. Bonese—Burlington-Ocean County area
 Dr. R. S. Armstrong—Salem-Cape May County area
 Vacant—Camden-Gloucester-Cumberland-Atlantic County area
 Federal—Dr. S. D. Bamber—Hunterdon County area
 Dr. G. J. Gruenewald } Bergen-Hudson-Essex-Union
 Dr. H. C. King } Middlesex County area

Reaccreditation of Counties

Nine counties qualified and were listed for reaccreditation for a two-year period as free from bovine tuberculosis.

COUNTIES LISTED FOR REACCREDITATION

Middlesex			
July 1, 1950	615 herds		6,380 cattle
July 1, 1952	502 herds		6,652 cattle
	Decrease	113 herds	Increase 272 cattle
Monmouth			
July 1, 1950	907 herds		8,802 cattle
July 1, 1952	795 herds		9,863 cattle
	Decrease	112 herds	Increase 1,061 cattle
Ocean			
July 1, 1950	196 herds		1,152 cattle
July 1, 1952	139 herds		1,149 cattle
	Decrease	57 herds	Decrease 3 cattle
Hunterdon			
August 1, 1950	1,677 herds		29,416 cattle
August 1, 1952	1,476 herds		29,310 cattle
	Decrease	201 herds	Decrease 106 cattle
Gloucester			
September 1, 1950	817 herds		5,881 cattle
September 1, 1952	712 herds		6,090 cattle
	Decrease	105 herds	Increase 209 cattle

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Bergen					
March 1, 1951	111 herds		1,391 cattle		
March 1, 1953	97 herds		1,293 cattle		
	Decrease	14 herds	Decrease	98 cattle	
Essex					
May 1, 1951	52 herds		972 cattle		
May 1, 1953	38 herds		786 cattle		
	Decrease	14 herds	Decrease	186 cattle	
Sussex					
June 1, 1951	997 herds		33,854 cattle		
June 1, 1953	946 herds		36,096 cattle		
	Decrease	51 herds	Increase	2,242 cattle	
Warren					
June 1, 1951	952 herds		26,229 cattle		
June 1, 1953	934 herds		27,949 cattle		
	Decrease	18 herds	Increase	1,720 cattle	

Summary for 1952 - 53

On June 30 there were 215,660 head of cattle in 10,415 herds under supervision, a decrease of 268 herds and an increase of 7,701 cattle from last year.

During the year initial tests were conducted on 756 herds of 5,529 cattle, resulting in the disclosure of 12, or 0.22 per cent, reactors. The percentage of reaction disclosed on tests of cattle added to herds under supervision was 1.15, or 42 reactors, in 3,642 cattle tested.

A total of 239,489 tuberculin tests were conducted resulting in 176 reactors, 0.07 per cent reaction, compared with 0.10 per cent a year ago. Of the 176 reactors disclosed, 135 were eligible for indemnity, 14 purebred and 121 grade animals.

10-YEAR SUMMARY OF TUBERCULIN TESTING

	Herds Under Supervision	Animals Under Supervision	Tests Conducted	Reactors Resulting	Per Cent Reaction
1943-44	16,212	216,014	244,496	1,030	.42
1944-45	15,803	208,459	232,087	3,138	1.35
1945-46	14,867	201,349	256,183	962	.38
1946-47	14,347	202,034	255,447	949	.37
1947-48	13,478	201,238	248,997	411	.17
1948-49	12,692	200,817	236,937	378	.16
1949-50	11,962	205,105	230,187	242	.11
1950-51	11,273	200,496	227,980	298	.13
1951-52	10,683	207,959	232,611	234	.10
1952-53	10,415	215,660	239,489	176	.07

STATE DEPARTMENT OF AGRICULTURE

There were 13,367 head of dairy cattle imported this year. Of these 3,642 were retested as herd additions, disclosing 42 reactors. In 1951-52 15,789 head of dairy cattle were imported and only 3,640 were subjected to herd addition tests, resulting in 42 reactors.

STATE INDEMNITY PAID FOR REACTORS TO TUBERCULIN TEST

July 1, 1952 to June 30, 1953

Class of Cattle	Animals	Amount Paid	Average State Indemnity Paid Per Head
Registered	14	\$ 2,100.00	\$ 150.00
Grade	121	8,855.98	73.19
Registered and Grade	135	10,955.98	81.16

SALVAGE RECEIVED BY OWNERS FOR REACTORS TO TUBERCULIN TEST

July 1, 1952 to June 30, 1953

Class of Cattle	Animals	Amount Paid	Average Salvage Received Per Head
Registered	14	\$ 2,272.39	\$ 162.31
Grade	121	17,235.51	142.44
Registered and Grade	135	\$19,507.90	144.50

FEDERAL INDEMNITY PAID FOR REACTORS TO TUBERCULIN TEST

July 1, 1952 to June 30, 1953

Class of Cattle	Animals	Amount Paid	Average Federal Indemnity Paid Per Head
Registered	14	\$ 700.00	\$ 50.00
Grade	121	2,963.23	24.49
Registered and Grade	135	\$ 3,663.23	27.14
Total amount received by owners for reactors			\$34,127.11
(Sum of salvage, Federal and State Indemnity)			
Average amount received per head by owners for reactors			\$ 252.79

State indemnity paid during this year for reactors condemned increased from an average of \$75.97 last year to \$81.16. During the year 13,367 dairy cattle and 2,972 steers, a total of 16,339 head, were imported, 3,326 less than the 19,565 imported during last fiscal year.

THIRTY-EIGHTH ANNUAL REPORT

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CATTLE TUBERCULIN TESTED UNDER ACCREDITED HERD PLAN

July 1, 1952 to June 30, 1953

INITIAL TESTS

	Lots	Registered Animals	Grade Animals	Total
Tested	756	415	5,114	5,529
Reacted	---	---	12	12
	Percentage of Reactors .22			

HERD ADDITION TESTS

Tested	745	213	3,429	3,642
Reacted	---	1	41	42
	Percentage of Reactors 1.15			

OTHER TESTS

Tested	10,623	37,708	192,610	230,318
Reacted	---	11	111	122
	Percentage of Reactors .05			
Tested			239,489	
Reacted			176	
Percentage of Reactors			.07	
Percentage of Reactors Based on Cattle Population			.08	

TOTAL STATE INDEMNITY PAID FOR TUBERCULIN TEST REACTORS

July 1, 1952 to June 30, 1953

County	
Atlantic	\$ ---
Bergen	---
Burlington	373.42
Camden	---
Cape May	---
Cumberland	656.68
Essex	---
Gloucester	75.00
Hudson	---
Hunterdon	1,125.00
Mercer	150.00
Middlesex	---
Monmouth	293.68
Morris	2,282.20
Ocean	---
Passaic	---
Salem	1,575.00
Somerset	150.00
Sussex	2,775.00
Union	---
Warren	1,500.00
State	<u>\$10,955.98</u>

STATE DEPARTMENT OF AGRICULTURE

TOTAL STATE INDEMNITY PAID FOR TUBERCULIN TEST REACTORS
FROM BEGINNING OF ACCREDITED HERD WORK IN 1916
TO JUNE 30, 1953

County	
Atlantic	\$ 10,229.81
Bergen	37,793.59
Burlington	529,482.90
Camden	19,378.26
Cape May	10,954.64
Cumberland	84,449.15
Essex	40,686.29
Gloucester	66,856.56
Hudson	4,455.78
Hunterdon	374,845.62
Mercer	191,094.81
Middlesex	85,446.84
Monmouth	141,756.73
Morris	162,395.24
Ocean	34,199.08
Passaic	37,153.60
Salem	380,171.32
Somerset	228,491.09
Sussex	1,053,342.92
Union	40,867.91
Warren	398,297.19
State	<hr/> \$3,932,349.33

HERDS AND CATTLE UNDER STATE AND FEDERAL SUPERVISION

TUBERCULIN TESTS MADE AND REACTORS DISCLOSED

County	Herds Under Supervision June 30, 1953	Herds Fully Accredited June 30, 1953	Cattle Under Supervision, June 30, 1953			Tuberculin Tests Made July 1, 1952 to June 30, 1953	Reactors Disclosed	Per cent of Infection
			Reg.	Gr.	Total			
Atlantic	160	136	115	560	675	439	----	----
Bergen	97	83	177	1,080	1,257	1,296	----	----
Burlington	918	818	3,111	23,655	26,766	27,303	11	.04
Camden	184	161	482	1,520	2,002	2,007	----	----
Cape May	81	74	98	403	501	514	----	----
Cumberland	657	575	721	6,410	7,131	7,435	5	.07
Essex	38	38	217	569	786	838	----	----
Gloucester	722	675	998	5,785	6,783	7,086	1	.01
Hudson	2	2	----	27	27	29	----	----
Hunterdon	1,475	1,360	5,208	26,527	31,735	33,372	16	.05
Mercer	413	394	2,465	6,003	8,468	9,229	2	.02
Middlesex	487	436	1,084	5,644	6,728	9,392	1	.01
Monmouth	762	706	3,430	6,853	10,283	11,761	6	.05
Morris	587	539	2,765	8,642	11,407	12,874	35	.27
Ocean	147	130	101	1,149	1,250	1,361	----	----
Passaic	103	90	41	733	774	733	----	----
Salem	971	861	1,336	18,118	19,454	22,509	29	.13
Somerset	670	624	4,586	9,750	14,336	15,206	5	.03
Sussex	949	835	5,219	30,840	36,059	41,284	45	.11
Union	58	50	18	1,265	1,283	2,408	----	----
Warren	934	856	1,866	26,089	27,955	32,413	20	.06
State	10,415	9,443	34,038	181,622	215,660	239,489	176	.07

STATE DEPARTMENT OF AGRICULTURE

INFECTED HERD RECORD

County	Infected Herds June 30, 1953	Cattle June 30, 1953
Atlantic	----	----
Bergen	----	----
Burlington	7	365
Camden	----	----
Cape May	----	----
Cumberland	3	104
Essex	----	----
Gloucester	1	50
Hudson	----	----
Hunterdon	10	304
Mercer	2	120
Middlesex	1	37
Monmouth	4	262
Morris	8	539
Ocean	----	----
Passaic	----	----
Salem	21	629
Somerset	4	163
Sussex	10	413
Union	----	----
Warren	5	268
State	76	3,254

CATTLE TESTED UNDER THE ACCREDITED HERD PLAN BY VETERINARIANS ON THE STAFF
OF THE NEW JERSEY DEPARTMENT OF AGRICULTURE

July 1, 1952 to June 30, 1953

	INITIAL TESTS					HERD ADDITION TESTS					OTHER TESTS				
	Lots	Tested Reg.	Gr.	Reactors Reg.	Gr.	Lots	Tested Reg.	Gr.	Reactors Reg.	Gr.	Lots	Tested Reg.	Gr.	Reactors Reg.	Gr.
1952															
July	3	14	5	---	---	---	---	---	---	---	15	6	326	---	4
August	3	26	7	---	---	2	1	2	---	---	14	75	476	---	---
September	4	---	30	---	---	---	---	8	---	---	165	8	1,435	---	10
October	11	---	57	---	---	---	---	---	---	---	154	248	1,227	---	---
November	3	---	12	---	---	---	---	9	---	---	164	2,497	2,086	---	---
December	6	3	33	---	---	---	6	13	---	---	99	219	2,180	---	1
1953															
January	13	22	66	---	---	1	---	8	---	---	185	829	3,055	---	2
February	17	30	25	---	---	1	---	12	---	---	148	263	1,944	---	1
March	16	25	28	---	---	2	---	28	---	1	189	1,346	3,710	---	2
April	8	2	50	---	---	3	---	10	---	---	97	947	2,159	---	---
May	20	3	51	---	---	---	1	---	---	---	157	487	1,014	---	---
June	18	18	70	---	---	---	---	---	---	---	132	361	1,344	---	2
Total	122	143	434	---	---	9	8	90	---	1	1,519	7,286	20,956	---	22
Per Cent Reaction				---	---					1.11					.10
Average Per Cent Reaction									1.02						.08

THIRTY-EIGHTH ANNUAL REPORT

CATTLE TESTED IN NEW JERSEY UNDER THE ACCREDITED HERD PLAN BY VETERINARIANS

ON THE STAFF OF THE U. S. DEPARTMENT OF AGRICULTURE

July 1, 1952 to June 30, 1953

	INITIAL TESTS					HERD ADDITION TESTS					OTHER TESTS				
	Lots	Tested Reg.	Gr.	Reactors Reg.	Gr.	Lots	Tested Reg.	Gr.	Reactors Reg.	Gr.	Lots	Tested Reg.	Gr.	Reactors Reg.	Gr.
1952															
July	4	---	8	---	---	---	---	14	---	---	23	2	445	---	---
August	4	---	8	---	---	---	---	3	---	---	24	---	320	---	---
September	---	---	---	---	---	---	---	10	---	---	30	---	357	---	---
October	4	---	20	---	---	---	---	---	---	---	8	---	258	---	---
November	---	---	---	---	---	---	---	4	---	---	20	---	233	---	---
December	3	13	61	---	---	---	---	2	---	---	50	58	1,664	---	---
1953															
January	4	2	9	---	---	---	---	8	---	---	52	163	929	---	---
February	4	---	15	---	---	---	---	---	---	---	26	58	313	---	---
March	10	---	30	---	---	---	---	7	---	---	75	16	1,634	---	---
April	---	---	---	---	---	---	---	6	---	1	23	63	617	---	6
May	5	---	79	---	---	---	---	---	---	---	91	187	1,228	---	1
June	5	1	25	---	---	---	---	---	---	---	26	3	309	---	---
Totals	43	16	255	---	---	---	---	54	---	1	448	550	8,307	---	7
Per Cent Reaction				---	---				---	1.85				---	.08
Average Per Cent				---	---				---	1.85				---	.08

CATTLE TESTED IN NEW JERSEY UNDER THE ACCREDITED HERD PLAN BY VETERINARIANS

ACCREDITED BY THE U. S. DEPARTMENT OF AGRICULTURE

July 1, 1952 to June 30, 1953

	INITIAL TESTS					HERD ADDITION TESTS					OTHER TESTS				
	Lots	Tested Reg.	Gr.	Reactors Reg.	Gr.	Lots	Tested Reg.	Gr.	Reactors Reg.	Gr.	Lots	Tested Reg.	Gr.	Reactors Reg.	Gr.
1952															
July	19	---	117	---	---	60	16	85	---	---	102	399	825	---	---
August	8	26	17	---	---	38	6	155	---	1	68	260	705	---	1
September	7	1	111	---	5	68	6	324	---	3	360	1,322	6,288	---	---
October	57	11	578	---	---	57	7	325	---	4	818	1,295	16,301	1	3
November	41	15	467	---	---	71	29	440	---	3	849	3,432	18,918	1	14
December	41	4	268	---	---	15	7	312	---	4	678	2,608	13,175	1	6
1953															
January	80	44	686	---	2	120	57	452	---	2	1,120	3,265	20,665	3	10
February	53	62	521	---	1	39	37	178	---	5	960	3,879	21,693	4	19
March	101	66	767	---	---	87	12	417	---	11	1,471	4,209	27,321	1	12
April	61	12	301	---	4	45	16	241	---	4	1,009	6,156	21,442	---	14
May	79	14	439	---	---	56	3	196	1	1	871	2,246	13,544	---	1
June	44	1	153	---	---	80	9	160	---	1	350	801	2,470	---	2
Total	591	256	4,425	---	12	736	205	3,285	1	39	8,656	29,872	163,347	11	82
Per Cent Reaction					.27				.49	1.19				.04	.05
Average Per Cent					.26				1.15					.05	

SIX YEAR SUMMARY SHOWING PER CENT OF TUBERCULOSIS INFECTION FOUND ANNUALLY

County	July 1952 to June 1953					July 1951 to June 1952				
	Animals Under Supervision	Animals Reacting	Per Cent Reaction on Total Cattle Pop- ulation	Tests Made	Per Cent Reaction On Tests Made	Animals Under Supervision	Animals Reacting	Per Cent Reaction on Total Cattle Pop- ulation	Tests Made	Per Cent Reaction On Tests Made
Atlantic	675	---	---	439	---	652	4	.62	1,078	.37
Bergen	1,257	---	---	1,296	---	1,268	---	---	1,421	---
Burlington	26,766	11	.04	27,303	.04	25,419	47	.18	28,284	.17
Camden	2,002	---	---	2,007	---	1,948	---	---	2,008	---
Cape May	501	---	---	514	---	496	---	---	498	---
Cumberland	7,131	5	.07	7,435	.07	6,905	13	.19	7,543	.17
Essex	786	---	---	838	---	775	---	---	784	---
Gloucester	6,783	1	.01	7,086	.01	6,587	1	.02	7,142	.01
Hudson	27	---	---	29	---	29	---	---	---	---
Hunterdon	31,735	16	.05	33,372	.05	30,461	16	.05	31,449	.05
Mercer	8,468	2	.02	9,229	.02	8,551	2	.02	9,181	.02
Middlesex	6,728	1	.01	9,392	.01	6,649	---	---	10,246	---
Monmouth	10,283	6	.06	11,761	.05	9,863	2	.03	11,260	.02
Morris	11,407	35	.31	12,874	.27	11,403	54	.47	12,514	.43
Ocean	1,250	---	---	1,361	---	1,149	---	---	1,108	---
Passaic	774	---	---	733	---	901	---	---	1,024	---
Salem	19,454	29	.15	22,509	.13	18,409	13	.07	20,361	.06
Somerset	14,336	5	.03	15,206	.03	13,690	6	.04	15,194	.04
Sussex	36,059	45	.12	41,284	.11	34,094	60	.18	40,866	.15
Union	1,283	---	---	2,408	---	1,755	---	---	2,872	---
Warren	27,955	20	.07	32,413	.06	26,955	16	.06	27,778	.06
State	215,660	176	.08	239,489	.07	207,959	234	.11	232,611	.11

SIX-YEAR SUMMARY SHOWING PER CENT OF TUBERCULOSIS INFECTION FOUND ANNUALLY

County	July 1950 to June 1951					July 1949 to June 1950				
	Animals Under Supervision	Animals Reacting	Per Cent Reaction on Total Cattle Pop- ulation	Tests Made	Per Cent Reaction on Tests Made	Animals Under Supervision	Animals Reacting	Per Cent Reaction on Total Cattle Pop- ulation	Tests Made	Per Cent Reaction on Tests Made
Atlantic	538	4	.74	914	.44	572	2	.35	1,102	.18
Bergen	1,382	1	.07	1,450	.07	1,645	2	.12	1,994	.10
Burlington	24,340	46	.19	26,208	.18	24,701	46	.19	27,222	.17
Camden	1,697	---	---	1,889	---	1,772	---	---	1,943	---
Cape May	541	---	---	1,297	---	503	---	---	507	---
Cumberland	6,829	12	.18	6,772	.18	6,917	15	.22	7,859	.19
Essex	972	---	---	987	---	1,005	---	---	1,154	---
Gloucester	5,939	5	.08	6,700	.07	5,942	6	.10	6,579	.09
Hudson	35	---	---	63	---	32	---	---	32	---
Hunterdon	28,969	37	.13	31,966	.12	29,416	29	.10	31,267	.09
Mercer	8,299	1	.01	8,746	.01	9,323	7	.08	8,280	.08
Middlesex	6,557	4	.06	9,471	.04	6,380	7	.11	9,894	.07
Monmouth	9,413	42	.45	10,673	.39	8,823	12	.14	9,991	.12
Morris	11,433	2	.02	12,659	.02	11,492	2	.02	11,263	.02
Ocean	1,149	---	---	1,201	---	1,193	2	.17	1,274	.16
Passaic	987	---	---	1,018	---	1,565	1	.06	1,098	.09
Salem	16,997	38	.22	21,279	.18	16,871	32	.19	21,737	.15
Somerset	12,829	16	.12	14,429	.11	13,002	5	.04	14,242	.04
Sussex	33,873	59	.17	39,144	.15	35,655	49	.14	41,586	.12
Union	1,636	---	---	2,739	---	1,796	1	.06	2,324	.04
Warren	26,081	31	.12	28,365	.11	26,500	24	.09	28,739	.08
State	200,496	293	.15	227,980	.13	205,105	242	.12	230,187	.11

SIX YEAR SUMMARY SHOWING PER CENT OF TUBERCULOSIS INFECTION FOUND ANNUALLY

County	July 1948 to June 1949					July 1947 to June 1948				
	Animals Under Supervision	Animals Reacting	Per Cent Reaction on Total Cattle Pop- ulation	Tests Made	Per Cent Reaction on Tests Made	Animals Under Supervision	Animals Reacting	Per Cent Reaction on Total Cattle Pop- ulation	Tests Made	Per Cent Reaction on Tests Made
Atlantic	567	9	1.59	1,279	.70	674	2	.30	717	.28
Bergen	1,778	27	1.52	2,132	1.27	2,122	1	.05	2,504	.04
Burlington	24,116	38	.16	26,065	.15	23,102	62	.27	27,596	.22
Camden	1,689	1	.06	1,954	.05	1,706	2	.12	2,079	.10
Cape May	511	---	---	506	---	558	1	.18	484	.21
Cumberland	6,985	5	.07	7,688	.07	6,358	12	.19	7,607	.16
Essex	1,076	---	---	1,088	---	1,133	---	---	1,057	---
Gloucester	5,758	5	.09	6,144	.08	5,706	1	.02	5,597	.02
Hudson	32	---	---	39	---	42	---	---	---	---
Hunterdon	28,942	28	.10	31,431	.09	30,570	47	.15	30,461	.15
Mercer	9,138	4	.04	9,633	.04	8,791	20	.23	10,555	.19
Middlesex	6,945	8	.12	9,872	.08	6,845	7	.10	9,970	.07
Monmouth	8,202	11	.13	9,742	.11	8,168	5	.06	9,496	.05
Morris	11,405	1	.01	12,641	.01	12,422	18	.14	14,471	.12
Ocean	1,194	---	---	1,185	---	1,314	3	.23	1,653	.18
Passaic	1,744	---	---	1,503	---	1,855	1	.05	2,761	.04
Salem	16,371	68	.42	22,982	.30	16,862	67	.40	22,029	.30
Somerset	12,619	12	.10	13,610	.09	12,397	9	.07	13,449	.07
Sussex	34,493	106	.31	45,367	.23	33,935	118	.35	55,145	.21
Union	1,907	---	---	2,909	---	2,127	---	---	2,697	---
Warren	25,345	55	.22	29,167	.19	24,451	35	.14	28,669	.12
State	200,817	378	.19	236,937	.16	201,238	411	.20	248,997	.17

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GOATS

TUBERCULOSIS

County	Under Supervision				Fully Accredited				Number Tested			
	June 30, 1953				June 30, 1953				July 1952 to June 1953			
	Herds	Reg.	Grade	Total	Herds	Reg.	Grade	Total	Herds	Reg.	Grade	Total
Atlantic	15	20	82	102	11	20	70	90	12	22	71	93
Bergen	23	16	92	108	17	16	77	93	16	14	71	85
Burlington	15	---	138	138	13	---	95	95	13	---	86	86
Camden	7	---	26	26	2	---	13	13	6	---	25	25
Cape May	2	1	3	4	1	1	---	1	2	1	3	4
Cumberland	5	---	38	38	3	---	32	32	3	---	32	32
Essex	7	1	65	66	5	1	65	66	3	---	53	53
Gloucester	28	5	69	74	14	---	50	50	23	5	57	62
Hudson	---	---	---	---	---	---	---	---	---	---	---	---
Hunterdon	34	237	103	340	21	230	87	317	29	416	90	506
Mercer	7	5	18	23	7	5	18	23	7	5	18	23
Middlesex	11	19	42	61	8	17	43	60	8	12	14	26
Monmouth	24	45	67	112	18	39	50	89	21	34	68	102
Morris	44	46	219	265	37	47	208	255	42	41	252	293
Ocean	6	---	14	14	6	---	14	14	2	---	6	6
Passaic	16	89	39	128	12	89	32	121	7	33	15	48
Salem	9	3	13	16	5	3	13	16	7	3	13	16
Somerset	31	303	82	385	21	304	53	357	29	575	89	664
Sussex	3	---	45	45	1	---	41	41	2	---	43	43
Union	4	10	8	18	4	10	8	18	3	10	5	15
Warren	12	26	84	110	7	24	73	97	9	---	81	81
State	303	826	1,247	2,073	213	806	1,042	1,848	244	1,171	1,092	2,263

BRUCELLOSIS

Atlantic	17	25	80	105	12	24	72	96	13	26	71	97
Bergen	21	10	77	87	13	14	56	70	11	14	50	64
Burlington	17	12	92	104	6	---	72	72	7	---	71	71
Camden	5	---	15	15	2	---	11	11	2	---	9	9
Cape May	2	1	3	4	1	1	---	1	2	---	4	4
Cumberland	4	13	21	34	3	13	29	42	2	30	1	31
Essex	6	37	32	69	6	40	29	69	6	---	69	69
Gloucester	22	---	55	55	5	---	16	16	20	---	49	49
Hudson	1	---	1	1	---	---	---	---	1	---	1	1
Hunterdon	37	10	320	330	18	4	283	287	25	4	463	467
Mercer	12	8	20	28	8	6	10	16	12	6	32	38
Middlesex	9	19	41	60	6	18	35	53	6	10	16	26
Monmouth	19	44	40	84	13	28	37	65	18	41	41	82
Morris	48	82	192	274	35	78	159	237	30	46	183	229
Ocean	5	4	12	16	1	---	3	3	7	53	35	88
Passaic	13	70	55	125	9	70	44	114	8	17	48	65
Salem	7	---	9	9	3	---	4	4	5	---	8	8
Somerset	32	67	330	397	18	47	268	315	16	305	263	568
Sussex	4	3	35	38	4	3	35	38	4	2	73	75
Union	5	9	12	21	4	11	7	18	3	8	6	14
Warren	11	64	14	78	7	63	7	70	7	19	19	38
State	297	478	1,456	1,934	174	420	1,177	1,597	205	581	1,512	2,093

BUREAU OF BRUCELLOSIS CONTROL AND ERADICATION

During the fiscal year 1952-1953, the cooperative brucellosis eradication program in New Jersey progressed at a greater rate than previously experienced. At the end of this year, 7,792 herds, 74.8 per cent of the herds in the State, containing 177,610 cattle, 82.4 per cent of the State's cattle, were engaged in some phase of the brucellosis eradication program. The analagous figures at the end of the previous fiscal year were 7,105 herds (66.5 per cent) and 158,988 cattle (76.5 per cent).

The herds actually being tested for brucellosis rose to 5,129, 49.2 per cent of those in the State. These herds contain 113,225 cattle, 52.5 per cent of the State's cattle population. At the previous fiscal year's end, 4,019 herds (37.6 per cent) with 81,499 cattle (39.2 per cent) were being tested. This represents an increase of 1,110 herds and 31,726 cattle in the all-important testing plans.

As important as the above figures are, it must be recognized that there is a difference between activity and accomplishment. A large volume of testing means little without elimination of reactors. In this respect too the work was successful this fiscal year. More brucellosis reactors were disposed of than ever before. Indemnity was paid on 363 brucellosis reactors. The program allows for economical disposal of reactors without indemnity when replacements are available.

The rate of brucellosis infection is diminishing, now 3.8 per cent on initial test. Two major factors are responsible for this small figure: (1.) elimination of brucellosis reactors, the source of infection, in this and other states, thereby reducing the chance of purchasing infected replacements; (2.) resistance to infection induced by calfhood vaccination..

Although accurate figures are not yet available, the rate of infection in herds that have been tested and clean is extremely low. Indications are that once the major clean-up of brucellosis is accomplished it will not be too difficult to keep infection at a low rate. During this fiscal year, only 15 certified brucellosis-free herds lost their certification due to infection.

The calfhood brucella vaccination portion of the program continued to expand. Several years ago it was believed that the number of calves vaccinated annually had reached a maximum and would not increase. So far, the number continues to rise as indicated by the figures below:

1946-47	13,381
1947-48	14,813
1948-49	16,183
1949-50	18,305
1950-51	19,944
1951-52	22,394
1952-53	23,626

The extensive calfhood brucella vaccination activity is an integral part of the brucellosis eradication program. Although vaccination does not produce complete immunity the resistance induced in most animals provides a sound complement to brucellosis testing and elimination of reactors.

Another achievement in brucellosis eradication efforts this year is the increasing popularity and acceptance of the program. Resolutions favoring the cooperative brucellosis eradication program were passed by such organizations as the New Jersey Farm Bureau, New Jersey Dairymen's Council, United Milk Producers of New Jersey and Cooperative Interbreed Cattle Association of New Jersey. Featured articles and other favorable references to the program were printed in such publications as Interstate Milk Producers Review and Dairy Herd Improvement Association News. Of the 12 Dairy Institutes held in the State in February, 11 discussed brucellosis eradication.

Personnel

A critical shortage of veterinary disease control specialists assigned to the Bureau of Brucellosis Control existed during the year. The only field veterinarian assigned to the Bureau of Brucellosis Control for the full year was Dr. Robert M. Sauer. For the first few months, Dr. Sauer's time was devoted almost entirely to vesicular disease. Dr. Fred J. Wolfe resigned in July 1952. Dr. Chester W. Paulus, Jr. entered military service and Dr. William C. Carter resigned in November. Dr. James F. Savage joined the staff in February. The chief of the Bureau therefore performed many field duties. Of necessity, some activities were not completely done.

Dr. Harold C. King, Dr. Harry R. McKinney and Dr. Edward A. Carrey of the U. S. Bureau of Animal Industry ably performed their brucellosis eradication activities although hampered by extra duties involving vesicular exanthema.

Milk Ring Test

The milk ring test may be used in various ways depending upon several factors. Among these are area of the state, cattle population, number of requests for initial tests in condensed areas and nature of the adopted brucellosis eradication program.

The primary application of the milk ring test in New Jersey is to substitute for the six-month blood test between annual tests of certified brucellosis-free herds. Use of the test in this manner has proved successful in reasonably protecting certified herds with minimum expense, use of personnel and trouble for the herd owner.

Miscellaneous

The greatly expanded brucellosis eradication program was, of necessity, associated with changes in office procedure in the Bureau of Brucellosis Control. For most of the fiscal year the number of office employees remained the same.

The office system had to be streamlined, all records were simplified and some were omitted. But even with the modernized office system, additional strength of personnel is required to accomplish the assigned task.

One of the most significant actions concerning brucellosis eradication was the passing of the State Department of Health's "Herd Testing Program Regulation" which prohibits the use or sale within New Jersey, after April 1, 1958, of milk from dairy animals that are not free of brucellosis. This regulation is designed to protect the milk-consuming, milk-handling and agricultural population of the State as completely as possible.

Some have called this regulation an incentive to brucellosis eradication. It will perform that function and be one of the factors stimulating the program. However, the regulation is also a recognition of the progress that has been made, and that the program is capable of making, in the eradication of this disease.

During the 12-month period preceding the passing of this regulation, more herds and cattle were added to the program than ever before. The record is exceeded only by that of this fiscal year.

As the health regulation was being planned, and after it was passed, several meetings were attended with public health officials, New Jersey Milk Industry Association and others to explain the cooperative brucellosis eradication program, describe the progress achieved, study the public health requirements and work out procedures for their application.

Attention to fairs, shows and sales is a time-consuming but necessary part of the service that is required by and rendered to the cattle owners.

The work accomplished has already diminished the prevalence of brucellosis and the cost to New Jersey's dairymen has been greatly reduced. A few years ago brucellosis was generally recognized as the major cause of abortion and lowered production in New Jersey.

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RESULTS OF MILK RING TEST

July 1, 1952 to June 30, 1953

County	Herds	Cattle	Tested	Negative	Positive	Suspicious	Broken	Sour
Atlantic	1	36	1	1	---	---	---	---
Bergen	32	2,433	99	42	38	19	---	---
Burlington	5	436	52	49	1	2	---	---
Camden	7	478	18	15	2	1	---	---
Cape May	---	---	---	---	---	---	---	---
Cumberland	55	1,930	163	122	15	14	2	10
Essex	1	207	4	4	---	---	---	---
Gloucester	24	856	65	49	9	6	1	---
Hudson	---	---	---	---	---	---	---	---
Hunterdon	47	2,292	285	270	---	14	1	---
Mercer	32	1,247	167	160	---	4	3	---
Middlesex	3	177	13	13	---	---	---	---
Monmouth	18	817	96	92	1	1	2	6
Morris	16	574	33	76	1	---	---	---
Ocean	---	---	---	---	---	---	---	---
Passaic	4	104	11	11	---	---	---	---
Salem	88	3,064	161	99	42	18	2	---
Somerset	51	2,318	277	252	5	6	6	8
Sussex	44	2,259	270	255	7	2	4	2
Union	---	---	---	---	---	---	---	---
Warren	15	657	77	70	3	4	---	---
State	443	19,935	1,842	1,580	124	91	21	26

STATE INDEMNITY PAID FOR REACTORS TO BRUCELLOSIS TEST

July 1, 1952 to June 30, 1953

Class of Cattle	Animals	Amount Paid	Average State Indemnity Paid per Head
Registered	51	\$ 7,650.00	\$ 150.00
Grade	312	23,233.30	74.47
Registered and Grade	363	\$30,883.30	85.08

SALVAGE RECEIVED BY OWNERS FOR REACTORS TO BRUCELLOSIS TEST

July 1, 1952 to June 30, 1953

Class of Cattle	Animals	Amount Paid	Average Salvage Received per Head
Registered	51	\$ 6,579.99	\$ 129.02
Grade	312	41,391.02	132.66
Registered and Grade	363	\$47,971.01	132.15

FEDERAL INDEMNITY PAID FOR REACTORS TO BRUCELLOSIS TEST

July 1, 1952 to June 30, 1953

Class of Cattle	Animals	Amount Paid	Average Federal Indemnity Paid per Head
Registered	51	\$ 2,550.00	\$ 50.00
Grade	312	7,789.77	24.97
Registered and Grade	363	\$10,339.77	28.48
Total amount received by owners for reactors			\$89,194.08
(Sum of salvage, Federal and State indemnity)			
Average amount received per head by owners for reactors			\$ 245.71

REACTORS TO THE TEST FOR BRUCELLOSIS APPRAISED, THEIR APPRAISED VALUE AND TOTAL
AND AVERAGE AMOUNTS RECEIVED BY OWNERS FROM SALVAGE, STATE AND FEDERAL
INDEMNITY

July 1, 1952 to June 30, 1953

County	Reactors Appraised			Reg.	Appraised Value			Total Amount Paid to Owners (Salvage, State and Federal Indemnity)			Average Amount Paid Owners per Head		
	Reg.	Gr.	Total		Gr.	Total	Reg.	Gr.	Total	Reg.	Gr.	Total	
Atlantic		1	1	\$	\$ 275.00	\$ 275.00	\$	\$ 235.13	\$ 235.13	\$	\$235.13	\$235.13	
Bergen													
Burlington	8	41	49	3,275.00	12,925.00	16,200.00	2,442.42	9,310.53	11,752.95	305.30	227.09	239.36	
Camden		5	5		1,255.00	1,255.00		1,013.93	1,013.93		202.79	202.79	
Cape May													
Cumberland	5	4	9	1,990.00	1,205.00	3,195.00	1,803.55	1,048.43	2,851.98	360.71	262.11	316.89	
Essex													
Gloucester	2	12	14	810.00	3,240.00	4,050.00	733.15	2,703.28	3,436.43	366.58	225.27	245.46	
Hudson													
Hunterdon	6	46	52	2,409.00	13,804.50	16,213.50	1,936.25	11,337.14	13,273.39	322.71	246.46	255.26	
Mercer	2	28	30	800.00	9,125.00	9,925.00	626.63	8,318.81	8,945.44	313.32	297.10	298.18	
Middlesex		4	4		1,175.00	1,175.00		792.09	792.09		198.02	198.02	
Monmouth		20	20		6,375.00	6,375.00		4,378.55	4,378.55		218.92	218.92	
Morris	5	11	16	2,070.00	3,413.00	5,483.00	1,643.80	2,598.30	4,242.10	328.76	236.21	265.13	
Ocean													
Passaic	2	3	5	875.00	975.00	1,850.00	619.95	698.92	1,318.87	309.93	232.97	263.77	
Salem	3	28	31	1,130.00	7,805.00	8,935.00	1,036.70	6,581.92	7,618.62	345.57	235.07	245.76	
Somerset	2	24	26	800.00	8,075.00	8,875.00	628.33	5,704.96	6,333.34	314.19	237.71	243.59	
Sussex	15	67	82	6,310.00	21,235.00	27,545.00	5,012.88	15,508.20	20,521.08	334.19	231.47	250.26	
Union		1	1		185.00	185.00		137.46	137.46		137.46	137.46	
Warren	1	17	18	376.00	5,380.00	5,756.00	296.28	3,957.74	4,254.02	296.28	232.81	236.33	
State	51	312	363	\$20,845.00	\$96,447.50	\$117,292.50	\$16,779.99	\$74,325.39	\$91,105.38	\$329.02	\$238.22	\$250.98	

REACTORS TO THE TEST FOR BRUCELLOSIS APPRAISED, AMOUNT OF SALVAGE RECEIVED AND
STATE AND FEDERAL INDEMNITY PAID

July 1, 1952 to June 30, 1953

County	Reactors Appraised			Amount of Salvage Received			Amount of State Indemnity Paid			Amount of Federal Indemnity Paid		
	Reg.	Gr.	Total	Reg.	Gr.	Total	Reg.	Gr.	Total	Reg.	Gr.	Total
Atlantic	---	1	1	\$ ---	\$ 135.13	\$ 135.13	\$ ---	\$ 75.00	\$ 75.00	\$ ---	\$ 25.00	\$ 25.00
Bergen	---	---	---	---	---	---	---	---	---	---	---	---
Burlington	8	41	49	842.42	5,210.53	6,052.95	1,200.00	3,075.00	4,275.00	400.00	1,025.00	1,425.00
Camden	---	5	5	---	513.93	513.93	---	375.00	375.00	---	125.00	125.00
Cape May	---	---	---	---	---	---	---	---	---	---	---	---
Cumberland	5	4	9	803.55	648.43	1,451.98	750.00	300.00	1,050.00	250.00	100.00	350.00
Essex	---	---	---	---	---	---	---	---	---	---	---	---
Gloucester	2	12	14	333.15	1,503.28	1,836.43	300.00	900.00	1,200.00	100.00	300.00	400.00
Hudson	---	---	---	---	---	---	---	---	---	---	---	---
Hunterdon	6	46	52	736.25	6,902.84	7,639.09	900.00	3,294.53	4,194.53	300.00	1,139.77	1,439.77
Mercer	2	28	30	226.63	5,518.81	5,745.44	300.00	2,100.00	2,400.00	100.00	700.00	800.00
Middlesex	---	4	4	---	392.09	392.09	---	300.00	300.00	---	100.00	100.00
Monmouth	---	20	20	---	2,389.78	2,389.78	---	1,488.77	1,488.77	---	500.00	500.00
Morris	5	11	16	643.80	1,498.30	2,142.10	750.00	825.00	1,575.00	250.00	275.00	525.00
Ocean	---	---	---	---	---	---	---	---	---	---	---	---
Passaic	2	3	5	219.95	398.92	618.87	300.00	225.00	525.00	100.00	75.00	175.00
Salem	3	28	31	436.70	3,781.92	4,218.62	450.00	2,100.00	2,550.00	150.00	700.00	850.00
Somerset	2	24	26	228.38	3,304.96	3,533.34	300.00	1,800.00	2,100.00	100.00	600.00	700.00
Sussex	15	67	82	2,012.88	8,808.20	10,821.08	2,250.00	5,025.00	7,275.00	750.00	1,675.00	2,425.00
Union	---	1	1	---	37.46	37.46	---	75.00	75.00	---	25.00	25.00
Warren	1	17	18	96.28	2,257.74	2,354.02	150.00	1,275.00	1,425.00	50.00	425.00	475.00
State	51	312	363	\$ 6,579.99	\$43,302.32	\$49,882.31	\$7,650.00	\$23,233.30	\$30,883.30	\$2,550.00	\$7,789.77	\$10,339.77

STATE DEPARTMENT OF AGRICULTURE

STATE INDEMNITY PAID FOR REACTORS TO BRUCELLOSIS TEST

December 16, 1940 to June 30, 1953

Class of Cattle	Animals	Amount Paid
Registered	1,148	\$109,096.30
Grade	3,331	159,920.33
Registered and Grade	4,479	\$269,016.63
Average State Indemnity Paid Per Head:		
Registered		\$ 95.03
Grade		48.01
Registered and Grade		60.06

SALVAGE RECEIVED BY OWNERS FOR REACTORS TO BRUCELLOSIS TEST

December 16, 1940 to June 30, 1953

Class of Cattle	Animals	Amount Paid
Registered	1,148	\$107,901.86
Grade	3,331	321,595.90
Registered and Grade	4,479	\$429,497.76
Average Salvage Received Per Head:		
Registered		\$ 93.99
Grade		96.55
Registered and Grade		95.89

FEDERAL INDEMNITY PAID FOR REACTORS TO BRUCELLOSIS TEST

December 16, 1940 to June 30, 1953

Class of Cattle	Animals	Amount Paid
Registered	1,142*	\$ 48,973.09
Grade	3,337	72,083.09
Registered and Grade	4,479	\$121,056.18
Average Federal Indemnity Paid Per Head:		
Registered		\$ 42.88
Grade		21.60
Registered and Grade		37.03

*One claim was paid during the fiscal year 1945-1946 involving six animals paid on a registered basis by the State and on a grade basis by the Federal Government.

Total amount received by owners for reactors (Sum of salvage, Federal and State indemnity)	\$ 819,570.49
Average amount received per head	\$ 282.98

REACTORS TO TEST FOR BRUCELLOSIS APPRAISED, THEIR APPRAISED VALUE, TOTAL AND
AVERAGE AMOUNT RECEIVED BY OWNERS FROM SALVAGE, STATE AND FEDERAL INDEMNITY

December 16, 1940 to June 30, 1953

County	Reactors Appraised			Appraised Valuation			Total Amount Paid to Owners (Salvage, State and Federal Indemnity)			Average Amount Paid Owners per Head		
	Reg.	Gr.	Total	Reg.	Gr.	Total	Reg.	Gr.	Total	Reg.	Gr.	Total
Atlantic	1	74	75	\$ 185.00	\$ 9,915.00	\$ 10,100.00	\$ 156.97	\$ 8,847.66	\$ 9,004.63	\$156.97	\$119.56	\$120.00
Bergen	5	24	29	1,255.00	6,800.00	8,055.00	1,149.90	6,071.49	7,221.39	229.98	252.98	249.01
Burlington	98	200	298	29,195.00	48,940.00	78,135.00	25,058.81	39,026.50	64,085.31	255.70	195.13	215.00
Camden	12	26	38	3,740.00	5,290.00	9,030.00	3,396.88	4,371.09	7,767.97	283.07	168.12	204.42
Cape May	---	63	63	---	7,295.00	7,295.00	---	6,618.39	6,618.39	---	105.05	105.05
Cumberland	63	200	263	19,110.00	39,175.00	58,285.00	17,878.28	35,926.57	53,804.85	283.78	179.63	204.58
Essex	---	15	15	---	1,400.00	1,400.00	---	1,305.92	1,305.92	---	87.06	87.06
Gloucester	22	143	165	7,585.00	35,130.00	42,715.00	6,389.77	30,876.39	37,266.16	290.44	215.92	225.86
Hudson	---	2	2	---	730.00	730.00	---	557.53	557.53	---	278.77	278.77
Hunterdon	137	235	372	41,599.00	64,224.50	105,823.50	34,375.74	52,865.22	87,240.96	250.92	224.96	234.52
Mercer	102	408	510	27,615.00	83,160.00	110,775.00	23,330.33	74,829.92	98,160.25	228.73	183.41	192.47
Middlesex	86	602	688	14,245.00	79,410.00	93,655.00	12,788.69	71,798.64	84,587.33	148.71	119.27	122.95
Monmouth	64	124	188	16,525.00	24,850.00	41,375.00	14,789.76	21,202.93	35,992.69	231.09	170.99	191.45
Morris	162	329	491	42,194.00	61,580.00	103,774.00	35,485.43	51,318.04	86,803.47	219.05	155.98	176.79
Ocean	---	9	9	---	1,885.00	1,885.00	---	1,740.20	1,740.20	---	193.36	193.36
Passaic	8	53	61	2,335.00	9,165.00	11,550.00	1,977.77	7,731.64	9,709.41	247.22	145.88	159.17
Salem	72	285	357	19,985.00	49,390.00	69,375.00	18,567.01	43,632.69	62,199.70	257.88	153.10	174.23
Somerset	148	268	416	38,480.00	47,565.00	86,045.00	32,369.36	39,277.55	71,646.91	218.71	146.56	172.23
Sussex	99	142	241	30,105.00	44,542.50	74,647.50	25,411.13	34,788.61	60,199.74	256.68	244.99	249.79
Union	---	10	10	---	1,450.00	1,450.00	---	1,317.61	1,317.61	---	131.76	131.76
Warren	69	119	188	15,151.00	24,010.00	39,161.00	12,845.42	19,494.65	32,340.07	186.17	163.82	172.02
State	1,148	3,331	4,479	\$309,304.00	\$645,907.00	\$955,211.00	\$265,971.25	\$553,599.24	\$819,570.49	\$231.68	\$166.20	\$282.98

REACTORS TO TEST FOR BRUCELLOSIS APPRAISED, AMOUNT OF SALVAGE RECEIVED
AND STATE AND FEDERAL INDEMNITY PAID

December 16, 1940 to June 30, 1953

County	Reactors Appraised			Amount of Salvage Received			Amount of State Indemnity Paid			Amount of Federal Indemnity Paid		
	Reg.	Gr.	Total	Reg.	Gr.	Total	Reg.	Gr.	Total	Reg.	Gr.	Total
Atlantic	1	74	75	\$ 28.95	\$ 4,588.41	\$ 4,617.36	\$ 78.02	\$ 2,754.17	\$ 2,832.19	\$ 50.00	\$ 1,505.08	\$ 1,555.08
Bergen	5	24	29	441.48	3,941.79	4,383.27	471.49	1,565.87	2,037.36	236.93	563.83	800.76
Burlington	98	200	298	10,356.22	22,181.08	32,537.30	10,423.75	12,123.80	22,547.55	4,278.84	4,721.72	9,000.56
Camden	12	26	38	1,149.88	2,271.62	3,421.50	1,647.00	1,474.31	3,121.31	600.00	625.16	1,225.16
Cape May	..	63	63	----	3,490.81	3,490.81	----	1,920.17	1,920.17	----	1,207.49	1,207.49
Cumberland	63	200	263	7,989.26	21,274.12	29,263.38	7,092.12	10,287.42	17,379.54	2,796.90	4,365.03	7,161.93
Essex	..	15	15	----	846.86	846.86	----	276.55	276.55	----	182.51	182.51
Gloucester	22	143	165	3,192.18	18,938.94	22,131.12	2,279.90	8,673.15	10,953.05	917.69	3,264.30	4,181.99
Hudson	..	2	2	----	357.53	357.53	----	150.00	150.00	----	50.00	50.00
Hunterdon	137	235	372	13,359.14	32,208.21	45,567.35	14,967.80	14,928.36	29,896.16	6,048.80	5,728.65	11,777.45
Mercer	102	408	510	9,499.39	46,344.62	55,844.01	9,570.45	19,821.91	29,392.36	4,260.49	8,563.39	12,923.88
Middlesex	86	602	688	5,413.59	40,221.46	45,635.05	4,458.20	19,535.48	23,993.68	2,916.90	12,041.70	14,958.60
Monmouth	64	124	188	6,930.69	12,491.52	19,422.21	5,260.19	6,010.95	11,271.14	2,598.88	2,700.46	5,299.34
Morris	162	329	491	12,197.39	26,023.01	38,220.40	15,958.21	17,727.70	33,695.91	7,319.83	7,567.33	14,887.16
Ocean	..	9	9	----	954.91	954.91	----	573.70	573.70	----	211.59	211.59
Passaic	8	53	61	731.81	4,097.79	4,829.60	865.95	2,454.02	3,319.97	380.01	1,179.83	1,559.84
Salem	72	285	357	8,486.76	27,089.16	35,575.92	7,051.42	11,138.81	18,190.23	3,028.83	5,404.72	8,433.55
Somerset	148	268	416	12,283.05	21,202.43	33,485.48	13,714.60	12,303.21	26,017.81	6,371.71	5,771.91	12,143.62
Sussex	99	142	241	11,105.35	21,303.03	32,408.38	10,023.96	9,991.34	20,015.30	4,281.82	3,494.14	7,775.96
Union	..	10	10	----	724.60	724.60	----	399.41	399.41	----	193.60	193.60
Warren	69	119	188	4,736.72	11,044.00	15,780.72	5,223.24	5,810.00	11,033.24	2,885.46	2,640.65	5,526.11
State	1,148	3,331	4,479	\$107,901.86	\$321,595.90	\$429,497.76	\$109,096.30	\$159,920.33	\$269,016.63	\$48,973.09	\$72,083.09	\$121,056.18

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HERDS AND ANIMALS IN HERDS OPERATING UNDER BRUCellosIS TESTING PLANS
AND THOSE CERTIFIED BRUCellosIS-FREE

June 30, 1953

County	PLAN A		PLAN B		PLAN D		Total Herds	Total Animals
	Herds	Animals	Herds	Animals	Herds	Animals		
Atlantic	115	434	3	215	---	---	118	649
Certified	90	366	---	---	---	---	90	366
Bergen	42	473	5	150	---	---	47	623
Certified	30	406	---	---	---	---	30	406
Burlington	223	6,093	93	5,863	1	85	317	12,041
Certified	101	2,951	3	197	---	---	104	3,148
Camden	98	923	2	87	2	89	102	1,099
Certified	48	612	---	---	---	---	48	612
Cape May	87	518	---	---	---	---	87	518
Certified	76	489	---	---	---	---	76	489
Cumberland	456	2,962	35	1,531	2	132	493	4,625
Certified	338	2,076	2	101	---	---	340	2,177
Essex	19	265	1	234	---	---	20	499
Certified	17	255	---	---	---	---	17	255
Gloucester	412	3,050	27	772	1	59	440	3,881
Certified	257	2,070	---	---	---	---	257	2,070
Hudson	1	30	---	---	---	---	1	30
Certified	---	---	---	---	---	---	---	---
Hunterdon	746	15,336	141	5,599	4	233	891	21,168
Certified	340	7,475	2	69	---	---	342	7,544
Mercer	351	5,428	44	2,113	1	49	396	7,590
Certified	193	3,270	1	23	---	---	194	3,293
Middlesex	138	1,162	24	3,122	---	---	162	4,284
Certified	86	879	3	180	---	---	89	1,059
Monmouth	377	5,591	18	870	3	404	398	6,865
Certified	234	3,420	1	196	---	---	235	3,616
Morris	206	3,380	37	3,214	3	407	246	7,001
Certified	144	2,108	---	---	---	---	144	2,108
Ocean	122	561	9	227	---	---	131	788
Certified	89	266	---	---	---	---	89	266
Passaic	19	211	1	53	1	79	21	343
Certified	15	151	---	---	---	---	15	151
Salem	207	4,218	58	2,374	4	178	269	6,770
Certified	87	1,644	---	---	---	---	87	1,644
Somerset	362	7,991	41	1,710	3	179	406	9,880
Certified	157	4,853	1	140	---	---	158	4,993
Sussex	241	9,096	100	6,761	9	458	350	16,315
Certified	94	3,676	6	1,269	---	---	100	4,945
Union	28	217	---	---	---	---	28	217
Certified	26	158	---	---	---	---	26	158
Warren	136	4,496	66	3,322	4	221	206	8,039
Certified	61	2,033	---	---	---	---	61	2,033
State	4,386	72,435	705	38,217	38	2,573	5,129	113,225
Certified	2,483	39,158	19	2,175	---	---	2,502	41,333

AGGLUTINATION TESTS CONDUCTED IN DIVISION LABORATORY ON ANIMALS IN HERDS
UNDER SUPERVISION FOR CONTROL OF BRUCELLOSIS

July 1, 1952 to June 30, 1953

County	Samples Received	Nega- tive	Posi- tive	Sus- picious	Samples Ins. Sera	Not Hemo- lyzed	Tested Broken
Atlantic	637	569	15	53	---	---	---
Bergen	561	539	6	15	---	---	1
Burlington	10,122	8,757	409	951	5	---	---
Camden	922	842	23	56	---	1	---
Cape May	474	459	1	14	---	---	---
Cumberland	4,140	3,687	161	291	---	---	1
Essex	371	340	1	30	---	---	---
Gloucester	3,850	3,508	115	226	---	---	1
Hudson	60	53	3	4	---	---	---
Hunterdon	19,469	17,795	440	1,195	2	29	8
Mercer	8,247	7,376	197	669	3	---	2
Middlesex	7,927	7,701	28	197	---	---	1
Monmouth	6,003	5,451	95	455	2	---	---
Morris	6,207	5,617	163	423	2	---	2
Ocean	458	398	18	42	---	---	---
Salem	6,238	5,483	265	486	1	---	3
Somerset	9,140	8,347	174	614	4	---	1
Sussex	17,924	15,784	511	1,624	1	---	4
Union	200	180	2	18	---	---	---
Warren	7,771	6,801	292	663	2	---	13
State	111,148	100,050	2,930	8,079	22	30	57
	Per Cent Negative				90.09		
	Per Cent Positive				2.64		
	Per Cent Suspicious				7.27		
	Per Cent Not Tested				.08		

THIRTY-EIGHTH ANNUAL REPORT

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SUMMARY — BLOOD SAMPLES DRAWN FROM CATTLE — ROUTINE BRUCELLOSIS TESTS

July 1, 1952 to June 30, 1953

Veterinarians Bleeding	Lots	Animals
New Jersey D. A. I.	322	2,807
United States B. A. I.	1,082	18,830
Accredited Practitioners (State Expense)	4,973	90,695
Accredited Practitioners (Tests at Owner's Expense)	1,338	11,919
Totals	7,715	124,251

SUMMARY — BLOOD SAMPLES DRAWN FROM INSHIPPED CATTLE — BRUCELLOSIS TESTS

New Jersey D. A. I.	685	6,616
United States B. A. I.	308	2,245
Accredited Practitioners (State Expense)	1	17
Accredited Practitioners (Tests at Owner's Expense)	295	4,469
Totals	1,289	13,347

SUMMARY — BLOOD SAMPLES DRAWN FROM GOATS — ROUTINE BRUCELLOSIS TESTS

New Jersey D. A. I.	17	86
United States B. A. I.	51	253
Accredited Practitioners (State Expense)	135	1,751
Accredited Practitioners (Tests at Owner's Expense)	---	---
Totals	203	2,090

SUMMARY — MISCELLANEOUS BLOOD SAMPLES DRAWN — ROUTINE BRUCELLOSIS TESTS

New Jersey D. A. I.	1	1 horse
Accredited Practitioners (Test at Owner's Expense)	11	3 horses 108 pigs 1 sheep
Totals	12	4 horses 108 pigs 1 sheep

CALFHOOD VACCINATIONS REPORTED

July 1, 1952 to June 30, 1953

County	Plan A		Plan B		Plan C		Plan D				Total		Adults	STATE DEPARTMENT OF AGRICULTURE
	Lots	Calves	Lots	Calves	Lots	Calves	Lots	Calves	Heifers	Adults	Lots	Calves			Heifers
Atlantic	6	47	1	14	1	2	---	---	---	---	8	63	---	---
Bergen	6	32	5	9	3	19	---	---	---	---	14	60	---	---
Burlington	169	793	91	592	242	1,402	4	10	7	11	506	2,797	7	11
Camden	28	114	---	---	17	72	2	24	---	---	47	210	---	---
Cape May	11	20	---	---	---	---	---	---	---	---	11	20	---	---
Cumberland	82	284	37	150	40	126	2	18	---	---	161	578	---	---
Essex	7	33	3	47	3	9	---	---	---	---	13	89	---	---
Gloucester	114	427	27	148	43	164	2	7	4	---	186	746	4	---
Hudson	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hunterdon	618	2,120	177	679	576	1,873	6	32	3	---	1,377	4,704	3	---
Mercer	216	724	41	176	57	177	6	30	---	---	320	1,107	---	---
Middlesex	31	151	30	305	67	205	---	---	---	---	128	661	---	---
Monmouth	194	778	16	101	117	433	6	28	9	---	333	1,340	9	---
Morris	101	337	51	454	82	319	5	63	1	---	239	1,173	1	---
Ocean	13	45	10	48	8	22	---	---	---	---	31	115	---	---
Passaic	9	19	1	2	4	9	4	9	---	1	18	39	---	1
Salem	159	594	58	283	206	769	5	18	---	35	428	1,664	---	35
Somerset	293	1,111	20	108	188	591	3	10	1	---	504	1,820	1	---
Sussex	288	1,080	104	697	555	1,909	11	39	9	25	958	3,725	9	25
Union	10	18	---	---	4	13	---	---	---	---	14	31	---	---
Warren	145	616	66	289	405	1,751	8	28	1	---	624	2,684	1	---
State	2,500	9,343	738	4,102	2,618	9,865	64	316	35	72	5,920	23,626	35	72

HERDS AND ANIMALS IN HERDS UNDER BRUCELLOSIS CONTROL PLANS INCORPORATING USE OF CALFHOOD VACCINATION

To June 30, 1953

County	Plan A		Plan B		Plan C		Plan D		Total	
	Herds	Cattle	Herds	Cattle	Herds	Cattle	Herds	Cattle	Herds	Cattle
Atlantic	7	184	1	162	1	2	---	---	9	348
Bergen	4	221	2	66	4	127	---	---	10	414
Burlington	142	5,444	79	5,552	315	9,966	2	165	538	21,127
Camden	32	717	3	112	40	869	2	89	77	1,787
Cape May	13	78	---	---	2	2	---	---	15	80
Cumberland	100	1,833	34	1,376	47	1,057	2	144	183	4,410
Essex	3	217	1	234	2	34	---	---	6	485
Gloucester	101	2,350	14	464	39	682	2	101	156	3,597
Hudson	---	---	---	---	---	---	---	---	---	---
Hunterdon	613	13,549	130	5,632	548	8,752	4	396	1,295	28,329
Mercer	208	5,279	30	1,746	29	656	1	32	268	7,713
Middlesex	44	937	15	2,121	128	1,440	---	---	187	4,498
Monmouth	185	4,603	19	1,004	123	1,473	3	404	330	7,484
Morris	91	2,407	19	2,073	110	2,389	1	239	221	7,108
Ocean	25	385	4	174	11	409	---	---	40	968
Passaic	7	115	1	47	6	36	1	79	15	277
Salem	132	3,605	40	1,563	205	5,308	4	194	381	10,670
Somerset	247	7,492	37	1,589	148	2,956	2	109	434	12,146
Sussex	206	8,594	78	5,167	469	14,339	11	506	764	28,506
Union	15	149	---	---	8	56	1	6	24	211
Warren	114	4,523	65	3,592	428	13,832	4	198	611	22,145
State	2,289	62,682	572	32,674	2,663	64,385	40	2,662	5,564	162,403

LOTS, CALVES, HEIFERS AND ADULTS VACCINATED FOR BRUCELLOSIS

July 1, 1946 to June 30, 1953

County	Lots Vaccinated	Calves Vaccinated	Heifers Vaccinated	Adults Vaccinated
Atlantic	27	206	4	----
Bergen	62	325	8	----
Burlington	3,527	17,183	39	94
Camden	238	974	16	84
Cape May	29	55	----	----
Cumberland	895	3,321	7	7
Essex	107	611	15	----
Gloucester	906	3,221	15	13
Hudson	----	----	----	----
Hunterdon	7,610	23,864	45	156
Mercer	1,977	7,057	39	205
Middlesex	836	4,091	7	9
Monmouth	2,038	7,823	101	133
Morris	1,448	6,550	20	325
Ocean	197	651	----	----
Passaic	82	220	----	8
Salem	2,270	8,163	2	59
Somerset	3,091	10,204	17	83
Sussex	5,162	19,926	167	213
Union	113	236	4	8
Warren	3,597	13,965	26	74
State	<u>34,212</u>	<u>128,646</u>	<u>532</u>	<u>1,471</u>

CALVES VACCINATED FOR BRUCELLOSIS

July 1, 1946 to June 30, 1953

County	1946-47	1947-48	1948-49	1949-50	1950-51	1951-52	1952-53	Totals
Atlantic	----	----	3	25	13	102	63	206
Bergen	19	18	69	53	46	60	60	325
Burlington	1,898	1,982	2,206	2,566	2,842	2,892	2,797	17,183
Camden	82	88	94	115	145	240	210	974
Cape May	----	----	1	4	19	11	20	55
Cumberland	251	381	451	546	518	596	578	3,321
Essex	86	99	76	78	94	89	89	611
Gloucester	239	304	353	364	594	621	746	3,221
Hudson	----	----	----	----	----	----	----	----
Hunterdon	2,261	2,732	3,005	3,298	3,664	4,200	4,704	23,864
Mercer	979	905	845	935	1,092	1,194	1,107	7,057
Middlesex	507	456	521	625	590	731	661	4,091
Monmouth	780	828	1,136	1,207	1,189	1,343	1,340	7,823
Morris	814	890	758	853	972	1,090	1,173	6,550
Ocean	37	93	88	84	114	120	115	651
Passaic	32	24	19	26	35	45	39	220
Salem	723	835	1,010	1,179	1,276	1,476	1,664	8,163
Somerset	1,109	1,246	1,349	1,470	1,499	1,711	1,820	10,204
Sussex	1,920	2,204	2,368	2,913	3,085	3,711	3,725	19,926
Union	22	34	23	22	34	70	31	236
Warren	1,622	1,694	1,808	1,942	2,123	2,092	2,684	13,965
State	13,381	14,813	16,183	18,305	19,944	22,394	23,626	128,646

STATE DEPARTMENT OF AGRICULTURE

DIVISION LABORATORY REPORT

July 1, 1952 to June 30, 1953

BLOOD TESTS MADE FOR BRUCELLOSIS ON INSHIPPED ANIMALS

Samples received	13,347*
Samples broken (not set)	3
Tests set	13,343*
Tests read	13,343*
Insufficient sera (not set)	1
Samples positive	76
Samples negative	13,267*

*This figure includes titre carrying calfhood
vaccinates eligible for entry.

BLOOD TESTS MADE FOR BRUCELLOSIS ON ANIMALS IN HERDS UNDER SUPERVISION

Samples received	125,659
Samples broken (not set)	44
Insufficient sera (not set)	24
Tests set	125,591
Tests read	124,696
Samples positive	2,997
Samples highly suspicious	1,551
Samples slightly suspicious	7,061
Samples negative	113,062
Samples hemolyzed	25

BLOOD TESTS MADE FOR BRUCELLOSIS OF VACCINATED CATTLE

Samples received	1,653
Samples broken (not set)	2
Tests set	1,651
Tests read	1,651
Samples positive	14
Samples highly suspicious	19
Samples slightly suspicious	78
Samples negative	1,537
Samples hemolyzed	3

MILK RING (ABR) TEST FOR BRUCELLOSIS

Samples received	1,840
Samples broken (not set)	21
Samples sour (not set)	24
Samples tested	1,795
Samples positive	124
Samples suspicious	91
Samples negative	1,580

BLOOD TESTS MADE FOR PULLORUM DISEASE OF POULTRY

Samples received	52,138
Samples broken (not set)	2
Insufficient sera (not set)	2
Tests set	52,134
Tests read	52,134
Samples positive	27
Samples negative	52,107

HOTIS TESTS MADE FOR MASTITIS ON MILK SAMPLES OF ANIMALS

Animals tested	135
Quarter samples tested	533
Streptococci infected quarters	62
Staphylococci infected quarters	29
Negative quarters	435
Unsatisfactory	7

BACTERIOLOGICAL, MICROSCOPIC AND POST-MORTEM EXAMINATION

Animal	Number Specimens Received	Specimen Received	Condition Suspected	Laboratory Findings
Avian	8	Poults	S. pullorum	Confirmed
Avian	4	Chicks	S. pullorum	Confirmed
Avian	52	Birds	S. pullorum	Confirmed
Avian	4	Poults	S. pullorum	Negative
Avian	3	Chicks	S. pullorum	Negative
Avian	171	Birds	S. pullorum	Negative
Avian	11	Birds	Blackhead	Confirmed
Avian	4	Chicks	Unknown	Blackhead
Avian	1	Poult	Unknown	Blackhead
Avian	14	Birds	Unknown	Coccidiosis
Avian	7	Chicks	Unknown	Coccidiosis
Avian	3	Poults	Unknown	Coccidiosis
Avian	2	Birds	Unknown	Fowl Paralysis
Avian	6	Birds	Newcastles Disease	Typical symptoms of Newcastles Disease
Avian	3	Chicks	Newcastles Disease	Typical symptoms of Newcastles Disease
Avian	2	Ducks	Unknown	Botulism
Avian	7	Chicks	Unknown	Rickets
Avian	7	Birds	Unknown	Fowl Typhoid
Avian	10	Birds	Unknown	Roundworms
Avian	2	Birds	Unknown	Tapeworms
Avian	7	Birds	Unknown	Leukosis
Avian	24	Birds	Unknown	Undetermined
Avian	1	Bird	Unknown	Laryngotracheitis
Bovine	15	Ears	Anthrax	Confirmed
Bovine	3	Spleens	Anthrax	Confirmed
Bovine	39	Ears	Anthrax	Negative
Bovine	2	Spleens	Anthrax	Negative
Bovine	1	Kidney	Anthrax	Negative
Bovine	7	Blood samples	Anthrax	Negative
Bovine		Udder secretion	Anthrax	Negative
Bovine	4	Feces	Anthrax	Negative
		Hay, feed, molasses dirt and salt	Anthrax	Negative

Animal	Number Specimens Received	Specimen Received	Condition Suspected	Laboratory Findings
Bovine	2	Feti	Brucella, vibrio and trichomonads	Brucella
Bovine	1	Placenta	Brucella, vibrio and trichomonads	Trichomonads
Bovine	11	Feti	Brucella, vibrio and trichomonads	Negative
Bovine	1	Placenta	Brucella, vibrio and trichomonads	Negative
Bovine	1	Cotelydon	Brucella	Negative
Bovine	21	Milk samples	Brucella	Negative
Bovine	6	Vaginal swabs	Trichomonads	Negative
Bovine	1	Brain	Listerellosis	Negative
Bovine		Lung and heart	Pathogenic bacteria	Negative
Bovine	2	Blood samples	Vibrio enteritis	Negative
Bovine	4	Feces	Vibrio enteritis	Negative
Bovine	1	Milk sample	Determine if potable	Unfit for consumption
Bovine	4	Milk samples	Pathogenic bacteria	Coliforms isolated
Bovine		Lungs, kidney, spleen, liver and intestines	Pathogens	Coliforms isolated
Bovine		Blood, feces, kidney and spleen	Anaplasmosis and coccidia	Negative
Cavy	1	Rabbit	Pathogenic bacteria	Intermediate coliforms
Equine	1	Ear	Anthrax	Negative
Equine	1	Urine	Pregnancy	Confirmed
Equine	1	Fetus	Unknown	Streptococci from umbilical cord
Ovine	1	Sheep	L. monocytogenes	Confirmed
Ovine	7	Ears	Anthrax	Negative
Porcine	3	Pigs	Unknown	Undetermined
Porcine	4	Pigs	Unknown	Hog cholera
Porcine	1	Ear	Anthrax	Negative
Cervidae	1	Fawn	Unknown	Coliforms organisms
Rodents	1	Mink	Cause of death	Undetermined
Rodents	1	Mink	Cause of death	Evidence of acidfast organisms in lungs
Rodents	1	Chinchilla	Unknown	Undetermined
		Banana puree	Pathogenic organisms	Unable to demonstrate viable bacteria

Report of the Division of Markets

WARREN W. OLEY, *Director*

The last half of the calendar year 1952 confirmed the belief that, for the country as a whole, crop production in the year was very heavy and nearly equaled the 1949 production, which was the second highest on record. Production was well balanced with only wheat and rice close to record proportions. With crops in such large volume, the country had surplus supplies of food. Consequently food costs to the consumer were lower.

As the fiscal year 1951-52 ended, the last of the Office of Price Stabilization regulations affecting any New Jersey-produced commodities was removed. White potato prices had soared in the spring of 1952, but with the increased acreage and crop prospects of the 1952 growing season, all fear of inadequate supplies was removed. We therefore have experienced the first year in many during which the normal law of supply and demand has been permitted to operate.

Now the problem of surplus food confronts the nation. Under the loan and purchase programs to which the Government is committed by law, stocks of many commodities are piling up in Government hands. As the year ends, the Commodity Credit Corporation has close to 3.2 billion dollars tied up in price support programs. This is, roughly, twice the amount which the Government had invested a year earlier.

The support program affects farmers of this State principally through the prices of feed supplies purchased by dairymen and poultry farmers. By far the largest food items owned outright by the Government or on which loans have been made are corn, wheat and cottonseed oil, all of which are essential to New Jersey livestock or poultry producers. They account for about two-thirds of the Commodity Credit Corporation price support financing. As a new year begins, the prospect of bumper crops of these commodities seems to insure a greater burden on Government finances and a continuation of the serious cost situation facing New Jersey dairymen and poultry farmers. A further effect of this situation is the resultant restriction of exports of farm products.

New Jersey farmers are located within an area of great industrial development, with high per capita income. The greater part of our production is of the higher cost, highly nutritious food items. Under prosperous conditions, which we have now experienced for several years, consumption of

these foods rises sharply. New Jersey people eat well and our farmers benefit. We hear many complaints about the cost of living, but actually since the beginning of World War II, the national tax load has far exceeded the entire consumer expenditures for food.

With the exception of livestock production and sales, increases have been made in practically all branches of our agriculture. The poultry and egg industry stands first in importance in New Jersey. Increases were scored both in volume of eggs produced and prices per unit. Sales on the egg auctions increased in volume during the year about 10 per cent over the 1951-52 year, and prices at the auctions were 7.4 per cent higher on a unit basis.

In fruits and vegetables, this year was an off year in volume of tree fruits, but prices were well above those of the 1951 season. New Jersey experienced a dry spell just before the beginning of the 1952-53 fiscal year. This caused much smaller vegetables crops last summer. Prices, however, were well above those of the 1951 season.

During the last half of the fiscal year, or in the spring and early summer of 1953, growing conditions were excellent over most of the State and volume of vegetables and berries was above the corresponding period of 1952. Prices received by growers, however, were lower. Therefore, while food prices in the nation have dropped, the general trend of prices of the important commodities grown in New Jersey has been favorable to our farmers.

Considerable progress has been made in lines of work conducted by the Division. In the poultry work the service in egg marketing and grading was greatly expanded. While the volume of inspections under fruits and vegetables declined because of short crops and because support buying of potatoes was terminated, increases have been made in other vegetables. The volume of milk produced to meet the requirements of official State grades has increased. In the program in market reporting and cooperatives advancements have been made, especially in the service to cooperatives.

The Division has continued the close cooperation with other State agencies that has prevailed for many years. This is especially true with the Division of Weights and Measures of the Department of Law and Public Safety and with the Department of Health. Relations with the State College of Agriculture and the State Agricultural Experiment Station and the Extension Service have been very cordial and constructive. Several cooperative agreements with the U S. Department of Agriculture have been concluded and work under these agreements has been beneficial to the State. The Division also worked closely with commodity groups in most branches of New Jersey agriculture.

BUREAU OF MARKET REPORTING AND COOPERATIVES

The work of this Bureau is divided and includes in each of the two sections a distinct and important project. The first project, market reporting, includes such crop information as is necessary to round out the picture of market influences. As such, it supplies information to New Jersey producers on market conditions and prices of the farm commodities which they are marketing, as well as crop conditions and other important factors from competing areas. This part of the project goes further by supplying information on New Jersey-grown commodities to the trade in an effort to stimulate additional consumption and movement of such commodities.

The second project consists of servicing the 110 farmer cooperatives now active the State. It has been conservatively estimated that the cooperatives in New Jersey serve 75,000 members (one farmer may belong to as many as four different cooperatives) and some 20,000 non-members. It can thus be seen that the continued financial strength and service rendered by these organizations are important to the economy of New Jersey agriculture.

Activities in both projects cross all commodity lines and are concerned with many regulatory requirements. Close associations are maintained with other State and Federal agencies as well as with trade and professional groups concerned with markets and cooperatives.

MARKET REPORTING

The crop and market information project includes daily price reporting; timely weekly Market Conditions reports; a digest of market prices on a weekly basis through the Weekly Market Review; special studies on important crops such as potatoes; advertising and promotional work in the form of trade paper advertising; promotional articles for release to the general press and trade papers; and in cooperation with the Bureau of Agricultural Economics of the U. S. Department of Agriculture crop reports are issued during the marketing season. In addition, information of a more detailed nature is given by telephone or letter when requested by growers or grower associations.

DAILY PRICE REPORTING

Daily price reporting is carried on by telephone and usually is a result of an agreement between an association of growers and the Bureau for such service. Calls are made by the Bureau to the Philadelphia office of the Fruit and Vegetable Market News Service, from which the price and demand of particular grades or qualities of a commodity are obtained. These are, in turn, relayed to the interested parties.

The New Jersey Department of Agriculture, through agreement with USDA, maintains cooperative employees on the New York and Philadelphia markets who visit the trade and report the market conditions and prices for which the commodities are sold. These men are experienced and able to appraise market factors and trends.

New Jersey producers are particular favored over the producers in more distant sections of the country as they can obtain the early morning prices on both the New York and Philadelphia markets from early morning radio programs in the Philadelphia area; in fact, one of the State cooperative employees handles a radio program on which the market prices are broadcast.

DAILY POTATO DESTINATIONS REPORTING

One other daily project of the Bureau, of a seasonal nature, is that of reporting the truck destinations of potatoes sold by the principal dealers or shippers in New Jersey. Starting about the middle of July, calls are made from field offices at Hightstown and Bridgeton and from the Trenton office to the potato dealers in the Central and South Jersey shipping areas requesting a report on the number of shipments, the hundredweight of each and the destinations by states.

The totals are compiled immediately after the information is obtained, and the results are mailed to the cooperating shippers the same day so that the information will be available to them the next morning. A copy is also sent to the Philadelphia office of the Fruit and Vegetable Market News Service where the State totals are placed on the daily potato report. Arrangements are being made with the USDA chief of the Market News Service to have this information placed on a leased wire where it will be available to all potato sections in the country.

WEEKLY MARKET REPORTS

Weekly Market Review

A digest of the weekly prices of feeds, grains, eggs, poultry, livestock, fruits and vegetables and milk is released in the Weekly Market Review. This four-page publication carries a capsule comment on the butter, egg, live poultry, dressed poultry, vegetable, fruit, feed and grain markets. The prices reported are obtained from reports on the New York and Philadelphia fruit and vegetable markets; from a special correspondent in Philadelphia, who is a member of the Commercial Exchange in that city and who quotes the feed and grain prices; from the New Jersey cooperative auction associations and from the New York egg market and the Mercantile Exchange. The cooperative auction markets supply prices on eggs, poultry and livestock. The Office of Milk Industry reports milk prices.

These prices are undoubtedly as accurate as can be obtained. In some instances, such as the livestock prices, the range of prices is so great that the figures may not be too valuable to the producer. They are, however, the best that can be obtained. The Weekly Market Review is widely used, as is shown in letters from and conversation with various producers, particularly egg producers who apparently use the figures in the Review as a basis of sale between themselves and local buyers who purchase at their farms. Frequently the auction prices are used in local transactions and as these prices are generally above the New York quotations many New Jersey producers are able to obtain a greater return than would be possible without the Weekly Market Review figures.

The Review also serves as the basis for studies of prices on a current and historical basis. On the fourth page of the Review there is a statistical summary which covers the current prices, those of the week previous and those of the same day in the preceding year on grains, feedstuffs, hay, eggs, poultry, fruits and vegetables. In the past 10 years there has been little change in the form of the Weekly Market Review and the content. The principal changes in that period have been to place the egg, fruit and vegetable prices in chart form so that they could be more easily recognized and compared with other markets.

Market Conditions Reports

Market Conditions reports are issued on nine principal commodities. The Market Conditions reports differ from the reports of most Federal and State agencies since each report is confined to a single commodity and contains on a single page items of interest to the producer of that particular commodity. Included are crop and growing information on the product in this State or in competing states; the condition of the market; new trends in packaging; changes in transportation charges and embargoes or shortages of equipment; Federal, State or international regulations which might regulate the movement of the product, and weather conditions. The reasons that the report is made in this form are to enable the producer to quickly size up the general marketing situation by reading one report rather than having to examine several from various sources, and also to reduce cost by including on the mailing list for a commodity only those names of producers of that product who request the service. New Jersey growers have expressed their appreciation for reports prepared in this manner.

There were five reports issued on sweet potatoes. These reports included information on production of the 1952 crop, the marketing of it during the winter months and in the spring of 1953 and the planting and progress of the 1953 crop during the spring months. On the basis of the esti-

mates by the U. S. Bureau of Agricultural Economics of sweet potato yields throughout the United States, New Jersey leads in the number of bushels per acre. The national 1952 crop was only 1-1/2 million bushels larger than the previous year, far below normal. No marketing problems developed in the State as the supply was well below the usual consumption in the United States. Prices remained very high during the entire marketing season and some sweet potatoes which had been produced in the fall of 1952 were still being marketed during the last week of June. Prices ranged around \$5.50 a bushel.

There were 38 reports issued on white potatoes. Prices during the New Jersey marketing season were high and for a short period ranged as high as \$6 per hundred pounds. As other producing areas started to market their crops, these prices declined. An early report of the BAE indicated that the white potato crop would be higher in volume than the 1951 crop, but would be well below the amount usually considered to be needed for consumption during the year. Later, as additional reports were available, the estimate was increased. Geographically, the production was unbalanced, with light production in the East and an abundant crop in the West.

Six reports were issued on apples. The New Jersey crop of apples was estimated at about 2 million bushels for 1952 as compared with a normal volume of 2 1/2 million bushels. This placed New Jersey apple growers in a favorable position because the total United States crop was below average. For the most part, the market continued good through all of the season.

Six reports were issued on peaches. The 1952 crop in the United States was just about average. Conditions were spotted over most of the producing areas and the New Jersey production followed the national trend. Some varieties in New Jersey had practically no yield, while others had only fair to average yields. This contributed to the decline in production from the approximate 2 million bushels produced in 1951 to the 1-1/3 million bushels estimated for 1952.

Two reports were issued on lettuce and were released in the spring of 1953. Most of the information contained in these reports applied to crop conditions in western and southern states. Yields per acre were about equal to the 1952 yields, with the exception of New Jersey and Connecticut, where an increase per acre was noted at 55 and 50 crates, respectively. Production for the nation available for harvest up to July 1 was estimated at 22 million crates compared with 19-1/2 million crates in 1952. Although the market was well supplied, the quality of the New Jersey lettuce was sufficiently good to command a much higher price than during the previous year.

Four reports were issued on asparagus, all in the spring of 1953. Asparagus is the principal single spring crop produced in New Jersey and is sold on the fresh market as well as to processors. New Jersey had about 28,000 acres for harvest. Nationwide, the State is second in importance, exceeded only by California. The prices obtained on the fresh market were generally about the same as those obtained in previous years.

Included in these reports were the specifications for the asparagus crate which became standard for New Jersey July 1, 1951. The inside dimensions are length, 16-1/4 inches; depth, 11 inches; width at bottom, 12 inches, and width at top, 9-3/4 inches. When this crate is used it is not necessary to have any statement as to the weight of the asparagus within the crate. Any other size crate must have marked on it the net weight of the asparagus contained therein.

Six reports were issued on strawberries. The strawberry crop for the United States was placed at about 11 million 24-quart crates, compared with 12 million in 1952. The decline was attributed entirely to a decrease in acreage as the national average yield was 95 crates in 1953 as compared with 91 crates in 1952.

Three reports were issued on onions, all in 1953. New Jersey had about the same yields in the spring of 1953 as were obtained in 1952 and the previous three-year average. Market conditions were very unsettled as the New Jersey harvest was beginning. Part of this can be traced to manipulation of the price on the Chicago Mercantile Exchange. However, as the onions were marketed from Texas and the other early spring states, the supply was brought closer to the demand and prices declined. As of the end of June, the average price for New Jersey onions at the auction markets was about \$1.40 per 50 pound bag compared with \$2.23 in 1952.

One report was issued on tomatoes with information on the producing areas in the United States as of May 1. The spring crop was expected to be about 13 per cent higher than the 1952 crop as of May 1, but weather conditions have been such that the total production was less than the 1952 crop. The early summer group of states which had a total of 32,700 acres, is expected to have yields equal to those in 1952, based on July 1 conditions. The late summer group, based on the conditions at the same time, is expected to have an average yield about two bushels higher than the 1952 crop, for a total of 195 bushels per acre.

New Jersey Truck Crop News

The New Jersey Truck Crop News is issued cooperatively with the Trenton offices of the BAE and of the Weather Bureau of the U. S. Depart-

ment of Commerce. Through close cooperation and association among the Bureau and the two Federal agencies it has been possible to compile, edit and release information promptly to growers and buyers of the New Jersey crops. Approximately 2,000 persons receive Truck Crop News which is mailed under the franking privilege of the USDA at no cost to the State. About 700 of these persons are wholesale produce buyers to whom the sheet is sent in an effort to stimulate their purchases of New Jersey-grown commodities.

The crop information is assembled by members of the staff of the BAE and the Division of Markets, who furnish reports on the northern, central and southern producing areas each week. The Weather Bureau supplies all of the weather information which usually includes a five-day forecast, the rainfall reported for the previous week at the weather stations throughout the State and the accumulated totals of rainfall during the previous four weeks. This report is seasonal, being issued from May through October.

The 1952 season from the first of July through the summer and early fall months was not favorable for the production of good quality fruit and vegetables. The 1953 spring season has been favorable for most products and the quality of several, such as lettuce, dandelions and other early greens, has not been surpassed. Extensive and frequent rains hampered planting operations during the past spring seasons.

Auction News

The Auction News is devoted to the advertising of New Jersey fruits and vegetables and the fruit and vegetable auction markets in the State at which these commodities may be obtained. The expense, which includes postage, cost of paper and envelopes, is paid by the Cooperative Marketing Associations in New Jersey, Inc. through assessments collected from the fruit and vegetable association members. The editorial and clerical work is performed by members of the Bureau. Auction News is mailed to approximately 700 fruit and vegetable buyers, mostly in New Jersey and nearby states, the majority of whom have shown an interest in New Jersey markets.

Cooperative Trade Paper Advertising

In addition to the above, which is a direct mail advertising program, the same group of cooperative auction markets underwrites advertising in two trade papers, one national in scope and the other regional, covering most of the states east of the Mississippi. The objective of this advertising is to attract new buyers to the auction markets. The expense of this advertising

is borne equally by the Cooperative Marketing Associations in New Jersey, Inc. and the Office of State Promotion of the Department of Conservation and Economic Development.

Annual Potato Summary

The Annual Potato Summary was prepared and released as a printed circular as has been done since 1928. The information is used by statisticians, research workers, rail executives, bag manufacturers, dealers and growers. The report contains information on harvesting and marketing conditions for the year and lists shipments on a weekly basis. Pertinent information is included on competing areas, with f.o.b. and jobbing prices in important markets, distribution of the New Jersey crop by states, results of grading and inspection and types of packages used.

SERVICE WORK WITH COOPERATIVES

Service work of the Division with cooperatives takes many forms, but the Bureau of Market Reporting and Cooperatives is concerned chiefly with the legal and accounting phases of a cooperative's business. Advice is furnished on setting up and incorporating cooperatives. Considerable time is spent in analyzing the proposed by-laws which serve as the rules under which the cooperatives operate. These relate to the rights, privileges and obligations of members. The accounting phase is confined to an analysis of financial statements which are required by law to be filed with the Secretary of Agriculture. Unfortunately it is impossible to give each financial statement the consideration that it deserves, and efforts so far have been confined to compiling annual summaries of cooperative business such as totals of sales, expenses, taxes and similar items.

As the totals of the financial statements covering the 1951 year are compared with those that were obtained for 1949, the first year they were collected, it is apparent that cooperatives have increased the dollar value of the services to their members. For instance, purchases for members in 1951 were placed at 60 million dollars, whereas in 1949 this amount was only a fraction of this total. Most of the increase was caused by additional feed supplies sold by the existing cooperatives.

The value of the products sold for members, however, declined from about 66 million dollars to 45 million dollars, reflecting less volume and lower prices in many items. The value of services performed for members increased from about $3/4$ million dollars to $1-1/4$ million dollars. State, Federal, Social Security, Unemployment Compensation and income taxes, were about double and amounted to \$600,000 in 1951. Wages and salaries increased from about 3 million dollars to about $3-3/4$ million dollars. Some

of this was possibly increases in individual salary levels and the remainder, additional employees to carry on the increased cooperative work. Assets now amount to about 20 million dollars with members' equities equal to about 60 per cent.

The cooperatives appear to be in good financial condition, reflecting credit on the directors, officers and managers. Some groups carry on good member-relations programs, but there seems to be a need for greater participation in this kind of work by all cooperatives.

During the year the following organizations were incorporated in New Jersey under the Agricultural Co-operative Association Act:

Dairymen's Co-operative Promotional Association
 Northeastern Poultry Cooperative Association, Inc.
 The Poultry Farmers' Co-operative Association of Vineland
 Belford Sea Food Co-operative Association, Inc.

The last named association was formed by a number of commercial fishermen in the Sandy Hook area of New Jersey to reduce individual costs and to secure better and controlled distribution by cooperation. While sea food has not been specifically named in the cooperative law as an agricultural product, it is implied that it could be included as a farm product through a definition in Chapter 10 of Title 4 of the Revised Statutes. It was through this interpretation that this organization was aided in organizing as a cooperative under the Agricultural Co-operative Associations Act.

Assembly Bill 545 was introduced by Assemblyman C. William Haines of Burlington County to correct and clarify several points in the cooperative law. A provision which defined sea food as a farm product was included in this legislation. The bill has passed both the Assembly and the Senate and awaits the approval of the Governor.

The following cooperatives were dissolved during the fiscal year:

Belvidere Dairymen's League Cooperative Association, Inc.
 Branchville Dairymen's League Cooperative Association, Inc.
 Burnt Mills Dairymen's League Cooperative Association, Inc.
 Delaware Dairymen's League Cooperative Association, Inc.
 Fairview Dairymen's League Cooperative Association, Inc.
 Hampton Junction Dairymen's League Cooperative Association, Inc.
 Lebanon Valley Dairymen's League Cooperative Association, Inc.
 Pittstown Dairymen's League Cooperative Association, Inc.
 Raritan Township Dairymen's League Cooperative Association, Inc.
 Three Bridges Dairymen's League Cooperative Association, Inc.
 Vail Dairymen's League Cooperative Association, Inc.

West Portal Dairymen's League Cooperative Association, Inc.
Whitehouse Dairymen's League Cooperative Association, Inc.

The foregoing Dairymen's League organizations were locals of the Dairymen's League Cooperative Association, Inc. of New York City. A recent change in the New York State law has made it possible for these local organizations to function more easily as an integrated part of the parent New York association without being incorporated in New Jersey.

A few other cooperatives with small assets outstanding have been dissolved but their assets have not as yet been distributed. These include the Rosenhayn Farmers' Cooperative Marketing Association, Inc. and the Farmers Cooperative Dairy Association, Inc. of New Jersey.

The "New Jersey Cooperative News," prepared primarily for the purpose of exchanging ideas between cooperatives, has been issued bimonthly. Through it the Bureau gives advice on the provisions of the New Jersey cooperative law so that there is a better understanding of the rights, privileges and obligations of the cooperative, its members and the directors. The "News" also presents related items, such as interpretations of the Internal Revenue Act and rulings of law courts concerning cooperatives.

The Bureau has sponsored two meetings at which directors with their attorneys and accountants were invited in order to discuss provisions of the Internal Revenue Act of 1951. Lyman S. Hulbert of Washington, D. C., addressed the Farmers Week meeting in January 1952 on the legal aspects of the Revenue Act and William L. Bradley, an accountant, also chairman of the Standing Committee on Accounting for Cooperatives of the American Institute of Accountants, spoke at the meeting during Farmers Week 1953. The talks were mimeographed and sent to each cooperative.

A few individuals have requested a State association of cooperatives, one which might work with the National Council of Cooperatives and the American Institute of Cooperation. At the 1953 Farmers Week meeting a committee of men picked from service, purchasing and marketing cooperatives was requested to report on the pros and cons of the advisability of having such a State association. No recommendation for the formation of such a group has been received as yet by the Bureau.

In the event that it is formed, it would be used for the dissemination of information to consumer and urban groups and would endeavor to place cooperatives in a more favorable light, especially on tax matters.

DAIRY PRODUCTS MARKETING

The objective of this project is to aid in the development of a practical milk marketing program for the State. The major activity is the supervision of the production and distribution of milk under the New Jersey official grades and the expansion of the sale of such milk. These grades represent an effort on the part of the Division of Markets to recognize and identify nearby produced milk of definite quality standards. Other activities include cooperation with the Office of Milk Industry, the New Jersey Dairy-men's Council and other agencies and cooperation through which statistical information on livestock auction sales is obtained.

The dairy situation has been complicated by lengthy hearings relative to milk pricing during which no decisions were reached. These concern an attempt to add the whole or parts of New Jersey to the area designated as the New York Milk Shed. The organized dairymen of New Jersey have continually fought this proposal.

Testimony presented at a hearing that lasted for two months in 1952 on the plan had not been acted upon at the close of this fiscal year. A similar hearing was held in the spring of 1953 covering the pricing of Class I-C (milk produced under Federal Order 27 and sold in northern New Jersey which is outside of the marketing area defined in Order 27). This controversy has further intensified the relations between producers of northern New York and of New Jersey concerning the lower class I-C price paid New Jersey producers. Continued State control is favored by the New Jersey producers while New York is seeking to take over those markets through the Federal order. The result would be to lower the price to the New Jersey producer.

In seeking a solution to a problem that appears almost insurmountable, the new administration in Washington seemingly has ignored the evidence presented at the two hearings and has formed a so-called New York Milk Shed committee headed by Dr. Everett Case, president of Colgate University. The nine man Case Committee was appointed jointly by the U.S. Department of Agriculture and the New York State Department of Agriculture and Markets.

The representatives from New Jersey are the President of the New Jersey Farm Bureau and the Chairman of the New Jersey Dairymen's Council. This committee held its first meeting June 29, 1953 when a program for investigation was developed. On the agenda released by the chairman of this new committee, there are:

1. A proposal for Federal regulation of minimum prices to farmers for all milk produced for northern New Jersey. This will include consideration of a comprehensive order for the metropolitan areas of New York and northern New Jersey, a separate Federal order for northern New Jersey and the area of northern New Jersey to be covered.
2. The revision of transportation and location differentials applicable to the uniform price paid to farmers.
3. The revision of transportation and location differentials in fixing minimum class prices paid by handlers.
4. The revision of provisions for determining what plants and farmers are to be subject to the pricing and market-wide equalization provisions of the order.

Meanwhile, the New Jersey Office of Milk Industry has been quite active in its efforts to stabilize the industry within the limits of the State. On October 1 the OMI raised the prices to the producers 20 cents per hundred-weight, approximately one-half cent per quart; the retail price to the consumer of milk going up one cent per quart, with the balance of the one cent per quart being allocated to the dealers. This price continued in effect until April 16, 1953, when the price was decreased 80 cents per hundred-weight to the producer, with a retail price cut of two cents to the consumer. The retail price became a fixed price under the order.

At the end of the fiscal year an increase of 40 cents per hundredweight to the producer was ordered as of August 1, 1953, which still is 40 cents per hundredweight lower than April 1. A resulting increase of one cent per quart was ordered in the retail price.

A source of discontent has been the large percentage of surplus milk brought in as Class I-C, or as spot milk (milk not covered by any pricing plan), which is blended with the milk from New Jersey producers who are paid a low blend price.

NEW JERSEY OFFICIAL GRADES

The volume of milk sold under the New Jersey official grades showed a gain of 7 per cent over that of the previous fiscal year. There were 120,585 quarts being marketed daily, despite the loss of three cooperating dealers who found it more profitable to buy out-of-State milk at lower prices than to pay the New Jersey price. One of these dealers had been under the grades inspection program since 1931, when the grades were established; the other two also for long periods of time.

Only one new dealer was taken on during the period. It is almost impossible at present to interest more cooperating dealers as most of them feel that the purchase of out-of-State milk is essential to the conduct of their business.

At the close of the fiscal year there were 21 dealers processing 120,585 quarts of milk daily under the New Jersey official grades program. Of these, one distributes only raw milk and 20 distribute pasteurized milk.

Among the 21 dealers operating under the supervision of the Department of Agriculture, 14 are purchasing-dealers, 3 producer-dealers and 4 both produce and purchase milk. There are 359 producers involved in the production of this grade of milk.

When the New Jersey official grades were established, a rigid herd inspection system was introduced which at the present time serves as a model for several other inspection agencies, both in New Jersey and in other states. During this fiscal year there were 21,941 cows examined in accordance with the grade regulations.

EXAMINATIONS IN ACCORDANCE WITH GRADE REGULATIONS

July 1, 1952 to June 30, 1953

County	Herd Examinations	Animal Examinations	Animals Passed	Animals Isolated	Animals Condemned
Camden	1	20	20	---	---
Cumberland	1	18	18	---	---
Hunterdon	310	8,604	8,508	94	2
Mercer	32	1,265	1,229	35	1
Monmouth	4	87	87	---	---
Morris	71	2,517	2,501	16	---
Salem	16	347	344	3	---
Somerset	258	7,519	7,400	116	3
Sussex	36	1,372	1,360	9	3
Warren	5	192	192	---	---
Totals	734	21,941	21,659	273	9
			Number	Per Cent	
Herds in which all animals were passed			562	76.57	
Herds in which animals were excepted			172	23.43	
Animals passed			21,659	98.72	
Animals isolated			273	1.24	
Animals condemned			9	.04	

Another requirement of the New Jersey official grades is the physical examination of all employees on farms producing New Jersey Grade A Raw Milk and of employees in bottling plants handling the New Jersey grades. Each man taking the medical examination was required to be examined by a physician once during the year and pronounced by the examining physician a safe individual to handle milk. After these requirements are met, a card of identification is furnished to that effect. There were 136 milk handlers' cards issued during the year.

The importance of microscopic analysis of samples of milk in determining causes of defect is amply demonstrated by the methods used in policing the New Jersey official grades. While this work is more complete than ordinary methods of control, the results justify the extra effort as well as the extra expense. During the 22 years of this close microscopic supervision of milk qualifying for New Jersey official grades, not a case of infectious disease has been traceable to the milk supply. There were 4,926 samples collected for analysis last year.

During the year, the municipal boards of health in the metropolitan New York area started an intensive drive on mastitis. They ruled that a cow suffering from mastitis is a diseased cow and, according to the sanitary code of the State Board of Health, must be eliminated at once. Considerable time was spent in securing a modification of this ruling, and the local boards agreed to cooperate with the Department of Agriculture in handling high bacteria counts due to mastitis. The agencies agreed to enforce a stringent application of isolation and quarantine.

Complete records of infected cows are kept current at all times so that the status of these infected cows can be easily determined. As a result farmers producing milk under the New Jersey grade were saved thousands of dollars which would have been lost by either slaughter of cows or unwarranted quarantines of milk.

LIVESTOCK AUCTION MARKETS

The trend of sales at the livestock auctions of New Jersey is best illustrated by the reports of the six markets. All of them showed a decrease of 18,136 head, or 11 per cent, for the year, while the gross sales dropped from \$13,040,655.32 to \$8,506,930.71, a decline of 34.8 per cent. This trend shows that with falling prices, there seems to be a tendency to sell to itinerant buyers rather than through the auction market facilities.

The price situation was due almost entirely to the deflation of the abnormal prices of previous years and the falling market for beef cattle in the West. The cull cattle in the East and South also showed a tendency to drop when first-class cattle were sold on a falling beef market.

The number of head marketed over the six auctions reporting showed a total of 146,553 animals, which is estimated at about two-thirds of the possible volume. Continued support of the cooperative auction markets and well conducted private markets will remain beneficial to the farmer-patron.

LIVESTOCK AUCTION MARKETS

	Head	Value
Flemington	21,736	\$ 990,033.16
Hackettstown	42,954	2,463,534.99
Mount Holly	3,758	108,574.12
New Egypt	11,023	986,984.01
Sussex	37,067	1,919,997.84
Woodstown	29,985	2,037,806.59
Totals	146,533	\$8,506,930.71

SPECIAL SERVICES

The reorganized New Jersey Official Grades Milk Dealers Association, Inc. continued through the 1952-53 fiscal year, with monthly meetings. The annual meeting of the association was held at the Far Hills Inn, Somerville March 27, with about 300 persons attending. A number of promotional programs were discussed at the monthly sessions, but due to the uncertainty of conditions and the demands on the time of cooperating dealers, little progress could be made. Plans were completed, however, for an exhibit by two dealers at the Flemington Fair.

The supervisor of dairy products standardization again served as a member of the program committee of the New Jersey Dairymen's Council and has attended all meetings of the Council during the year.

BUREAU OF FRUIT AND VEGETABLE SERVICE

The marketing of fresh fruits and vegetables produced in New Jersey is the chief concern of the Bureau of Fruit and Vegetable Service. Included in the many phases of this program are the establishment and development of outlet facilities such as local auction markets, terminal markets in large adjacent cities and city market and consumer and educational promotional work. It further includes rendering assistance to growers and shippers in better grading and packing and supervision of inspection and grading, in accordance with Federal and State standards. These and other related activities are designed for the specific purpose of creating greater demand and higher returns for New Jersey fresh fruits and vegetables sold for fresh consumption or delivered to processing plants.

The Division of Markets has always maintained close relationship with New Jersey producers in order to assist them with many of the problems arising from the ever-changing conditions that affect the marketing of important crops. The policy of the Division has been to keep abreast of the changes and disseminate, in various ways, information that may be helpful to producers and handlers in their marketing operations.

The administration of inspection and certification of New Jersey-produced fresh fruits and vegetables to be marketed in the fresh form and grading of lots delivered to processors is the principal function of this Bureau. The inspection and grading work is done in accordance with official Federal or State standards for the respective product or other specifications as may be incorporated in contracts between buyers and growers. All methods of procedure are conducted in accordance with Federal and State approved inspection practices.

In New Jersey the inspection service is operated under a three-way co-operative agreement. The cooperators are the U.S. Department of Agriculture, the State Department of Agriculture and the New Jersey Agricultural Society. Under this agreement each organization has certain functions and responsibilities. The U.S. and New Jersey Departments are jointly responsible for the proper interpretation and application of grade standards and general supervision of the conduct of the work. The U.S. Department is responsible for supplying trained and experienced personnel, also for training and licensing new personnel when needed. The New Jersey Agricultural Society is responsible for the collection of fees for services and payment of costs of operation of the service.

This arrangement has been very satisfactory to all concerned since its institution in August 1945. The amount of work performed under the agree-

ment has varied from year to year, but the fluctuations have been influenced greatly by crop production, various types of controls and regulations and current market prices during harvesting periods. The agreement provides an area of mutual understanding between the State and Federal departments in which each party makes available a national and state service which neither could so effectively render on a separate basis.

Shipping point inspections on all products, except those for processing, during this fiscal year, amounted to only slightly over 19 per cent of the last fiscal year, the lowest number of inspections since 1941. Several important factors contributed to such a marked decline, but the reduction in potato work was the main reason.

The inspection of raw products for processing is becoming increasingly important each year throughout the United States. This is especially so in the postwar period when the freezing of fruits and vegetables has made such phenomenal growth. This expansion has been matched by the improvement in the quality of service performed, by application of established inspection principles and procedures, and by the development of better training and visual aids. Much time and study are being given to improved mechanical devices which may eliminate or accurately check the human element of judgment which is subject to error. The many loads of raw products brought to inspection stations throughout the production areas in the State has afforded the inspection service an opportunity to assist growers in improving their harvesting and marketing practices.

PURPOSE OF INSPECTION

The shipping point inspection service is set up to aid in the orderly marketing of fresh fruits and vegetables. This service is permissive and provides an unbiased official inspection and certification at a reasonable cost to applicants. Inspection of commercial quantities of produce at point of origin is made available through the shipping point service. These include carlots, trucklots, warehouse and storage lots. Inspections may be made at railroad sidings, on farms, in storages, both common and cold, and elsewhere.

As already stated, the service is permissive and requests are on a voluntary basis. While not all cars and trucklots are inspected by this permissive service, most of the trading throughout the United States and internationally is done on the basis of U.S. Standards and official inspection and certification. The service provides an unbiased official certification upon the basis of which sales may be made to buyers at distant points within the United

States and in foreign countries. It offers proof of compliance with State and Federal regulations and laws, export requirements and Government purchase contracts.

Banks require documents of certification before authorizing credit and controversies between carriers, storage companies, shippers and buyers are customarily decided in accordance with the facts contained in certificates covering such products as may be involved in disputes. It furnishes information to growers, shippers and receivers that enables them to trade on a basis of mutual understanding through the use of uniform standards. The Bureau of Fruit and Vegetable Service through the shipping point inspection service also assists New Jersey growers and shippers by giving advice on proper grading, packaging, loading and handling practices.

In the field of products for processing, most processors in New Jersey contract with growers for such raw products as asparagus and tomatoes, some others for apples, carrots, sweet potatoes, green tomatoes and red sweet peppers. Contracts are based on Federal or State standards and prices are fixed between grower and processor in advance of the season. Each load delivered to the processing plant or receiving station is sampled and graded by inspectors employed by the New Jersey Agricultural Society and approved by the Department. The results obtained on the graded sample are applied to the entire load, thus determining the value of each load delivered. The price received by the grower is directly proportionate to the quality delivered.

In the application of this method of purchase, delivery of superior quality to the processor lowers his cost of preparation for processing. The customer receives a better product and operational costs of the processor are lowered. This is usually reflected in higher contract prices which increases returns to all producers of such commodities. The system tends to encourage growers to produce and deliver a high quality raw product to the processors.

CERTIFYING FRESH PRODUCE

Apples

This fiscal year was an off year for the inspection and certification of apples. Two factors materially affect the work with apples as well as with other commodities. The main factor, of course, is the condition of the domestic markets. The second factor is the condition of foreign markets and the monetary situation in the countries ordinarily expected to import apples from the United States.

The over-all crop of apples for the United States in 1952 was considerably less than normal. This pattern was true of the northeastern producing

states, but to a lesser degree. In New Jersey the production was only about 75 per cent of normal and about 40 per cent below the 1951 production figures.

Under these conditions marketing is made easier through good demand and relatively high prices. Receivers in general are less prone to criticize quality and shippers are inclined to exercise less care in grading and packing. By the same token, there is less need for inspection and grade certification at shipping points. With a good domestic market, prices are usually at a level which discourages purchases by dollar-short foreign countries, and apples exports are automatically curtailed. This directly affects the volume of inspection in an adverse manner, since the Export Apple and Pear Act makes certification of apples for export mandatory.

This fiscal year only 157 lots of apples covering 58,963 containers were inspected and certified compared with 796 lots covering 365,648 containers inspected last year. All containers were of 1 bushel or 1-1/8 bushel capacity.

Green Corn

In 1945 the Cooperative Growers' Association, Inc. of Beverly, developed a marketing program with certain large chain store organizations in which the association agreed to deliver field-fresh green corn each day to stores located within quick and convenient truck-hauling distances. The program was very successful and has been continued each year since its inception. The original purpose of the program was to supply consumers with field-fresh corn as well as to assist in the marketing of the tremendous volume of green corn produced in Burlington County. The amount of volume moved each year under this program has fluctuated considerably depending upon production. The program has developed to the point where it has become essential to the green corn industry in the county and all indications point to a progressive enlargement from year to year.

Growers participating in the program begin their daily harvesting operations around midnight using spotlights attached to their tractors. Corn harvested in the early morning hours is graded, packed, inspected, loaded and shipped between 3:30 and 5 a.m. The loaded trucks make deliveries to chain supermarkets in Philadelphia and nearby areas. When the stores open for business, they are able to offer corn to the consumer which has been harvested on the same day. Corn destined for distant shipments is packed and loaded almost all day and into the night, with time out in the afternoon during the hottest part of the day.

A necessary part of the program since its inception has been the inspection and certification of most of the corn shipped, on the basis of the U.S.

Standards for Green Corn. Only experienced Agricultural Society inspectors under the supervision of the Bureau of Fruit and Vegetable Service are assigned to the work.

The shipping season for green corn is extremely short compared with most other crops, making it necessary to move tremendous volume within a period of three to four weeks. Everyone connected with the deal, including the inspector assigned to do the certification work, must put in long hours daily during the shipping season. He is on the job each day by 3:30 a.m. and often works until 11:00 p.m., with only a few hours off each afternoon.

The market also sells to receivers other than those participating in the field-fresh program. These lots are shipped outside of the areas considered as nearby, and shipments are made throughout the day with no set hours for delivery.

The shipping season began last year on July 6 and continued throughout the month and a few days in August. All lots were inspected but some were not reported on certificates. Lots not reported were usually of poor quality, and in some instances were not handled by the market. During this season 97 trucklots covering 31,779 packages were inspected and certified. Most corn was packed in wire-bound crates but bushel baskets and paper bags were also used. Each type of package contained from 50 to 55 ears. About 12 pounds of crushed or cracked ice were scattered throughout in each paper bag of sweet corn. During the previous season, 92 lots were certified covering 50,794 packages of the same capacity as above.

Besides the field-fresh program, there were applications from other Burlington County shippers for inspections of trucklots of green corn. These were handled by inspectors from the Hightstown office and consisted of 16 truckloads containing 7,749 packages. Some of this corn was exported to Canada, but most of it went to the Quartermaster Corps and moved to Northeast area training centers. Total volume of green corn inspected and certified for this fiscal year was 113 lots containing 39,528 bushel containers.

White Potatoes

Adverse weather conditions prevailing generally throughout the planting, growing and harvesting seasons were detrimental to the 1952 crop of white potatoes in New Jersey. Yield was well below that of 1951 and acreage planted was approximately 2,000 less. Excessive rainfall during the growing season flooded low areas in fields and damaged vines to such an extent that such areas were abandoned, further reducing the acreage.

For the past several years there have been various types of programs regulating the marketing of our white potatoes. Up to and including 1950, potatoes were included in the non-basic group of commodities under Government price support. In 1950 and 1951 marketing was regulated under a Federal Marketing Agreement which limited the grades and sizes moving into fresh market channels.

Under these programs and regulations the Bureau's shipping point inspection service was required to inspect and certify grades and sizes of most of the production. Price supports ended in 1950 and the marketing agreement was voted out in April 1952 when a referendum was held among producers and handlers to determine whether it should be continued in New Jersey. With no Government support or controls of any kind on white potatoes, there was only a purely voluntary inspection deal for this season.

Movement of the crop began in a small way the second week in July, but shipments increased rapidly toward the end of the month and continued quite heavy throughout the harvesting season which reached its peak the last two weeks in August and tapered off rather rapidly thereafter. Harvesting was practically completed by the end of October, but a rather large percentage of the crop was stored for late fall and winter shipment.

According to Federal figures, the 1952 potato production in New Jersey was 4,693,000 bushels or 2,815,800 hundredweights. This was well below the production of 4,372,800 hundredweights in 1951 and the 10-year average of 6,402,600 hundredweights.

At the beginning of the shipping season prices were high, the demand was good and the markets strong. This condition maintained throughout July, and prices reached their peak about the middle of August after which they leveled off. The leveling off was mainly due to heavy supplies from New Jersey and competing areas. Although terminal markets did not become overloaded, supplies were ample and receivers soon became quality conscious. This was followed quickly by a pricing structure based on quality.

Early in September, New Jersey potatoes were losing favor in most markets mainly because most arrivals in terminal markets were showing varying amounts of a jelly-like rot assumed to be caused by irregular moisture supply during the growing season. This condition never reached any serious proportions, but it was enough to create a distinct aversion to Jersey potatoes on the part of receivers in most of the markets and they turned to other producing areas for supplies.

At the very beginning of the season with favorable market conditions and no controls or regulations on white potatoes, it was anticipated that the

Bureau could not expect many requests for inspection. With that in mind, only a skeleton force of inspectors was assigned to potato work. This year there were only 1,748 inspections, covering 462,869 hundredweights, compared with 9,989 inspections, covering 2,893,563 hundredweights in 1951.

CANNERY CROPS

Asparagus

The grading and certification of green asparagus for processing entails the use of and supervision of more personnel than any other single operation in this Bureau primarily because of the competition between processors in their bids for contracts with growers. In their efforts to get contractors, most processors go all-out for the convenience of the growers. In this connection, receiving stations are established at strategic locations throughout the producing areas, thus providing short hauls for growers in making deliveries. Other things being equal, growers are inclined to contract with the processor having a nearby receiving station. The spreading out of receiving stations necessitates an increase in inspectors to handle the grading operation. This season there were 30 receiving stations located throughout the producing areas and operated by 5 processors and 10 brokers. The services of 45 inspectors were required to handle the grading work.

As in the past, most contracts this year were based on the New Jersey Standards for Green Asparagus for Processing. Contracts deviated from the actual grade specifications only from the standpoint of diameter and length of spears. The wording of the original standards permit size specifications to deviate from those prescribed in the grades when the contract between the processor and grower "otherwise specifies" the acceptable sizes. For the past several years contracts have specified a maximum length of 7 inches and a minimum diameter, measured at the base of the spear, of $3/8$ of an inch. Contract specifications with reference to amount of green color, freshness, and quality factors were unchanged from those in the grade.

Growers were paid for all asparagus meeting the following specifications: N. J. No. 1 quality, 7 inch spears with not less than $4\frac{1}{2}$ inches of green color, $3/8$ inch minimum diameter. Samples were taken from each lot delivered and were graded by the inspectors. The percentages of pay weight, off grade and butts were determined by sorting the samples. The percentages, so determined, were applied as the grading percentages for the entire lot represented by the sample, thereby establishing the value of the lot in accordance with the contract price. No payment is received by growers for spears below N. J. No. 1 quality or for butts. A butt is that part of the spear in excess of the maximum specified length.

Although most asparagus for processing is contracted on the basis of the New Jersey Standards, there is a considerable volume delivered under contracts between processors and growers for which no particular reference is made to the standards. The terms of the contracts state specifically what the acceptable quality shall be, enabling the inspectors to grade in accordance with the specifications as stated therein.

This asparagus season was somewhat different from most. The season started at about the normal time, the last week of April. The weather was cool and volume delivered was comparatively low, although quality was better than normal for first deliveries. During May the weather was generally good for growth and volume for the month was above normal. Reliable sources in close contact with the industry reported that about 65 per cent of the season's volume was delivered by the end of May. Quality in May was very high and would have been even better if growers in general had supervised their cutting operations a little closer and prevented the harvesting of spears which had not attained sufficient growth.

With the heavy deliveries in May, most processors looked forward to a better than normal pack. However, cold weather occurred again toward the last of May and continued into early June. This retarded growth and reduced volume to a considerable extent. When weather conditions returned to normal the expected second peak of deliveries did not materialize and most processors ended the season with a smaller pack than was anticipated for 1953.

In the spring of 1952, under contracts based on the New Jersey Standards, there were 44,388,836 pounds of asparagus graded for processing. Of this amount, an average of 73 per cent conformed to grade and size specifications for which growers were paid at contract prices. An average of 8 per cent was below the grade and size specifications for pay weight and an average of 19 per cent was classified as butts.

This season, under the same contracts, there were 45,204,332 pounds graded. An average of 73 per cent met grade and size specifications; 7 per cent was below grade and size specifications; and 20 per cent was classified as butts.

Under canner-grower contracts a comparison of the two seasons is as follows: for the 1952 season the Agricultural Society inspectors graded 3,769,846 pounds with averages of 89 per cent pay weight, 1 per cent culls and 10 per cent butts; for the 1953 season, 4,668,268 pounds were graded with averages of 87.8 per cent pay weight, .3 per cent culls and 11.9 per cent butts.

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DELIVERIES AND AVERAGE GRADES OF ASPARAGUS FOR PROCESSING
 BASED ON NEW JERSEY STANDARDS
 1953

Week Ending	Loads Inspected	Total Pounds	N. J. No. 1 $\frac{3}{8}$ Inch Min.	PER CENT	
				N. J. No. 2, N. J. No. 1 Small and Culls	Butts
April 25	34	12,342	67	7	26
May 2	2,231	1,762,770	70	8	22
9	4,855	6,285,570	73	6	21
16	5,738	8,039,646	73	6	21
23	5,576	6,634,014	74	5	21
30	4,814	4,300,824	78	6	16
June 6	4,608	4,721,322	76	6	18
13	5,247	5,143,052	74	6	20
20	4,687	4,254,826	75	7	18
27	4,264	3,439,004	68	11	21
July 4	989	610,962	64	14	22
Season	43,043	45,204,332	73	7	20

DELIVERIES AND AVERAGE GRADES OF ASPARAGUS FOR PROCESSING
 BASED ON CANNER-GROWER CONTRACTS
 1953

Week Ending	Loads Inspected	Total Pounds	Pay Weight	PER CENT	
				Contract Culls	Butts
April 25	37	13,124	97	---	3
May 2	265	253,946	88	1	11
9	589	669,120	86	---	14
16	738	873,732	88	---	12
23	649	674,424	89	---	11
30	485	424,898	89	---	11
June 6	580	484,058	89	---	11
13	592	503,778	87	---	13
20	523	418,540	87	1	12
27	491	301,648	87	1	12
July 4	131	51,000	95	1	4
Season	5,080	4,668,268	87.8	0.3	11.9

Tomatoes

Unlike the season of 1951, which was the best from the standpoint of high quality and average yield per acre since the inception of tomato grading in New Jersey, the 1952 season was plagued with continuous adverse weather conditions from beginning to end. Except for one previous season, 1942, it was the poorest on record.

Excessive rain and cold weather prevented the setting out of plants in the fields at the proper time. Many growers were unable to prepare their ground and others were caught with their supply of plants on hand and fields too wet to set them out. Plants that were set prior to the rainy and cold weather seemed to remain in a more or less dormant state, and it was estimated that several million failed to survive and had to be replanted.

After the excessive rains and cold weather during May and early June, summer temperatures and drought followed quickly. Hot and dry weather prevailed most of June and July. Tomato vines appeared in healthy condition but the hot, dry weather caused most of the crown-set blossoms to drop. The fruit that did set was subjected to extremely high temperatures and, in some areas, periodic torrential rains.

When the canning season began the last week in July, first deliveries showed a marked variation in quality delivered from various producing areas. Tomatoes showed distinct signs of the weather to which they had been subjected during their growing season. Some showed discolored radial stem cracks indicating an over supply of water, others were pale and faded in color or showed blistered areas on the shoulders indicating exposure to extremely high temperatures or to the direct rays of the sun. The over-all quality delivered to processors was generally poor until the middle of August when weather conditions turned more favorable. A sharp upturn in both volume and quality followed, and by the end of the month it appeared that there was a possibility of an average season.

This improvement was shortlived. September came in with a heavy rain storm which lasted throughout one day, followed by heavy showers during the following night. Tomato quality dropped to an all-time low during the first week in September. Excessive moisture caused fruits that were ripe or turning to crack and even green fruits of any size showed permanent injury. White mold developed in the fresh cracks, followed, in a matter of hours, by hard mold and decay and in some cases complete breakdown and souring of the fruits most severely affected.

The cracked fruits afforded excellent breeding grounds for *Drosophila*, commonly known as sour flies. September usually provides the moderate temperatures at which the adult fly is most active. Eggs are deposited in fruit cracks, whether fresh or fermented, and the complete cycle from egg to adult is only about 120 hours. A few days after the first of September rains, *Drosophila* became a menace to tomato packing. It became necessary for tomato processors to set up measures to control the insect and prevent contamination. At best, the control was only partially effective, and most processors closed their season's operations from one to three weeks earlier than normal.

The effects of the rains in early September were lasting, and although the weather became generally favorable during the balance of the month, tomato quality remained at a relatively low level.

Twelve processors purchased tomatoes on the basis of the U. S. Stand-

ards for Tomatoes for the Manufacture of Strained Tomato Products. Grading service was performed by Agricultural Society inspectors at the 16 receiving stations located throughout the main production areas.

The total volume graded was 127,418 tons, and the season's average grades were 57 per cent U. S. No. 1, 39 per cent U. S. No. 2 and 4 per cent culls. The 1951 crop figures show a total volume graded of 215,875 tons with average grades of 70 per cent U. S. No. 1, 28 per cent U. S. No. 2, and 2 per cent culls. Average yield per acre for 1952 was 5.5 tons and for the season of 1951 the average was 9.84 tons.

SUMMARY 1952 CANNERY TOMATO SEASON AND COMPARISON WITH PREVIOUS 10 YEARS

Seasons	Total Tons	U. S. No. 1 (Per cent)	U. S. No. 2 (Per cent)	Culls (Per cent)
1952	127,418	57	39	4
1951	215,875	70	28	2
1950	195,697	69	29	2
1949	147,076	63	34	3
1948	132,561	60	35	4
1947	204,395	62	35	3
1946	107,737	65	33	2
1945	73,549	64	33	3
1944	112,801	68	31	1
1943	149,786	66	32	2
1942	179,353	55	42	3

Other Cannery Crops

While asparagus and tomatoes are the two main crops for which the Bureau's grading service is requested, 2,979 tons of carrots, 1,157 tons of green tomatoes, 812 tons of red sweet peppers and 37 tons of sweet potatoes were also graded. These products were graded on the basis of the U. S. Standards for Processing for the respective commodity.

Other Vegetables

Shipments of fresh asparagus to Canada was resumed again this season on a rather large scale. Local brokers in the Swedesboro area handle the purchasing and shipping of the asparagus which is delivered to Canadian processors. Most of the asparagus is bought at the auction markets while some is delivered to the broker's warehouse on a contract basis.

Three types of containers were used this season for shipping asparagus to Canada, the regular standard pyramid type asparagus crate, used tomato lugs and climax baskets. Most of the volume was moved in the pyramid crate, which contained approximately 30 pounds net. Some of the asparagus bought in pyramid crates from auctions was unpacked and trimmed to a length of 6 inches and repacked in climax baskets for shipment. Asparagus purchased directly from growers was trimmed to about four inches

in length and packed upright in used tomato lugs, eliminating a great deal or all of the unusable portion of the spears and reducing the weight. This materially reduced the amount of the Canadian tariff on each load.

Asparagus purchased from the auctions was inspected on the basis of the U. S. Standards for Asparagus for Fresh Market. The contracted asparagus was inspected on the basis of the New Jersey Standards for Green Asparagus for Processing. In order to meet the Canadian Import Requirements, all lots of fresh asparagus must at least meet the specifications of the U. S. No. 2 grade for fresh market asparagus.

There was no difficulty experienced this season in packing to meet these requirements and the following volume was certified as meeting Canadian Import Requirements: 13,829 pyramid crates of 30 pounds each, 23,643 climax baskets of 9.5 pounds each and 9,388 lugs of 16 pounds each, a total of 789,687 pounds. Transportation was in refrigerated semi-trailers, 43 loads being required to transport the volume. There were two carlots of asparagus inspected for condition for domestic shipment, containing 1,236 pyramid crates.

In addition to the main products for fresh market or processing, the Bureau also supervised the inspection and certified shipments and storage lots of such products as snap beans, cabbage, carrots, cucumbers, lettuce, onions (dried and green), peaches, sweet peppers, rutabagas, sweet potatoes, spinach, turnips and mixed vegetable lots. A total of 56 lots were inspected, covering 18,980 packages. Federal-State inspectors were also stationed at several of the shipping point fruit and vegetable auction markets for inspection and arbitration purposes.

While the primary project of this Bureau deals with inspection and certification of fruits and vegetables produced in New Jersey and shipped both intra and interstate, it is also responsible for making inspections at the request of receivers at various New Jersey terminals on products moving into the State. Most of these requests are for inspections on potatoes, but many inspections are also made on various other commodities.

Only men certified by letter of authorization from USDA are eligible to make terminal inspections. In addition to the chief of the Bureau, there are two full-time Federal-State inspectors employed by the Society and one Department inspector who have such authorization in New Jersey. Terminal inspections are certified on straight Federal certificates rather than the Federal-State type used for reporting shipping point inspections.

During this fiscal year these men made 187 terminal inspections on such products as potatoes, cabbage, carrots, celery, horseradish roots, onions,

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oranges, pears and watermelons. Total volume covered was 98,484 packages of various kinds, 85,610 pounds of oranges in bulk, and 1,600 pounds of watermelons. In addition, 36,992 pounds of various fruits and vegetables were inspected and certified for delivery to State hospitals and institutions as replacements for items rejected upon original delivery.

TEN-YEAR RECORD OF SHIPPING POINT INSPECTIONS BY PRODUCTS

	1943-44	44-45	45-46	46-47	47-48	48-49	49-50	50-51	51-52	52-53
Apples	151	408	47	349	213	100	789	234	796	157
Asparagus	---	16	6	44	3	50	93	46	10	45
Beans	2	3	1	---	---	---	---	1	---	1
Beets	6	3	17	---	---	---	---	1	---	---
Cabbage	3	22	14	4	13	3	8	5	4	7
Carrots	16	4	3	2	5	5	6	---	---	1
Cauliflower	---	---	---	---	1	5	2	---	---	---
Celery	---	1	2	6	11	5	2	---	---	---
Corn	---	1	51	82	100	91	37	67	92	113
Cucumbers	6	8	3	1	2	3	8	---	1	4
Eggplant	1	12	3	---	---	---	---	---	---	---
Lemons	---	---	---	1	1	---	1	---	---	---
Lettuce	---	20	2	4	1	4	1	2	---	5
Onions	---	3	26	10	38	36	28	15	42	14
Onions, green	---	---	---	---	---	10	---	---	---	2
Parsley	---	---	---	---	---	---	1	---	---	---
Parsnips	---	11	7	---	---	---	---	---	---	---
Peaches	1	3	7	3	---	---	1	1	5	3
Peppers	17	52	50	12	78	36	48	---	5	5
Potatoes	5,206	2,827	5,994	11,333	14,066	12,586	10,454	18,429	9,989	1,748
Radishes	---	1	---	---	1	7	3	---	---	---
Rhubarb	---	---	2	---	---	---	---	---	---	---
Rutabagas	---	---	2	---	---	---	---	---	---	3
Spinach	1	13	17	---	1	---	2	---	---	1
Squash	---	7	1	---	---	---	1	6	---	---
Sweet Potatoes	47	178	20	41	5	33	5	26	12	7
Tomatoes	---	---	---	---	6	---	1	1	---	---
Turnips	1	2	21	15	2	---	1	---	---	1
Mixed fruits and vegetables	---	---	---	---	357	684	550	---	---	---
Mixed vegetables	9	77	65	31	210	155	128	3	---	2
Totals	5,467	3,672	6,361	11,938	15,114	13,813	12,170	18,837	10,956	2,119

MARKET ACTIVITIES

No new markets, either in cities or at country points, were developed during the year. Cooperative work with nine shipping point markets and with three city markets continued on the same basis as in recent years. Some improvements in methods of operation on these old markets have been developed, and in these improvements the Bureau has cooperated through advice and with some supervision. Cordial relations with the operators of other city markets in the State have been continued and occasional contacts have been made.

During the year persons from the office accompanied visitors to various

markets in the State. Usually these visitors were from neighboring states where a need for market development had risen, although some were from foreign countries. Several marketing experts from the Federal Department and an occasional investigator from an institute making a survey likewise have been helped. Often the needed information is partly obtained by conferences in the office of the Bureau.

In general, the marketing program in New Jersey is acknowledged to be a practical one. The plan of farmer ownership under a cooperative association arrangement is generally praised. Such a plan develops a pride in good management and a loyalty on the part of the member-producers that goes a long way in making the markets successful. They are strategically located in the heart of producing areas, are served by good roads and are reasonably near large consuming centers. The farmer-owners also recognize that a large number of satisfied buyers is a necessity for **fast movement of fruits and vegetables to market** and have taken steps to improve the services rendered to their buyers.

As the markets serve both large and small growers and **offer a variety of products**, buyers have found that they can purchase their needs in large or small quantities of the kind and variety they desire and transport their purchases quickly to the point of distribution or retailing. As some experts have pointed out, this saves much handling, unnecessary transportation and delivers a fresher, better product to consumers, often at a lower price at the same time returning a better price to the producer.

As in former years, the Division has worked closely with the management of the associations operating farmers' markets. Eleven of the markets make weekly reports to the office and supply information on volume and prices, with advance information which is used in promotional and statistical work. The Division has made this material available to economists at the College of Agriculture and to the Bureau of Agricultural Economics of the U. S. Department of Agriculture.

Representatives of the Division work closely with directors, committees and managers of the associations and attend all annual membership meetings, the majority of the monthly directors' meetings and special meetings on request.

Shipping Point Auction Markets

As in former years, information is given for the complete calendar year rather than break the information into parts of two years to cover only a fiscal year. Therefore, the entire marketing year of 1952 is covered and also six months of 1953.

Prices on all fruits and vegetables sold over the auctions were considerably higher in 1952 than in 1951. As the 1953 season progressed, weather conditions were such that the volume of products sold increased over the corresponding period of 1952. Prices of some important crops, however, were lower, while prices of other crops, notably berries, were higher. Volume of sales the first six months of this year were about 20 per cent greater and prices for all commodities sold were about 3 per cent lower.

There are four spring crops that make up the greatest volume of all early crops sold at the cooperative auctions. These are spring greens, which include dandelion, broccoli-rabe and rape; asparagus, lettuce and strawberries. Collectively, these four items showed a slight decrease in volume over the spring of 1952. There was, however, a greatly increased volume of some other vegetables.

Spring greens showed a decrease in both packages and price. Asparagus, the most important crop in the spring, showed an increase in volume but was priced about two cents a bunch lower than in 1952. There was a decrease in volume of strawberries sold, but the return was 93 cents more per 16 quart crate than in 1952. The sales of lettuce were 23,246 crates below the sales in 1952, but prices were 23 cents a crate higher.

The Division has felt for some time that the cooperative associations, which were developed originally to sell products of their members by the auction method, should attempt to be of greater service through more diversified sales and other services. In Cedarville a project whereby the association is washing, waxing and wrapping green tomatoes has been developed. Also installed in Cedarville is equipment for icing loads to insure delivery at more distant markets in better condition.

The Landisville association has built a large storage building for sweet potatoes, and packs and grades sweet potatoes for market. That association also contracted with processors for the delivery of 100,000 bushels of sweet potatoes for canning. In addition to sweet potato storage work started at Hammonton several years ago, that association has contracted for its members for the delivery of several hundred thousand pounds of blueberries to processors. By doing this, the fresh market has been relieved of possible surpluses and the producers have obtained a fair price for their berries. The Tri-County association in Hightstown has also contracted with processors, selling asparagus and cauliflower for its members.

Several of the associations have developed a supply business over the years selling many commodities such as seeds, fertilizer and packages to their members. These associations have done much to improve efficiency in marketing by advocating and supplying better packages.

The supervisor of fruit and vegetable standardization has devoted the greater part of his time to these very important auction markets. Several years ago he was instrumental in organizing an association of the managers of these markets, through which a cooperative spirit among the operators has been developed. Improvements which have originated at any one have been made possible at others as soon as proven advantageous. The supervisor has held the position of secretary of the managers' association since it was organized.

As new packages are put into general use, the Department has taken steps to legalize them for use under the joint promulgation of the Department and the Division of Weights and Measures of the Department of Law and Public Safety.

SUMMARY OF SALES AT FRUIT AND VEGETABLE AUCTION MARKETS

Market	Season of 1952		Season of 1951	
	Packages Sold	Value of Sales	Packages Sold	Values of Sales
Beverly	228,630	\$302,197.84	324,319	\$317,776.43
Beverly Consigned	----	463,552.26	----	----
and Special	24,588	72,267.41	341,000	602,873.00
Cedarville	613,580	1,344,423.38	810,492	1,444,805.73
Glassboro	210,078	446,681.97	359,643	611,241.02
Hammonton	176,188	607,459.55	238,458	683,856.15
Hammonton to Processors	----	65,706.80	----	----
Hightstown	329,672	453,012.28	319,801	372,156.41
Hightstown Special Sales	22,964	90,951.07	30,597	51,784.95
Landisville	478,207	1,127,205.10	512,174	799,551.08
Landisville Consigned	----	----	----	----
and Special	67,473	131,443.67	98,983	148,698.00
Pedricktown	127,511	420,377.43	162,831	484,289.91
Swedesboro	580,327	1,685,122.00	866,456	2,015,557.00
Vineland	783,026	1,359,657.46	897,891	1,276,490.70
Totals—by auction	3,527,219	\$7,746,137.01	4,492,065	\$8,005,724.43
Value—all sales	----	\$8,570,058.22	----	\$8,809,080.38
Average price per package (by auction), 1952				\$2.196
Average price per package (by auction), 1951				\$1.782
Per cent of increase in price per package, all commodities				23.23%
1952 over 1951				
(In addition to markets listed, other markets may have had special sales, no record of which is available in Division of Markets office).				

City Farmers' Markets

It is generally believed that the old institution of a market in a large city where farmers come with their loads and sell to dealers or jobbers is declining in importance. There are several reasons for this decline. The situation is not localized in New Jersey, but is prevalent over most of the country. It is a situation that has developed over many years and probably started with the advent of the motor truck and first-class hard-surfaced roads. Buyers can travel out to the farms and buy direct from the growers. Then too, the truck-growing areas around our cities are shrinking fast because of decentralization of industry and housing developments. Another factor is the

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supermarket. Large chains whose component parts used to buy in terminal markets or from farmers direct now do their buying in producing areas and have the supplies shipped to warehouses for redistribution.

The condition mentioned is true in New Jersey with one striking exception, the Farmers' Market in Trenton. That market, which is operated by a farmers' cooperative association, continues as a retail market. The farmers who sell from stalls at the back of their trucks, which are parked under the eaves of the market sheds, and have developed a successful growing outlet for their products. The management of this market practices the necessary essentials to success. Facilities are convenient for the housewife and they try to satisfy her needs. An honest pack and honest information concerning quality, count and quantity are required. The Trenton market has adequate parking facilities for several thousand customers and it continues to grow. The Bureau's office works closely with the manager and the directors and members of the association.

PRINCIPAL COMMODITIES SOLD AT FRUIT AND VEGETABLE AUCTION MARKETS
VOLUME IN 1952 WITH 1951 COMPARISONS

Commodity	Unit	1952	1951
Apples	Bushels	10,005	24,780
Peaches	Bushels	120,121	254,811
Blackberries	Crates, 24 quarts	3,828	6,955
Blueberries and huckleberries	Crates, 12 pints	95,366	88,520
Raspberries	Crates, 12 pints	15,666	26,520
Strawberries	Crates, 24 quarts	82,220	122,753
Asparagus	Crates, dozen bunches	418,366	419,350
Beans, lima	Bushels	25,525	52,405
Beans, snap	Bushels	78,827	121,855
Beets	Bushels	11,751	18,965
Broccoli-rabe	Bushels	47,896	62,992
Cabbage	Bushels	75,601	45,412
Cantaloupes	Bushels	36,263	26,284
Carrots	Dozen bunches	833	4,412
Carrots	Bushels	3,415	320
Cauliflower	Crates, 1-1/2 bushel	5,106	5,527
Corn, sweet	Bushels or sacks	75,027	119,217
Cucumbers and pickles	Bushels	295,960	235,468
Dandelion	Bushels	37,120	37,227
Eggplants	Bushels	102,988	113,229
Lettuce	Crates, 2 dozen	275,700	246,990
Okra	Climax baskets, 12 quarts	39,357	41,274
Onions	Sacks, 50 pounds	135,934	176,770
Parsley	Bushels	20,517	18,454
Peppers	Bushels	507,291	747,608
Potatoes, sweet	Bushels	240,336	301,721
Potatoes, white	Sacks, 100 pounds	35,895	48,983
Radishes	Bushels	12,225	12,584
Rape	Crates	8,376	12,445
Scallions	Bushels	10,111	4,698
Spinach	Bushels	4,476	6,086
Squash	Bushels	33,075	38,755
Tomatoes	Climax baskets	416,839	862,941
Watermelons		11,816	13,005
Miscellaneous	Packages	375,789	271,732

As in former years, the Division has received weekly statistical information from the farmer-owned market in Newark and from the municipal market in Atlantic City. These price and volume figures are of considerable value in preparing crop and price information reports. In contrast with the growth in Trenton, the wholesale markets in Atlantic City and Newark are slowly declining in importance.

Sales of fruits and vegetables at the Atlantic City market dropped from 410,010 bushels in the 1951-52 year to 356,621 bushels this past year. The sale of eggs showed less decline. In 1951-52, 130,148 dozens were sold. This past year the volume was 126,510 dozen. The volume of live poultry was cut almost in half and amounted to only 54,560 pounds last year. Gross returns, however, for all sales was \$779,074.55, or about \$10,000 under the 1951-52 year.

At the Newark Farmers' Market sales dropped from 5,162,369 bunches of vegetables sold in 1951-52 to 4,544,016 bunches sold this past year. The volume of fruits and vegetables sold in packages dropped from 1,189,655 in 1951-52 to 758,987 last year. This was due largely to the lower yields on farms in the fall of 1952.

Miscellaneous Activities

The Bureau carried on its customary aid to farmers whenever opportunity arose. Some of the staff were asked to visit farms in order to advise on proper packing and grading. They have also been instrumental in obtaining outlets for individual farmers for crops which they have found difficult to sell.

The fruit and vegetable standardization supervisor has continued close cooperation with the College of Agriculture in aiding vocational agricultural instructors to teach proper packing of apples. This has culminated each year in local apple packing contests and in the State contest of Vo-Ag pupils during Farmers Week.

The Cooperative Marketing Associations in New Jersey, Inc. continued the programs of work as in former years. The association holds an annual meeting during which matters of interest to cooperatives are discussed. It also sponsored the Cooperative Interests Dinner held during Farmers Week. Through the fruit and vegetable section of the association much work is carried on in the promotional field and an annual dinner and conference for the buyers at the produce auctions is also sponsored.

BUREAU OF POULTRY SERVICE

With the million-bird mark exceeded for the first time in the 30-year history of the poultry standardization project, and more than 2 million 30-dozen cases of eggs inspected to set a new record in the poultry products standardization project, the Bureau of Poultry Service attained its highest degree of accomplishment during the 1952-53 fiscal year.

In the field of poultry standardization, 1,034,633 birds in 668 flocks in 20 counties were certified, with 124 hatcheries cooperating. The number of birds in participating flocks was 8.1 per cent greater than the previous record high of 956,768 birds in 1951-52. Production of chicks and poults in the supervised hatcheries also reached an all time high of 34,000,000, 7.5 per cent above the previous year. An estimated four out of five New Jersey chicks and poults were hatched last year in State-supervised hatcheries.

The annually increasing contributions of poultry standardization services to the expanding New Jersey poultry industry can best be measured from the viewpoint of comparative statistics of 10 years ago. The recent year's participating flocks were 321 per cent greater than in 1942-43, the number of cooperating hatcheries has increased 295 per cent and their capacity per sitting is 376 per cent greater than 10 years ago. More than 80 per cent of the State's total hatchery capacity is now under Department supervision.

In the field of poultry products standardization, marketing of New Jersey-produced eggs under official grades passed the 2 million-case mark for the first time in 1952-53. Cumulative totals show that the 28 egg-marketing projects under Department supervision handled 2,047,204 cases (61,417,200 dozens), which had been inspected by Bureau of Poultry Service personnel and licensed agents. Evidence of the steady growth of poultry products standardization services is also best demonstrated by a 10-year comparison. The recent year's officially graded egg volume is 285 per cent greater than in 1942-43, when the work was largely limited to the application of wholesale grades.

The removal of many New York City dealers to the centers of New Jersey egg production in recent years and the development of candling-cartoning projects have been principal factors in the greatly increased volume of consumer grading. Approximately one-third of New Jersey's total egg production is now marketed under State inspection supervision. Indications are that the volume of work will increase with continued encouragement by the Department of official grading as an accessory of modern marketing.

The past decade whose statistical comparisons provide the measuring

stick of progress in these projects has seen New Jersey total egg production increase 211 per cent, the greatest expansion of any state. National production has increased only 55 per cent during the same period. Now tenth in the nation with more than 2-1/2 billion eggs produced in 1952, New Jersey was nineteenth, with only 805 million in 1940. Total chick production here was 41 million last year, the same as in 1951, and 64 per cent greater than 10 years ago. The number of New Jersey hatcheries, however, has been decreased from 241 in 1943 to 195 last year, although hatcheries under State supervision have increased from 42 to 124 during the same period.

A relatively small State-employed staff handles these two projects. Exclusive of clerical personnel, the supervisors of poultry standardization and poultry products standardization are the only employees paid from the State general treasury. Other personnel on the project are supported by fees paid by the recipients of the services rendered. In poultry standardization, these employees are a hatchery inspector and seasonally employed assistant. In poultry products standardization, there are two fees-paid inspectors, the second employed during the latter half of the fiscal year after the work had grown beyond the capacity of one inspector.

In both projects the greatly expanded volume of work has been made possible by the Department's policy of extending official recognition to licensed agents who are qualified by training and integrity to perform the functions required. Such agents are employed and paid by the hatching egg flock owners, hatcheries, cooperative marketing associations and candling plant operators using the respective State services. Development of the poultry standardization project had been at a virtual standstill prior to the adoption of this policy, the benefits of which started to become apparent about 10 years ago. The project has become more than 10 times as large as it was during the period prior to 1940 when all work was done by State staff members.

Qualified by examination, with periodic checkups on their performances, there were 112 certified flock selectors, 114 pullorum testing agents, 124 hatchery owners and 668 hatching egg flock owners working in various phases of the New Jersey-U.S. National Poultry Improvement Plan under departmental supervision last year. Within regulations prescribed by the State Board of Agriculture, the results of their work are recognized for official ratings in flock health and selection.

In poultry products standardization, 29 private-employed resident inspectors are responsible to the Department for the application of official grades. Many of these agents have relatively large crews of egg candlers

working under their direction, thus further multiplying the efforts of the State-employed personnel, who are the project supervisor and the two fees-paid senior inspectors.

Four inspectors assigned to enforce the State Fresh Egg Law through inspections at both wholesale and retail levels provide a further check upon the work of the licensed agent inspectors and also see that the general egg trade complies with the law.

The Bureau of Poultry Service staff continued to work closely with the managements of all poultry products marketing organizations, new and proposed projects, as well as those of long establishment. Many services beyond those specified by regulations are performed by the staff, which seeks to accommodate all special requests of producers, distributors and consumers for information and help related to the poultry industry. Cooperation was given other branches of State, Federal and other states' governments and to many public and commercial agencies concerned with health, research, education and promotion.

POULTRY STANDARDIZATION

The Division of Markets carries on the poultry breed improvement program and cooperates with the Division of Animal Industry in conducting the pullorum eradication program. The functions of breeder selection and blood testing are closely integrated. The New Jersey program is coordinated with that of USDA and with other states. The National Poultry Improvement Plan has been in operation in New Jersey 18 years, replacing the original State program established in 1923. The National Turkey Improvement Plan has been in effect for 10 years.

There were 1,034,633 birds in 668 flocks enrolled during 1952-53. A total of 348,248 birds (33.6 per cent) were checked by the State staff and the balance by field agents. The latter are assisted and their work is closely supervised by the Bureau of Poultry Service inspector and two Division of Animal Industry men. One temporary Poultry Service inspector, employed October through mid-February, assisted in handling the additional 77,865 birds, an 8.1 per cent increase over 1951-52.

The use of privately-employed flock selecting agents and pullorum testing agents was continued. The supervisor of poultry standardization directed the work of 121 field agents qualified for flock selection or pullorum testing, some of whom combined these functions. Five additional hatcheries joined the program during the year, increasing the number of participants to 124 hatcheries, the largest number ever enrolled.

The steady progress toward control of pullorum disease was maintained in 1952-53. Only a few breeding flocks in New Jersey remain without official health ratings which are well under the minimum pullorum tolerance of one per cent.

The work of the agents for pullorum-clean classification has been very satisfactory. The State Board of Agriculture's permission to give official recognition to Pullorum-Clean ratings attained through work of testing agents was made a permanent part of the program with the 1952-53 season. The number of birds in the Pullorum-Clean classification increased from 714,571 in 1951-52 to 785,551 in 1952-53.

Relatively large breeding flocks have become typical of those now enrolled under State supervision, the average flock numbering 1,550 birds last year, nearly three times the 1943 average of 537. Because of chick customers' insistence upon efficient performance, there is a growing demand by hatcherymen for pedigreed males to head up breeding flocks.

The classifications used this season were:

Breeding Stages	Pullorum Classes
N.J.-U.S. Register of Merit	N.J.-U.S. Pullorum-Controlled
N.J.-U.S. Record of Performance	N.J.-U.S. Pullorum-Passed
N.J.-U.S. Certified	N.J.-U.S. Pullorum-Clean
N.J.-U.S. Approved	

Extent of Program

Poultry Table 1

	1952-53	1951-52	Per Cent Changes in 1953
N.J.-U.S. Improvement Plans			
Number of flocks cooperating	668	701	— 4.7
Total number of breeders	1,034,533	956,768	+ 8.1
Number of hatcheries cooperating	124	119	+ 4.2
Hatchery capacity cooperating	12,841,016	10,514,354	+ 22.1
Hatchery capacity in New Jersey	16,000,000	14,430,000	+ 10.9
Number of birds in pullorum classes only	521	1,989	—73.8
Number of birds in Approved stages	866,969	758,450	+ 14.3
Number of birds in Certified stages	167,143	196,329	—14.9
Number of birds in ROP Trapnest	4,125	3,921	+ 5.2
Number of birds qualified in Register of Merit	334	352	— 5.1
Number of birds qualified for Honor Roll	220	259	—15.0
Number of females in ROP breeding pens	1,985	2,028	— 2.1
Number of ROP chicks produced	75,307	70,722	+ 6.5
Number of ROP chicks and cockerels sold	9,197	13,107	—29.8
Number of ROP chicks and cockerels entering			
New Jersey	3,629	6,358	—42.9
Number of ROP cockerels leg banded	12,626	11,569	+ 9.1
Percentage of birds reacting to the pullorum test	0.032	0.046	—
Number of flock inspections	553	508	+ 8.9
Number of hatchery inspections	160	157	+ 1.9
Number of ROP inspections	33	32	+ 3.1

Tables 2 and 3 give the classification and distribution of birds under supervision and the number of birds banded by breeds and by counties.

Poultry Table 2
CLASSIFICATION AND DISTRIBUTION OF BIRDS UNDER SUPERVISION IN THE POULTRY STANDARDIZATION PROGRAM
NUMBER OF BIRDS

County	Flocks	N.J.-U.S. Certified			N.J.-U.S. Approved			N.J.-U.S.			Totals	THIRTY-EIGHTH ANNUAL REPORT
		Pullorum Controlled	Pullorum Passed	Pullorum Clean	Pullorum Controlled	Pullorum Passed	Pullorum Clean	Pullorum Controlled	Pullorum Passed	Pullorum Clean		
Atlantic	25	----	----	7,132	418	14,292	18,997	----	----	----	40,839	
Bergen	7	----	----	----	----	----	6,382	----	----	----	6,382	
Burlington	24	----	----	5,688	----	1,512	21,714	----	----	----	28,914	
Camden	2	----	----	----	----	----	587	----	----	----	587	
Cape May	8	----	----	----	----	626	19,758	----	----	----	20,384	
Cumberland	140	----	----	95,971	----	13,200	75,169	----	----	----	184,340	
Essex	2	----	----	----	----	----	233	----	----	----	233	
Gloucester	27	----	----	21,035	----	3,716	29,102	----	----	----	53,853	
Hunterdon	106	----	----	3,266	1,051	40,260	98,452	----	----	----	143,029	
Mercer	30	----	----	----	----	4,133	63,959	----	----	----	68,092	
Middlesex	29	----	----	4,736	----	360	42,334	----	----	----	47,430	
Monmouth	72	----	4,508	----	15,600	31,508	117,346	----	----	----	168,962	
Morris	4	----	----	1,098	----	68	1,109	----	----	----	2,275	
Ocean	80	----	2,922	13,812	14,799	80,103	84,245	----	----	----	195,881	
Passaic	14	----	----	----	----	4,803	1,533	----	----	----	6,436	
Salem	62	----	----	6,804	----	11,671	17,696	----	----	----	36,171	
Somerset	23	----	----	171	----	2,458	19,648	----	----	521	22,798	
Sussex	10	----	----	----	----	1,074	5,709	----	----	----	6,783	
Union	1	----	----	----	----	----	150	----	----	----	150	
Warren	2	----	----	----	----	----	1,094	----	----	----	1,094	
Totals	668	----	7,430	159,713	31,868	209,784	625,317	----	----	521	1,034,633	

Poultry Table 3

NUMBER OF BREEDERS, BY COUNTIES, BREEDS OR VARIETIES

County	S. C. White Leghorns	New Hampshires	Rhode Island Reds	Barred Rocks	White Rocks	White Wyan- dottes	Cornish	Black Minorcas	Others	Crosses	Turkeys	Totals
Atlantic	28,476	9,715	----	----	232	----	----	----	----	2,093	323	40,839
Bergen	3,537	597	----	----	233	----	----	----	----	1,079	936	6,382
Burlington	17,131	4,235	4,389	776	1,054	----	----	----	----	665	664	28,914
Camden	----	----	----	----	----	----	----	----	----	----	587	587
Cape May	13,513	1,821	4,573	----	----	----	----	----	----	477	----	20,384
Cumberland	133,341	8,826	8,337	1,874	2,307	----	836	94	170	28,555	----	184,340
Essex	----	12	----	----	221	----	----	----	----	----	----	233
Gloucester	39,894	3,248	----	897	619	----	----	----	----	7,549	1,646	53,853
Hunterdon	83,885	19,543	9,117	12,331	1,544	----	----	----	510	14,649	1,450	143,029
Mercer	28,855	22,549	121	1,625	----	----	----	----	----	14,942	----	68,092
Middlesex	43,095	325	565	68	----	----	70	----	----	1,197	2,110	47,430
Monmouth	153,052	4,336	1,645	65	38	----	----	----	----	9,481	345	168,962
Morris	1,693	514	----	----	----	----	----	----	----	----	68	2,275
Ocean	193,815	197	----	665	----	----	----	----	----	442	762	195,881
Passaic	2,049	3,011	233	----	474	19	51	----	----	----	599	6,436
Salem	18,048	6,649	----	759	2,261	----	----	----	----	8,433	21	36,171
Somerset	16,292	1,223	238	2,692	935	----	53	----	573	500	292	22,798
Sussex	5,345	594	----	----	----	----	----	----	44	----	800	6,783
Union	----	----	----	----	----	----	----	----	----	----	150	150
Warren	----	----	----	----	----	----	----	----	----	----	1,094	1,094
Totals	782,021	87,395	29,218	21,752	9,918	19	1,010	94	1,297	90,062	11,847	1,034,633

Ocean County has replaced Cumberland County for first position in numbers of breeding birds, followed by Cumberland, Monmouth, Hunterdon and Mercer counties in that order.

White Leghorns again are predominant, accounting for 76.4 per cent of the total of all varieties enrolled in the State program. This is indicative of the preference for white-shelled eggs in the New Jersey marketing area. New Hampshires and Rhode Island Reds went down in numbers, the former significantly, to 87,395 birds compared with 137,742 birds last year. They have, however, continued as the second most popular breed in hatching egg flocks. Plymouth Rocks, both Barred and White, increased in number. Greater interest is being shown in Cornish stock, males of which are being crossed on other varieties to produce the recently popularized "broad-breasted broilers."

Improvement of interior egg quality through Record of Performance family breeding started during the 1950-51 year and continued to progress slowly in 1952-53. All five of the ROP breeders are making interior egg quality studies of their families, with the advice and technical assistance of the Bureau staff. A simplified slide rule method of measuring interior egg quality has been developed by industry members and this device should assist in making more rapid progress in locating families with high interior egg qualities. Bureau personnel have instructed several cooperating breeders in the new technique. Such work is being encouraged officially because it is closely related to market quality problems.

Participation in the turkey program totaled 11,847 birds in 1952-53, a 9.35 per cent decrease.

The 12th annual qualification and examination day for flock selectors and pullorum testers was held in Trenton. Instructors from the poultry department of the College of Agriculture cooperated with the Division of Markets and the Division of Animal Industry in presenting the program. Thirteen persons were qualified by examination and field tests after instruction emphasizing breed improvement and pullorum disease control. Selecting agents operated only in the Approved and Certified breeding stages. Testing agents operated in all pullorum stages.

One Federal supervisor was in the State twice last year. At the close of the year a 13-state regional conference was held in New York City, which two New Jersey staff members attended. Staff members continued to cooperate in the program of the New Jersey Poultry Breeders' Association, which helps disseminate information on breed improvement.

Several lots of N.J.-U.S. ROP hatching eggs and chicks were air-shipped

to Greece and other countries through the U. S. Point IV Program (Technical Assistance Mission) during the past season, the Division cooperating with breeders in the necessary certification and also in expediting transportation.

MARKET ACTIVITIES

Cooperative Marketing

The cooperative egg marketing associations with which the Bureau of Poultry Service worked in various programs last year handled more than 180 million dozen eggs, approximately one-half of the State's total production. The two principal means of determining prices are by public auction and by the bargaining method. Both have grown in sales volumes and scopes of service, indicating that they are performing to the satisfaction of their respective producers and buyers.

Securing usable statistical information for the bargaining cooperatives is difficult because their products are not centrally assembled for selling. The six egg auction markets, through a long established reporting system, provide a good basis for evaluating the growth of poultry production, the producers' economic condition and the increase in marketing services by cooperative associations.

Information with respect to volume and dollar value of eggs handled by cooperatives is confined to the auction markets located in Vineland, Mount Holly, Hightstown and Flemington, all of which are under State inspection supervision; and in Hackettstown and Paterson, which operate on market grades. A total of 1,291,951 cases of eggs was marketed by these auctions, 9.5 per cent more than last year. The value of this product was \$21,524,864.38, 16.8 per cent greater than the previous year. The average price per case of eggs, regardless of size or quality, was \$16.66 or 55.53 cents per dozen, about 6.66 per cent higher than the 1951-52 average of 52.06 cents per dozen.

Vineland commanded the highest annual average price of \$16.86 per case; Flemington's annual average price was \$16.62; Hightstown and Paterson averaged \$16.47; Mount Holly, \$16.16 and Hackettstown, \$15.52.

Five cooperative auctions conduct live poultry sales and sold a total of 5,869,308 pounds of poultry, 14.7 per cent less than the previous year. The total value of live poultry was \$1,558,655.19, 16.5 per cent less than last year. The 1952-53 price per pound of 26.5 cents for the five auctions was 2.3 per cent less than the previous year's 27.11 cents. On the basis of individual markets, Mount Holly had the highest average price per pound

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of 30.05 cents per pound; Flemington averaged 26.74 cents; Hackettstown, 25.26 cents; Hightstown, 24.95 cents; and Paterson, 23.5 cents per pound for all varieties and qualities of live poultry items.

The New Jersey egg marketing cooperatives did more than just increase their business volume. Nothworthy efforts recently put forth have included programs of public relations and products promotion and greater cooperation among the various associations. The auction type and bargaining cooperatives are seeking to develop better understanding among their managements and boards of directors, largely through meetings held under joint auspices of the College of Agriculture and the Department. At these sessions, regularly attended by almost all of the 12 egg cooperatives, marketing experiences are shared; costs, selling prices and methods are compared and technical assistance of the Department is given direction.

Six of these cooperatives also form the largest state bloc of the 20-member regional association organized during the past year as a central marketing agency for the Northeast. They are the five auctions located in Paterson, Hackettstown, Flemington, Hightstown and Vineland; and Farmers' Cooperative Association of New Jersey. Incorporated in New Jersey as Northeastern Poultry Cooperative, Inc., the regional agency will engage in trading on the New York Mercantile Exchange and will operate special marketing projects of which the member associations are not capable as individuals. Members of the Poultry Service staff worked with Northeastern Poultry Producers Council, Federal and State agencies and the marketing associations for more than five years in the surveys and plans which led up to the formation of the new group.

Table 4, "Summary of Egg and Poultry Auction Markets," shows the volume and value of sales at each of the cooperative markets and the total of all sales for the fiscal year.

Poultry Table 4						
SUMMARY OF EGG AND POULTRY AUCTION MARKETS						
July 1, 1952 to June 30, 1953						
Market	Cases of Eggs	Value of Eggs	Crates of Poultry	Pounds of Poultry	Value of Poultry	Total Value
Flemington	417,055	\$6,930,202.50	56,130	2,751,766	\$735,889.77	\$7,666,092.27
Hackettstown	24,621	382,002.61	8,545	482,462	121,863.85	503,866.46
Hightstown	159,412	2,626,043.84	20,415	1,085,343	270,792.30	2,896,836.14
Mount Holly	58,310	942,080.49	19,364	1,006,008	302,354.85	1,244,435.34
Paterson	50,879	837,555.12	9,859	543,729	127,754.42	965,309.54
Vineland	581,674	9,806,979.82	---	---	---	9,806,979.82
Totals	1,291,951	\$21,524,864.38	114,313	5,869,308	\$1,558,655.19	\$23,083,519.57
Average price per case, 1952-53		\$16.66				
		Average price per pound of live poultry, 1952-53				\$0.265
Average price per case, 1951-52		\$15.62				
		Average price per pound of live poultry, 1951-52				\$0.271

Table 5, "Average Price Per Dozen Eggs on Six New Jersey Auction Markets," provides a comparison of seasonal values and comparisons of the past year with the previous year and with prewar 1939, on a monthly basis.

Poultry Table 5

AVERAGE PRICE PER DOZEN ON SIX NEW JERSEY AUCTION MARKETS

Month	1952	For Comparison	
		1951	1939
July	\$0.5999	\$0.6320	\$0.2647
August	.6117	.6421	.2678
September	.5483	.6305	.2948
October	.5900	.5652	.3029
November	.5786	.6509	.3118
December	.5207	.5538	.2453
	1953	1952	1939
January	.5019	.4550	.2372
February	.4920	.4128	.2260
March	.5698	.4368	.2305
April	.5492	.4622	.2218
May	.5243	.4243	.2146
June	.6006	.4763	.2384

The development of the marketing program is traced in Table 6.

Poultry Table 6

TEN YEARS OF PROGRESS IN NEW JERSEY POULTRY AND EGG AUCTION SALES

Year	Cases of Eggs	Crates of Poultry	Pounds of Poultry	Total Combined Value Eggs and Poultry
1952-53	1,291,951	114,313	5,869,308	\$23,083,519.57
1951-52	1,180,320	130,754	6,882,213	20,302,196.16
1950-51	1,067,278	122,147	6,548,720	19,353,488.51
1949-50	1,007,268	123,392	7,170,230	16,035,952.60
1948-49	807,739	102,301	5,194,487	16,331,155.63
1947-48	724,749	91,445	4,709,002	14,550,468.95
1946-47	561,673	78,441	4,106,573	10,498,824.87
1945-46	417,851	49,066	2,571,721	6,092,989.74
1944-45	512,667	42,644	2,132,829	7,399,916.56
1943-44	668,597	62,667	3,136,619	8,824,088.21
Totals	8,240,093	917,170	48,321,702	\$142,472,600.80

Auction Markets Egg-Feed Ratio

The year 1951-52 had been discouraging because of unfavorable egg prices, and flocks were reduced in many other states, especially in those where specialized poultry keeping is not the general practice. New Jersey entered 1953 with its largest population of layers, hens and pullets in history which amounted to nearly 16 million birds of laying age. This was more than one million greater than at the same time in 1952, the previous record year. By June 1953 New Jersey had 1,370,000 more mature birds than in June 1952. Ohio was the only other state that approached the million mark

in flock expansion. Pennsylvania increased one-half million and Connecticut and South Carolina each had about one-third million more mature birds. The North Atlantic States, with the exception of New York and Vermont, reported some flock expansion, but none to the extent noted here. Regions which declined were the East North Central, West North Central, South Central and West. The South Atlantic States increased slightly, confirming reports of the emphasis being placed upon egg production in that deficit area.

Interrupted by only a slight decline between 1944 and 1945, the New Jersey market egg flock has been growing since 1935. It reached the five million mark in 1939, 10 million in 1949 and nearly 16 million this year. Contrary to economic indicators, flock expansion here often has followed relatively poor years which have caused some other areas to cut production. The large number of specialized poultrymen in New Jersey apparently must maintain their production units at full strength despite vagaries of the market. The phenomenon of increased production, however, both in new projects and in expansions of established poultry flocks, is not easily explained. Partly, it may be due to speculation. Primary reasons, it is believed, are confidence in the capacity of the East to consume as population continues to grow and the security provided by the highly developed marketing organizations.

Poultry Table 7 shows that extreme seasonal variations in production are no longer true in New Jersey. In fact, the reporting markets sold actually more eggs in October 1952 than in March 1953. Autumn eggs were only 2.6 per cent less in volume than for the spring months, while the autumn-spring variation was 40 per cent in 1939, the prewar year used as a base.

During the past year there were no really unfavorable months, as shown by the egg-feed ratios. December, January and February were the only months in which nine or more dozens of eggs were required to pay for 100 pounds of average laying ration. No wide variation in egg prices occurred, the annual range of 11.97 cents occurring between the August 1952 price of 61.17 cents and February 1953's, 49.20 cents per dozen. By June 1953 the average price was again exceeding 60 cents. All eggs sold by the reporting markets averaged 3.47 cents per dozen higher than the previous year.

Starting the year 3 to 8 cents below the previous year, egg prices averaged 9.5 cents higher during the latter six months than in the corresponding 1952 period. Feed costs were 10 to 25 cents per 100 pounds higher from July through October 1952 than a year earlier. They dropped in November, however, and for the next seven months of the recent year, producers

Poultry Table 7

NEW JERSEY EGG AUCTIONS—EGG-FEED RATIO

		JULY			AUGUST			SEPTEMBER		
		1952	1951	1939	1952	1951	1939	1952	1951	1939
EGGS										
Total dozens sold		2,567,160	2,285,310	891,300	2,587,050	2,444,910	900,540	3,413,640	2,522,820	855,660
Total price paid	\$	1,539,934	1,444,411	235,920	1,582,616	1,569,922	241,138	1,871,640	1,590,682	252,290
Av. price per doz.	\$	.5999	.5320	.2647	.6117	.6421	.2678	.5483	.6305	.2948
FEED										
Av. 100 lb. scratch	\$	4.35	4.25	1.60	4.40	4.30	1.50	4.35	4.35	1.86
Av. 100 lb. mash	\$	5.30	4.90	2.18	5.30	4.95	2.16	5.40	5.00	2.02
Av. laying ration	\$	4.83	4.58	1.89	4.85	4.63	1.83	4.88	4.68	1.94
RATIOS										
Doz. eggs required to buy 100 lb. feed		8.05	7.2	7.1	7.93	7.2	6.8	8.90	7.4	6.6
No. lb. feed one doz. eggs will buy		12.4	13.8	14.0	12.5	13.9	14.6	11.2	13.5	15.2
			OCTOBER			NOVEMBER			DECEMBER	
EGGS		1952	1951	1939	1952	1951	1939	1952	1951	1939
Total dozens sold		3,624,930	3,090,660	995,430	3,080,850	3,053,700	969,330	3,576,870	2,943,900	1,135,350
Total price paid	\$	2,138,864	1,746,476	301,570	1,782,513	1,987,523	302,284	1,862,367	1,630,283	278,465
Av. price per doz.	\$	.5900	.5652	.3029	.5786	.6509	.3118	.5207	.5538	.2453
FEED										
Av. 100 lb. scratch	\$	4.35	4.35	1.78	4.30	4.40	1.77	4.25	4.50	1.83
Av. 100 lb. mash	\$	5.30	5.10	2.54	5.20	5.20	2.52	5.20	5.30	2.58
Av. laying ration	\$	4.83	4.73	2.16	4.75	4.80	2.14	4.73	4.90	2.20
RATIOS										
Doz. eggs required to buy 100 lb. feed		8.19	8.4	7.1	8.21	7.4	6.9	9.1	8.8	9.0
No. lb. feed one doz. eggs will buy		12.2	11.9	14.0	12.2	13.6	14.6	11.0	11.3	11.2

NEW JERSEY EGG AUCTIONS—EGG-FEED RATIO—Continued

		JANUARY			FEBRUARY			MARCH		
		1953	1952	1939	1953	1952	1939	1953	1952	1939
EGGS										
Total dozens sold		3,319,200	3,217,500	1,099,080	3,133,590	3,182,760	1,085,550	3,600,060	3,318,120	1,372,230
Total price paid	\$	1,665,956	1,464,279	260,807	1,541,612	1,313,967	245,376	2,051,368	1,448,025	316,303
Av. price per doz.	\$	.5019	.4550	.2373	.4920	.4128	.2260	.5698	.4364	.2305
FEED										
Av. 100 lb. scratch	\$	4.25	4.55	1.54						
Av. 100 lb. mash	\$	5.10	5.40	2.04	4.20	4.50	1.54	4.15	4.50	1.56
Av. laying ration	\$	4.68	4.98	1.79	5.00	5.40	2.04	5.00	5.30	2.06
RATIOS					4.60	4.95	1.79	4.58	4.90	1.81
Doz. eggs required to buy										
100 lb. feed		9.3	10.9	7.5	9.3	11.9	7.9	8.04	11.2	7.9
No. lb. feed one doz.										
eggs will buy		10.7	9.1	13.3	10.7	8.3	12.6	12.4	8.9	12.7
			APRIL			MAY			JUNE	
EGGS		1953	1952	1939	1953	1952	1939	1953	1952	1939
Total dozens sold		3,462,840	3,215,310	1,213,620	3,320,370	3,373,110	1,388,070	3,071,970	2,761,500	1,117,170
Total price paid	\$	1,901,807	1,485,990	269,176	1,741,017	1,439,164	297,863	1,845,164	1,315,437	266,289
Av. price per doz.	\$	.5492	.4622	.2218	.5243	.4243	.2146	.6006	.4763	.2384
FEED										
Av. 100 lb. scratch	\$	4.15	4.40	1.58	4.15	4.45	1.64	4.15	4.35	1.69
Av. 100 lb. mash	\$	4.95	5.30	2.11	4.90	5.30	2.18	4.85	5.30	2.18
Av. laying ration	\$	4.55	4.85	1.84	4.53	4.88	1.91	4.50	4.83	1.94
RATIOS										
Doz. eggs required to buy										
100 lb. feed		8.3	10.5	8.3	8.6	11.5	8.9	7.5	10.1	8.1
No. lb. feed one doz.										
eggs will buy		12.1	9.5	12.1	11.5	8.7	11.2	13.3	9.9	12.3

THIRTY-EIGHTH ANNUAL REPORT

had an advantage of about 30 cents per hundredweight. September 1952 feed was the year's highest priced, \$4.88; and June 1953 was the month of lowest feed price, \$4.50, the annual range being 38 cents per hundredweight.

State Certified Fresh Eggs

The New Jersey State Certified Fresh Egg project was 15 years old this year. Unusually large percentages of reject eggs, the loss by death of its manager, the threat of a strike of deliverymen, expansion of candling and storage facilities and alleged discrepancies in inventories caused problems requiring numerous conferences. Although sales reached a record, earnings are expected to be extremely low when the annual audit, not yet available, is presented.

Wholesale graded lots of eggs are supplied to this project by four member auction markets, purchases being determined by the sales volumes of the source markets. Under State supervision, the project individually inspects and cartons the eggs for delivery to dairies and retail stores.

Of the 91,276 cases (2,738,280 dozens) purchased—15 per cent more than the previous year—Flemington supplied 34,719 cases (38.0 per cent of the total purchased); Vineland, 46,931 cases (51.4 per cent); Hightstown, 7,526 cases (8.2 per cent); and Mount Holly, 2,100 cases (2.3 per cent).

Purchases from all members were valued at \$1,626,482.70, compared with \$1,335,007.13 the previous year. The yearly average price paid by the project was 59.39 cents per dozen, whereas the average price received by all New Jersey auctions was 55.53 cents. The average markup between purchases and selling price was 12.02 cents per dozen, which was 0.38 cents higher than the previous year. The project had earnings for six months and losses for the same length of time.

The total "yield" for cartoning purposes was 2,296,835 dozen, or 83.88 per cent of the eggs purchased. The 16.12 per cent loss on reject eggs was 2.77 per cent higher than the previous year. The reject percentage has grown progressively worse for several years. Assuming that the eggs supplied to the "Certified" project, coming from four widely separated areas, are typical of the total New Jersey supply, there is cause for concern that the State's reputation for fine quality may be in danger.

This is the only project of its kind providing comprehensive and dependable reports on this subject to the Department. Its costs and quality statistics are probably representative of other candling-cartoning operations

in New Jersey which have equal standards of quality. Criticisms of the increasing spread between producer and consumer would seem to be unjustified.

Table 8, "Summary of Certified Egg Project," reports the highlights of this marketing project.

Poultry Table 8
SUMMARY OF CERTIFIED EGG PROJECT

	Dozen Sold 1952	Dozen Sold 1951	Monthly Average Purchase Price 1952	Selling Price Wholesale In Cartons 1952	Average Markup 1952	Earnings or Loss Per Dozen 1952
July	158,742	149,868	\$0.6411	\$0.7455	\$0.1044	— \$0.0433
August	156,888	156,641	.6889	.7980	.1091	— .0379
September	179,895	141,751	.6636	.7767	.1131	— .0210
October	188,580	162,670	.6920	.8128	.1208	— .0129
November	169,125	173,583	.6456	.7677	.1221	+ .0089
December	205,977	181,566	.5489	.6785	.1296	+ .0250
	1953	1952	1953	1953	1953	1953
January	216,765	184,290	.5251	.6555	.1304	+ .0259
February	195,849	174,603	.4911	.6186	.1275	+ .0196
March	237,068	183,849	.5705	.6923	.1218	+ .0189
April	205,104	186,762	.5670	.6885	.1215	+ .0012
May	181,614	191,397	.5341	.6547	.1206	— .0075
June	201,228	172,959	.6025	.7246	.1221	— .0016
Totals	2,296,835	2,059,939				

Fresh Egg Law Enforcement

The New Jersey Fresh Egg Law continues to be the rule by which responsible persons in the trade conduct their marketing practices. Its enforcement has contributed much to the improvement of consumer confidence in buying eggs. Retailers and the distributors are constantly reminded that compliance with the prescribed quality standards will do more for them in a business way than attempts to circumvent the law by questionable measures which would make them liable for penalty action.

Requests for suggestions and criticisms from members of the egg trade indicate that the enforcement procedure is practical in that it imposes no hardship but instead improves the relationship between distributor and retailer. It is by no means implied that violations of the egg law do not occur. There have been what are considered serious violations, and in such cases prompt action was taken. Other violations are for the most part the result of human error, and it is a part of enforcement procedure to see that the frequency of their appearance is kept at a minimum.

The senior fresh egg law inspector made 356 visits to distributing firms to help set up or maintain quality egg programs. Inspections by all inspectors were made in 10,719 stores during the year. Violations among all stores

totaled 1,174 or 10.95 per cent. Of all violations found, seven resulted in hearings and 474 were issued warnings. There were no penalties assessed.

Grading and Inspection Service

The major functions of the project are to supervise the application of New Jersey Live Poultry Grades, New Jersey Wholesale Grades for Eggs, New Jersey Consumer Grades for Eggs and the Federal-State Egg Grading Service; also, to inspect eggs for institutional use and to make other egg inspections requiring the issuance of official grading certificates.

There are 32 receiving points in New Jersey where official grades are applied under supervision, either through licensed plant personnel or by Department personnel.

Four cooperatives located in Vineland, Mount Holly, Hightstown and Flemington continued to use the New Jersey Wholesale Grades for Eggs; the last three markets and one located at Hackettstown also used the New Jersey Grades for Live Poultry. For each kind of product grading at these points there is a responsible plant employee licensed to perform as the official grader for the Department. Persons hired by each cooperative to assist in the grading of the product under the supervision of the designated plant grader are licensed as assistant inspectors for the particular product they may grade. In addition to the seven licensed plant employees who are directly responsible to the Department for the proper application of official grades, 23 are licensed as assistants.

Fifteen independent firms and one cooperative use the New Jersey Consumer Grades for Eggs. The cooperative is located in Flemington while most of the others are located in the Farmingdale-Lakewood-Toms River area. In every case the product is prepared in consumer package form, each carton sealed with an official New Jersey grade label. The licensed graders have the added responsibility of maintaining uniform interpretation of egg quality among other personnel in the plant who perform as egg candlers.

Through a Federal-State agreement, the Department cooperates with the U. S. Department of Agriculture in administering and supervising the official grading of eggs in seven plants, two of which are producer-owned and located on the fringe of the North Jersey metropolitan area. The procedure is similar to that described above except that the resident graders are licensed by the Federal agency and must comply with Federal regulations.

In addition to these uses of official supervisory service, one producer organization in the Lakewood area employs a New Jersey-licensed inspector. The function of this person is to examine, upon request, the member's shipment of eggs at the receiver's place of business at the time of delivery. This

Poultry Table 9

NUMBER OF STORES INSPECTED AND PER CENT VIOLATION, BY COUNTIES

County	Independent Stores			Chain Stores			All Stores		
	Stores Inspected	Number of Violations	Per cent Violations	Stores Inspected	Number of Violations	Per cent Violations	Stores Inspected	Number of Violations	Per cent Violations
Atlantic	622	44	7.07	52	5	9.62	674	49	7.27
Bergen	1,295	167	12.90	153	53	34.64	1,448	220	15.19
Burlington	248	3	1.21	28	1	3.57	276	4	1.45
Camden	637	11	1.72	54	4	7.41	691	15	2.17
Cape May	303	18	5.94	32	3	9.36	335	21	6.27
Cumberland	158	4	2.53	32	---	---	190	4	2.11
Essex	992	110	11.09	109	40	36.70	1,101	150	13.62
Gloucester	157	4	2.61	17	---	---	174	4	2.30
Hudson	1,388	203	14.63	84	19	22.62	1,472	222	15.08
Hunterdon	37	5	13.51	11	1	1.10	48	6	12.50
Mercer	455	12	2.64	47	2	4.26	502	14	2.79
Middlesex	522	43	8.28	53	10	18.87	575	53	9.23
Monmouth	637	97	15.23	83	27	32.53	720	124	17.22
Morris	294	44	1.50	32	4	12.50	326	48	14.72
Ocean	339	26	7.67	21	4	19.05	360	30	8.33
Passaic	512	75	14.65	44	14	31.82	556	89	16.01
Salem	146	---	---	12	---	---	158	---	---
Somerset	112	10	8.93	14	2	14.29	126	12	9.52
Sussex	81	15	18.52	12	3	25.00	93	18	19.35
Union	698	50	7.16	76	17	22.37	774	67	8.66
Warren	104	21	20.19	16	3	18.75	120	24	20.00
Totals	9,737	962		982	212		10,719	1,174	
				1952-53		1951-52			
	Total stores inspected			10,719		8,945			
	Total violations			1,174		799			
	Average per cent violations			10.95%		8.93%			

service consists of sampling the lot and determining the percentages of the qualities in the sample. A certificate is issued attesting to what is found in each case, and this factual information is used by the producer organization and the receiver of the eggs in determining the price to be paid to the producer. When an out-of-State receiver requests inspection, it is performed at a designated warehouse near the area of production in New Jersey.

Department personnel of the Bureau of Poultry Service, in addition to supervising the work of licensed personnel, conduct official gradings of eggs to be delivered to institutions. This may require a State or Federal certificate, depending on the terms of the contract. Department personnel are frequently requested to inspect producers' shipments of eggs. This is similar to the service previously described as used by a producer organization. These producers are not organized and the inspections are not a regular part of their marketing program.

Contracts are in effect where the grading service is performed using licensed personnel, and administrative costs are recovered through the application of a graduated scale of fees. Charges for service rendered by Department personnel for the performance of specific inspections are at an established rate per hour.

Special Poultry Activities

Editorial assistance was given to a number of publications in the preparation of feature articles about New Jersey agricultural marketing and the Department's poultry program. Illustrated features appeared in Newark Sunday News, Vineland Times Journal and Asbury Park Press, with lesser articles in many other newspapers. Material was also supplied to fill requests of Country Gentleman, Farm Journal, New Jersey Farm and Garden, Poultry Tribune, Everybody's Poultry Magazine, The Poultryman, du Pont Poultry Comment and other publications.

New Jersey and Pennsylvania departmental personnel participated in several joint activities on mutual problems of egg quality, wet cleaning-sanitizing and relationships among marketing organizations.

Members of the State Legislature were given technical assistance in their drafting of bills covering poultry industry matters. One such bill, which was enacted, will regulate the use of terms connoting domestic production of market eggs, forbidding terminology which implies a New Jersey source to eggs from other states. Another which would require licensing and bonding of eggs and poultry buyers has already passed in the Legislature.

Demonstrations of the method for barbecuing poultry were given before

groups which totaled several thousand. These groups included Vineland Egg Auction, New Brunswick Kiwanis Club, Hunterdon County Poultry Association, Rutgers Poultry Science Association, Shiloh School Alumni Association, Northeastern Poultry Producers Council and Delaware Valley Co-operative Association.

Special cooperation was given in arranging farm and industry tours of State Chamber of Commerce, Hunterdon County Board of Agriculture and the sales staffs of three large milk companies. Several smaller groups and individuals from other states and foreign countries engaged in programs related to agricultural marketing were escorted on tours. A New York poultry and egg market tour was arranged for members of the Poultry Allied Industry Conference.

Considerable time was given by several staff members to assisting the Agricultural Extension Service and a group of meat poultry growers in explorations of a proposal to set up a live poultry auction market in South Jersey. This assistance was largely in the fields of previous experience with such projects in other areas, information on grading and on health and agricultural regulations, as well as on the question of organizing under the agricultural cooperative law. As the year ended, the proponents were on the verge of a decision whether to proceed with the plan. Surveys by the Extension Service have indicated a large enough potential supply and a need for some marketing scheme to replace that formerly operated by Vineland Auction Market. A group composed principally of producers with a few dealers has urged that an attempt be made to establish a poultry auction before the fall of 1953.

Two staff members were judges of the State 4-H Chicken-of-Tomorrow Contest.

The Poultry Bureau cooperated closely with the Division of Information in the development of special news releases covering the millionth bird selected and tested under the Poultry Improvement Plan, and the two millionth case of eggs to be officially inspected during the year. A number of other releases were also submitted. Radio participation included guest appearances on the Rutgers Forum over a network of nine New Jersey stations; the poultryman's hour of WWBZ, Vineland; a half-hour show on WTTM, Trenton, and several appearances of incidental nature. Assistance was given in producing two television programs over WATV, Newark.

Staff members helped in efforts to promote the acceptance by producers and dealers of single-use new egg cases when three marketing organizations decided upon the all-new case policy, which has long been advocated for merchandising and sanitary reasons.

One-fourth of a million pieces of literature promoting New Jersey eggs were distributed in a special project which was planned and directed by the Poultry Bureau. A statewide egg marketing organization, five dairy companies and New Jersey Council cooperated.

Two surveys on egg consumer and retailer preferences were conducted by the Poultry Bureau, using the interviewing services of Fact Finders, Inc. Information obtained is intended to guide promotional efforts as well as to determine whether production and marketing methods in New Jersey are properly keyed to what the public wants. Preference for white-shelled eggs is strongly indicated, confirming that New Jersey producers are correct in their choice of the predominating White Leghorn variety. Confidence in the State Department of Agriculture grading and source identification program was expressed by a large majority of consumers who stated they would be willing to pay two to five cents more per dozen for eggs under State certification seals.

Poultry and Egg National Board was assisted in various projects, principally the January "egg month" promotion, obtaining and distributing Governor Driscoll's favorite chicken recipe and the exposition and dinner for food-page editors and radio commentators.

Egg grading contests in the 4-H and vocational agriculture programs were held during Farmers Week. These were preceded with elimination contests held in various parts of the State. Cooperation was again extended to Northeastern Poultry Producers Council in conducting similar contests at their annual convention in Syracuse, New York.

The Neppco Egg Grading and Quality School was held in Williamsburg, Virginia, and members of the staff of the Poultry Bureau were active in the operation of the school as lecturers, instructors in laboratories and as examiners. The school returns to New Jersey in June 1954.

The Hunterdon County Poultry Association resumed its annual Baby Chick and Egg Show and a staff member of the Bureau served as superintendent of the affair.

Other activities include extending services in connection with the judging of eggs at the Pennsylvania Farm Show and the Rutgers Poultry Science Club field day; judging poultry at the Cumberland County Fair, the Mercer County 4-H field day and the State 4-H poultry judging contest; assisting with the New Jersey Turkey Association dressed turkey show; and serving as secretary to Neppco Turkey Division. In addition, numerous State, regional and national conferences and meeting related to the Bureau's activities were attended.

Report of the Division of Plant Industry

HARRY B. WEISS, D.Sc., *Director*

BUREAU OF ENTOMOLOGY

NURSERY INSPECTION

During the past year 589 nurseries were inspected and nursery certificates were issued after they were found to be free of injurious insects and plant diseases. Where infestations were found, clean-up and reinspection were required before certification. There were 419 infestations found and controlled in 185 nurseries.

INSECT INFESTATIONS

Insect Pests	Infestations
Rhododendron Lacebug	75
Juniper Scale	69
Spruce Gall Aphid	50
Azalea Lacebug	35
Oyster Shell Scale	34
Holly Leaf Miner	27
European Pine Shoot Moth	18
Juniper Webworm	16
Euonymus Scale	12
Taxus Mealy Bug	12
Bagworm	9
Pine Needle Scale	6
Willow Galls	6
Boxwood Leaf Miner	5
Red Spider	4
Sycamore Lacebug	4
Boxwood Psyllid	3
Oak Lacebug	3
White Pine Weevil	3
Lilac Borer	2
Peach Borer	2
Pine Bark Aphid	2
Pine Sawfly	2
Rose Aphid	2
Tulip Scale	2
Aphid on Camellia	1
Camellia Scale	1
Elm Leaf Beetle	1
Lacebug on Japanese Quince	1
Lecanium Scale on Taxus	1
Oak Scale	1
Orchid Scale	1
Oriental Fruit Moth	1
Rose Slug	1
San Jose Scale	1
Sawfly on Barberry	1
Slugs on Camellia	1
Thrips (greenhouse)	1
Birch Leaf Miner	1
White Fly (greenhouse)	1
Woolley Aphid	1

Dealers' Certificates

Certificates were issued to 86 dealers in nursery stock after they had signed agreements to purchase stock for resale only from sources approved by the Department.

Special Certificates

There were 250 special certificates issued during the year. Such certification shows freedom of plant material from insects and plant diseases just prior to shipment and is issued usually to persons other than nurserymen for the movement of plant material out of the State, in accordance with the requirements of the receiving state or foreign government.

Special (Request) Inspections

A total of 130 inspections was made of the premises of residents in the State who desired information about insects and plant pathogens affecting their plants.

Canadian Certificates

In accordance with Canadian regulations, special certification is required before plant materials may be shipped into Canada. Ninety-one inspections were made and certification granted for such shipments during the year.

Domestic Inspections

Special spot inspections were made of the 103 shipments of plant material coming into New Jersey from other states. Four shipments were found to be in violation of our nursery laws.

One lot of eight peach trees grown in and shipped from New York State was destroyed, being in violation of the New Jersey "X" disease quarantine regulations.

Two shipments of Amur privet seedlings (200 and 100 respectively) from Georgia were found to be infested with scale. Since only the roots were to be used, the tops were clipped and destroyed in the presence of the inspector.

Three cases of holly and rhododendron plants from Tennessee were found to be infested with holly leaf miner and leaf spot respectively and were returned to the shipper.

Special Corn Borer Certificates

There were 129 special certificates issued for the movement of herbaceous plant material into states where the corn borer is not found or is present only in small numbers. Certification was in accordance with the requirements of those states.

Phylloxera Certification

Some European countries demand certification of freedom from grape phylloxera. In accordance with these requirements, three shipments of plant material were so certified.

Foreign Inspections

Four inspections were made of unquarantined plant material entering New Jersey from foreign countries. Two shipments were from Canada, one from India and one from Holland, but no infestation was found.

Dealers' Visit

Representatives of the Division inspected held-over stock and checked the sources of supply on the premises of 15 dealers during the fiscal year. They found no irregularities.

Red Stele Disease of Strawberry

During October, March and April approximately 60.5 acres of strawberry plantings were entered by 34 growers. Of these approximately 59.75 acres were certified as free from red stele. One field containing 0.75 acres was found to be infected with red stele and was refused certification.

Three varieties, Lupton, Josslyn and Sparkle, were in this diseased planting, but the disease was found in Lupton only in a low, wet area. This variety, along with Josslyn, is from the owner's own source and has been planted for 10 years. Sparkle had been obtained one year before from a plantsman in the area, but no diseased plants were found in this variety, neither in this planting or on the premises from which the plants were obtained. The grower of the source plants of Sparkle was certified for the two previous years and no red stele was found on his premises during that period. The presence of the disease at this place, therefore, is unexplained.

RED STELE INSPECTIONS BY COUNTY

	Growers	Acreage Inspected
Atlantic	5	4.58*
Burlington	3	5.13
Camden	5	7.75
Cape May	2	4.50
Cumberland	4	9.75
Gloucester	1	3.00
Hunterdon	1	1.00
Mercer	4	16.75
Middlesex	1	.50
Monmouth	6	5.50
Salem	1	2.00
Somerset	1	.02
Totals	34	60.48

*Red Stele found—0.75 acres entered by one grower.

BLUEBERRY STUNT DISEASE

This report on the eighth year of blueberry stunt certification covers the 1952 calendar year. Two inspections are made each year, one in the spring and another in the fall, when the symptoms are most conspicuous. Diseased bushes are tagged and must be removed within 10 days. Fields containing more than three-fourths of 1 per cent (0.75 per cent) of diseased bushes at any one inspection, or a total of more than 1 per cent for the two inspections, are refused certification.

Summary of Spring Inspection (1952)

Thirty-one growers entered 410.67 acres for inspection, but voluntarily withdrew 45.58 acres because of an anticipated shortage of inspectors. The remaining 365.09 acres were inspected in the spring and 19.5 acres had to be rejected, 16.5 because the incidence of stunt was more than three-fourths of 1 per cent at this inspection, and three acres for non-removal of tagged bushes within the allotted time. On the remaining certifiable 345.59 acres, 346 diseased bushes were tagged and removed, giving an average of one stunt diseased bush per acre for the spring inspection.

Summary of Fall Inspections (1952)

During the fall inspection of the certifiable 345.59 acres of blueberry bushes, six additional acres were rejected. Of these, five acres were rejected because the total number of diseased bushes found during both inspections exceeded 1 per cent and one acre because of lack of removal of diseased bushes in an adjacent rejected field. 227 diseased bushes had to be removed from the certified 339.59 acres, giving an average of 0.67 diseased bushes for the fall inspection.

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1952 BLUEBERRY SEASON

Grower	Acres Entered	Voluntarily Withdrawn Spring	Areas Inspected		Areas Rejected Spring	Stunt Bushes Tagged (certifiable portion) Spring	Fall
			Spring	Fall			Fall
Ahlrichs	20.50	---	20.50	20.50	---	53	20
Ammon	2.50	---	2.50	2.50	---	---	---
Arpin	20.00	5.00	15.00	15.00	---	31	35
Atlantic Blueberry Co., % Galletta Brothers	18.00	17.33	.67	.67	---	---	---
Beebe	12.00	---	12.00	12.00	---	---	2
Brown	6.00	---	6.00	6.00	---	15	5
Budd	20.00	---	20.00	20.00	---	24	---
Est. of Benj. Cavileer (Mrs. Benj. Cavil'r)	15.00	---	15.00	15.00	---	3	---
Clevenger	12.00	---	12.00	12.00	---	2	10
Cohen	8.00	---	8.00	8.00	---	43	3
Cutts Brothers	12.00	---	12.00	12.00	---	---	---
DiDonato & Sons	14.50	9.25	5.25	5.25	---	---	---
Galletta Brothers	31.00	---	31.00	31.00	---	2	---
Green	6.50	---	6.50	6.50	---	---	1
Haines, E. & Bro.	13.42	---	13.42	13.42	---	3	1
Haines, H. & E.	22.00	---	22.00	22.00	---	14	9
Hamilton	13.00	5.50	7.50	7.50	---	1	---
Heimbach	4.00	---	4.00	4.00	---	4.00*	---
Leach	20.75	---	20.75	18.75	2.00	2.00	62
Manning	11.50	---	11.50	9.00	2.50	---	21
Mood	11.00	3.00	8.00	8.00	---	---	---
Norcross & Son	9.50	---	9.50	9.50	---	9	21
O'Neill & Son	7.50	---	7.50	7.50	---	---	10
Pinkham	15.00	---	15.00	---	15.00**	15	---
Pursell	8.00	5.50	2.50	2.50	---	1	---
Rogers	42.00	---	42.00	42.00	---	22	2
Scammell & Son	8.00	---	8.00	8.00	---	1	---
Scarano	6.50	---	6.50	6.50	---	7	9
Stevenson	8.00	---	8.00	8.00	---	3	---
Volk	.50	---	.50	.50	---	---	---
White	12.00	---	12.00	12.00	---	14	1
Totals	410.67	45.58	365.09	345.59	19.50	6.00	346
							227

*Heimbach—3 acres rejected because of high stunt; 1 acre rejected because of non-removal of "stunted" bushes in adjacent rejected 3 acres.

**Pinkham—12 acres rejected because of high stunt; 3 acres rejected because of non-removal of "stunted" plants.

Spring—31 growers—410.67 acres entered
45.58 " voluntarily withdrawn
365.09 " inspected
19.50 " rejected
345.59 " remaining, giving an average of 1.0
" "stunted" bushes per acre; 346
bushes tagged.

Fall—
345.59 acres inspected
6.00 " rejected
339.59 " remaining, giving an average of .67
" "stunted" bushes per acre; 277
plants tagged.

EIGHT YEARS OF BLUEBERRY STUNT INSPECTION

	Growers	Acres Inspected	Stunt Bushes Tagged (certifiable portion)
1945	14	155.25	4.7
1946	26	362.23	5.7
1947	23	346.38	2.4
1948	31	288.3	1.4
1949	34	367.4	1.5
1950	33	396.5	1.8
1951	37	391.13	1.4
1952	31	365.09	1.7

Observations

The spring symptoms appeared early in the spring of 1952 over a short span of time, and the color and pattern were exceedingly brilliant. Many bushes previously considered questionable now showed definite symptoms. As a result, it was believed that a marked reduction in the number of bushes tagged during the fall inspection would result. This did not happen, however, and many diseased bushes were tagged and removed during the fall inspection. Most of these bushes continued to show spring-type symptoms.

The high incidence of stunt disease in the Magnolia (Pemberton) area continues to present a problem. Of 25.5 acres rejected during the 1952 season, 21.5 acres were in that area. Records of fields rejected from 1946 to 1952 show 112 acres were rejected during that seven-year period; 79.2 acres (about 71 per cent) were from the vicinity of Magnolia and the balance of 32.8 acres (about 29 per cent) were from the remaining areas. During the seven-year period 2,517 acres were inspected, of which 657 acres (26 per cent) were from the Magnolia area. The balance, 1,860 acres (74 per cent), made up the acreage from all other locations. The Magnolia area containing 26 per cent of the acreage inspected was responsible for 71 per cent of blueberry stunt disease found.

The Magnolia area is rather solidly planted to blueberries. The majority of growers in this area grow them only for fruit and are not entered in the program. Therefore, they do little or no roguing, maintaining a reservoir of disease for dissemination by the insect vectors and possibly even discouraging some cooperators in the program.

POST-ENTRY QUARANTINE

Certain plant materials imported from foreign countries and capable of carrying virus and other plant diseases are allowed to enter this country only under permit and must be grown and kept segregated for a sufficient time to prove them free of disease. These requirements are in accordance with Quarantine 37, revised September 1, 1948, Bureau of Entomology and

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Plant Quarantine, U. S. Department of Agriculture. In New Jersey the imported materials are grown under the supervision of this Department and periodic inspections are made to determine their health. During the year 226 inspections were made by State inspectors. These inspections included investigations to ascertain whether facilities were available to the importer for growing post-entry material, inspections of imported materials and final inspection prior to recommending release after the plants had been grown for an adequate period of time.

MATERIAL IMPORTED UNDER POST-ENTRY QUARANTINE

July 1, 1952 to June 30, 1953

Date of Entry 1952	Country of Origin	Quantity and Material	Destination by Counties
July	South Africa	36 Vitis plants (grafted on rooted cuttings)	Bergen
		84 Vitis (unrooted cuttings)	
September	Australia	2 Malus budded cuttings	Passaic
October	Holland	100 Ilex rooted cuttings	Monmouth
		30 Rosa sp. unrooted cuttings	Morris
December	Holland	50 Acer	Hunterdon
		75 Ilex	
		100 Acer	Middlesex
		74 Aesculus	
		974 Laburnum (plus 26 refused entry and destroyed)	
		500 Berberis thung. atrop. nana.	Morris
		500 Berberis thung. atrop. nana.	
		500 Acer	
		900 Acer. palm. atropurpureum	
		1,750 Berberis thung. atrop. nana.	
	England	6 Crataegus monogyna layers	Passaic
	Holland	40 Rosa	Somerset
		100 Berberis thunbergii atrop. nana.	Middlesex
	England	72 Apple stocks (Malling stock) (Malus)	
1953			
January	Holland	100 Rhododendron myrtifolium	Middlesex
March	Holland	220 Acer	Bergen
		100 Acer	Mercer
		100 Laburnum (including 16 destroyed at Hoboken)	
		1,000 Acer	Morris
		15 Rosa	
		1,000 Acer	Passaic
		200 Aesculus	Somerset
		1,000 Rosa	
		1,000 Acer	
		50 Acer	
		500 Ilex crenata	
		500 Ilex pyramidalis	
		1,000 Hydrangea Bouquet	
	Trinidad	18 Anthurium	
	Holland	100 Acer	Union

April	Holland	200	Acer	Bergen
		205	Acer	
		100	Anthurium	
		25	Wisteria	
	Belgium	10	Acer	Middlesex
May	Holland	200	Acer	Monmouth
		1,100	Ilex	
		1,000	Laburnum (including 25 re-	
			moved at Hoboken)	
	Japan	2	dwarf Juniper trees	Somerset Middlesex

MATERIAL IMPORTED DURING FISCAL YEAR BY GENUS

Genus of Plants	Number Imported
Acer	5,635
Aesculus	274
Anthurium	118
Berberis	2,850
Crataegus	6
Hydrangea	1,000
Ilex	2,275
Juniper	2
Laburnum	2,074
Malus	74
Rhododendron	100
Rosa	1,085
Vitis	120
Wisteria	25

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MATERIAL RELEASED UNDER POST-ENTRY QUARANTINE

July 1, 1952 to June 30, 1953

Shipment Released From Hoboken	Country of Origin	Quantity and Material	Number of Plants Released	Destination by Counties
7/14/49	Argentina	27 Rosa	15	Somerset
12/14/49	Holland	500 Laburnum	20	Monmouth
7/27/50	Manila, P. I.	2 Jasminum sambac	1	Union
11/11/50	England	100 Rosa	76	Morris
11/16/50	Holland	25 Prunus	24	Union
11/30/50	Holland	400 Acer palm.	329	Middlesex
12/8/50	Holland	15,000 Rosa	12,000	Bergen
12/11/50	England	1 Prunus	1	Passaic
		6 Crataegus monogyna	6	
12/11/50	Holland	4,000 Rosa	3,940	Bergen
12/13/50	Belgium	50 Anthurium	27	Union
12/13/50	Turkey	48 Vitis	30	Bergen
12/18/50	Holland	2,000 Jasminum	350	Monmouth
		500 Acer	439	
12/21-22/50	Holland	2,653 Acer	1,206	Morris
		160 Wisteria	122	
		350 Euonymus	350	
		905 Hydrangea	435	
12/21-22/50	Holland	13 Sorbus	9	Morris
		27 Euonymus	27	
		156 Acer	94	
		1,179 Hydrangea	517	
		23 Quercus	3	
		8 Aesculus	8	
		16 Prunus	16	
		121 Rubus	118	
12/26/50	Holland	2,750 Euonymus	383	Monmouth
12/27/50	Holland	129 Rosa	115	Bergen
12/28/50	England	25,000 Rosa	1,828	Morris
2/10/51	Holland	1,000 Rosa	670	Morris
2/28/51	Holland	906 Acer palm.	840	Morris
3/7/51	Holland	1,000 Acer	945	Morris
3/7/51	Holland	1,025 Acer	124	Morris
3/13/51	Holland	700 Acer	680	Union
3/18/51	Holland	60 Hydrangea	8	Morris
3/19/51	Holland	100 Acer	97	Passaic
3/27/51	Holland	600 Ilex	357	Monmouth
3/30/51	Holland	150 Acer	135	Monmouth
4/4/51	Italy	7 Ficus cuttings	7	Cape May
4/9/51	Holland	50 Ilex variegata	50	Camden
		25 Acer palmatum atropurpureum	16	
5/1/51	Germany	22 Rosa	18	Monmouth
8/30/51	Guatemala	1 Quercus	....	Monmouth
		3 Jasminum	....
		1 Dianthus	....
		2 Passiflora	....
11/26/51	Belgium	10 Ribes (currant)	....	Atlantic
		10 Ribes (gooseberry)	....
12/13/51	Denmark	500 Dianthus	130	Passaic
10/2/52	Holland	100 Ilex	....	Monmouth
10/21/52	Holland	30 Rosa	....	Morris
2/16/53	China	8 Rosa	....	Bergen

Comparing the number of plants originally imported with the number of plants surviving and released continues to raise doubts of the economic advisability of importing post-entry material from abroad except for new species or varieties or material difficult to raise or propagate in this country.

Of 62,459 plants originally imported, only 26,566 (42.5 per cent) were alive and released at the end of the quarantine period. The wisdom of importing such materials as *Acer*, *Dianthus*, *Euonymus*, *Hydrangea*, *Jasminum*, *Laburnum* and *Rosa* is questioned, since the survival of these plants during the quarantine period was unsatisfactory. Certain other genera survived the quarantine period fairly well, but, for the most part, these and the remaining genera were imported in such small quantities it is impossible to judge the survival rate properly.

Genus of Plants	Number Imported	Number Surviving and Released
<i>Acer</i>	7,615	4,905
<i>Aesculus</i>	8	8
<i>Anthurium</i>	50	27
<i>Crataegus</i>	6	6
<i>Dianthus</i>	501	130
<i>Euonymus</i>	3,127	760
<i>Ficus</i>	7	7
<i>Hydrangea</i>	2,144	960
<i>Ilex</i>	750	407
<i>Jasminum</i>	2,005	351
<i>Laburnum</i>	500	20
<i>Passiflora</i>	2	---
<i>Prunus</i>	42	41
<i>Quercus</i>	24	3
<i>Ribes</i> (currant)	10	---
<i>Ribes</i> (gooseberry)	10	---
<i>Rosa</i>	45,316	18,662
<i>Rubus</i>	121	118
<i>Sorbus</i>	13	9
<i>Vitis</i>	48	30
<i>Wisteria</i>	160	122

The desirability of importing certain new horticultural varieties or novelties might not depend upon high survival during the quarantine period. Such importations would be made to provide source material for propagation of these desired materials.

During the year two cases of possible virus disease were found in two lots of *Laburnum*. This condition, wide vein banding, is suspected by Federal pathologists to be *Laburnum* mosaic virus.

EUROPEAN CHAFER, *Amphimallon Majalis*

The European chafer, related to our "white grubs" is well established in the Geneva and Newark, New York, area and has been taken also from

the vicinity of Meriden, Connecticut. The last find probably is due to the movement of balled and burlapped nursery stock from a nursery within the New York infestation. Quantities of nursery stock from the same area have been received in New Jersey during the past 10 years and since such shipments were not always chafer-free (as required by New York state law) an effort was made to determine whether or not the chafer was present in New Jersey.

Scouting for this insect is especially difficult because it does not feed above ground. The adults emerge from the soil at dusk and flutter around vertical objects and in large numbers they give the appearance of working honeybees. Nevertheless, various sites in Mercer, Middlesex, Bergen and Union counties were scouted and trapped during the early summer months of 1952 and 1953.

Although no chafer was found, this may have been because the scouting and trapping methods are quite inefficient. Techniques have to be developed for these purposes and State and Federal interest in the subject at the present time should insure proper studies as well as adequate inspection of nursery stock prior to shipment from the infested areas.

RASPBERRY PLANT CERTIFICATION

One raspberry planting of 27 acres was inspected for a grower who desired inspection and certification of his planting for freedom from virus disease. This enables him to ship to states requiring certification.

JAPANESE BEETLE QUARANTINE ENFORCEMENT NURSERY STOCK SHIPPED UNDER CERTIFICATION

	Outside Area	Inside Area	Totals
1952			
July	151,769	61,751	213,520
August	83,319	6,462	89,781
September	256,832	42,829	299,661
October	421,912	68,721	490,633
November	246,272	28,036	274,308
December	477,903	84,001	561,904
1953			
January	279,856	13,805	293,661
February	251,509	97,091	348,600
March	426,431	191,671	618,102
April	383,762	99,162	482,924
May	230,538	54,138	284,676
June	443,309	74,868	518,177
Totals	3,653,412	822,535	4,475,947

Valued by shippers at \$1,551,959.86.

Method used for certification and number of plants certified.

	Number of Plants
(a) Plants treated "after digging" with methyl bromide, ethylene dichloride, ethylene dichloride-dibromide, ethylene dibromide-chlordane.	660,065
(b) Plants treated in the field "before digging" with DDT, chlordane, lead arsenate and ethy. dib-chlordane.	3,123,408
(c) Plants manually and visually inspected.	1,001,379

SUMMARY OF PLANT TREATMENTS

"Plants Before Digging"

Insecticide or Fumigant Agent		Square
DDT (includes initial treatment, retreatments, and areas previously treated that did not require additional DDT)	2,938,396	6,495,120
Chlordane and ethy. dibromide dich. (initial only)	185,012	
Totals	3,123,408	6,495,120

"Plants After Digging"

	Plants
Ethylene dichloride	25,825
Ethylene dichloride-dibromide	518,455
Ethylene dibromide-chlordane	89,846
Methyl bromide	25,939
Total	660,065

SURFACE SOIL TREATED IN GREENHOUSES, FRAMES, SHEDS, HEELING-IN-AREAS, ETC.

	Square Feet
DDT (includes initial treatment, retreatment, and areas previously treated that did not require additional DDT)	498,573
Chlordane ethy. dichloride dib. (initial only)	14,852
Lead arsenate (includes initial treatment, retreatment, and areas previously treated that did not require additional lead arsenate)	116,204
Total	629,629

POTTING SOIL TREATED

Agent	Cubic Yards
Carbon Disulphide	279.16
Chloropicrin	6.61
Chlordane	225.70
DDT	235.95
Heat	261.03
Total	1,008.45

PERSONAL CALLS MADE

Plant material and soil	3,874
Farm produce	22
Total	3,896

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	MEN EMPLOYED					
	Farm Produce		Nursery & Greenhouse		Totals	
	Federal	State	Federal	State	Federal	State
1952						
July	5	7	1	1	6	8
August	5	7	1	1	6	8
September	---	---	6	3	6	3
October	---	---	6	3	6	3
November	---	---	6	3	6	3
December	---	---	6	3	6	3
1953						
January	---	---	6	3	6	3
February	---	---	6	3	6	3
March	---	---	6	3	6	3
April	---	---	6	3	6	3
May	---	---	6	3	6	3
June	---	---	6	3	6	3

AUTOMOBILES OPERATED EACH MONTH DURING THE YEAR

	1952	Federal	State
July	---	---	13*
August	---	---	13*
September	---	---	9
October	---	---	9
November	---	---	9
December	---	---	9
1953			
January	---	---	9
February	---	---	9
March	---	---	9
April	---	---	9
May	---	---	9
June	---	---	9

*Some nursery work done by three of these 13 men.

PLANTS CERTIFIED, SURFACE AREAS AND BULK SOIL TREATED

(a) Nursery stock shipped under certification.		
1951-52	1952-53	
5,310,045	4,475,947	
(b) Plants treated "after digging" with methyl bromide, ethylene dichloride, ethylene dichloride-dibromide, ethylene dibromide-chlordane.		
1951-52	1952-53	
706,861	660,065	
(c) Plants treated in the field "before digging" with DDT, chlordane, lead arsenate and ethylene dibromide-chlordane.		
1951-52	1952-53	
2,922,041	3,123,408	
(d) Plants manually and visually inspected.		
1951-52	1952-53	
1,106,885	1,001,379	
(e) Square feet of surface soil treated with:		
1951-52	1952-53	
DDT 1,657,346	498,573	
Lead arsenate 89,817	116,204	
Chlordane and ethy. dichloride dib. ---	14,852	
Totals 1,747,163	629,629	
(f) Cubic yards of potting soil treated.		
1951-52	1952-53	
1,045.55	1,008.45	

Summer Quarantine - 1953
New Jersey

The work in New Jersey directed against spread of the adult Japanese beetle by the movement of farm products and vehicles to non-regulated areas was carried on by State and Federal personnel. Four seasonal employees were supplied by New Jersey for this work, one functioning at Newark, Teterboro and Linden airports where he assisted fulltime inspectors and the others engaged mainly in adult density survey.

The services of the seasonal employees were very helpful. The additional man was needed at the airports, while a thorough survey of adult beetle density in the central and northern parts of New Jersey was important in order that the hazard of adult beetle spread by movement of farm products and vehicles from heavily infested localities might be measured. It is recognized that all of New Jersey is generally infested, but there are population increases and declines in localities periodically which have a direct bearing on spread of the insect. Information supplied by this type of work makes prompt, direct action possible where indicated.

The full program consisted of certifying farm products, checking trucks for quarantine compliance and screening, checking refrigerator car DDT dusting, airplane treatments, foliage treatments at airfields, trapping at airfields, adult density survey and regular nursery and greenhouse certification work. These duties were performed by all the State and Federal inspectors.

Shippers, truckers, auction markets and railroads were notified by mail of the quarantine requirements and of the effective starting and termination dates for these seasonal activities.

There was no movement of farm products from the Trenton district to points outside the regulated area as in other years when 10 to 20 truckloads of sweet corn were shipped. Because of dry weather and wilt disease several fields were plowed under without yield. The potato acreage was considerably less than normal because of lack of subsidies and many farmers who reduced potato acreage planted wheat instead. Fruit and vegetables certified from the Glassboro office area were 9 truckloads of fresh beans, 13 of cabbage, 17 of apples, 39 of peaches and 17 with mixed loads of items already mentioned. There were 323 trucks contacted in connection with quarantine compliance. More solid-front trucks were employed for hauling potatoes this year than in previous years.

Only one refrigerator car, in Camden, was DDT dusted or fumigated in New Jersey and it was returned to the railroad yards unused.

Planes were treated with DDT aerosol and residual at:

Teterboro Airport, Teterboro
Newark Airport, Newark
Linden Airport, Linden
Naval Air Station, Lakehurst
McGuire Field, Fort Dix
Municipal Airport, Millville
Pomona Airport, Atlantic City
Mercer Airport, Trenton

Airport foliage treatments were applied at:

Teterboro
Linden
Newark
Lakehurst
Naval Ammunition Depot, Earle
McGuire

This activity was effective in noticeably diminishing the adult beetle population at the fields. Airport trapping was in operation at all of the fields listed under the above categories. There were 111,506 beetles collected during the season. In addition to reducing the number of beetles, the traps served as a reminder to cooperating airfield personnel of the importance of beetle work.

The volume of work at some of the larger nurseries this year made it impossible to complete all of the field treatments so they might be included in this report. The use of DDT for the certification of plots continued to be the most popular field treatment, but because so many treatments were made this summer, the data covering such treatments are not yet available.

A new treatment for bare root nursery stock has recently been released and should benefit the trade, since it may be used at any season of the year. This material consists of an ethylene-dibromide-chlordane mixture, in which plants, shrubs, etc. with a relatively small amount of soil adhering to the roots may be submerged for 10 seconds. Excess liquid is drained from the plant roots, after which the plants are eligible for certification and shipment. Plants treated with this material may be shipped immediately, an advantage in view of the holding period required when other treatments are used.

Experimental work is being conducted by Moorestown Research La-

boratory, Japanese beetle project and nurserymen in an effort to develop a soil ball injection method of treatment without need of a post treatment holding period before certification may be granted. This method has met with approval of nurserymen who hope the experiments will result in its authorization for use as a quarantine certification treatment.

The demand for nursery stock of landscape size continues to exceed the supply, due largely to the new housing developments in this area. Establishments are planting lining out stock, but it will take a number of years before these plants will develop into salable material. Labor in this rapidly developing industrial area is also a very serious problem to the nurseryman and is an important factor contributing to the high price of plant material.

Nursery practices have changed considerably over the last few years in order to keep pace with increasing business. A few years ago there were established shipping seasons, with shipments beginning in the spring as soon as the frost was out of the ground and ending as soon as spring growth began. In the fall digging operations began after a frost when plants became dormant. Open winters during the last few years, however, have enabled the shipper to have one continuous shipping season with only a short interval during the hot months of the summer. Some of the larger establishments have built cold storage facilities in which to store plants dug in the spring to keep them dormant, thus extending the shipping season even more.

Japanese Beetle Quarantine Information

On March 31, 1953, the Department was advised that U. S. Secretary of Agriculture Ezra T. Benson had recommended to the President and Congress that Federal funds were no longer needed for Japanese Beetle Quarantine. This action was taken in spite of expressions from industry and from the states, at every recent hearing that the Federal quarantine needed to be continued. As far as New Jersey agriculture was concerned, such a step was a serious threat to the nursery industry which protested the action and asked the help of the Department in solving the problem.

Accordingly, representatives of the nursery industry appeared before the House Subcommittee on Agricultural Appropriations and testimony was given by the Department before that committee and the Senate Subcommittee on Agricultural Appropriations, asking retention in the Federal budget of sufficient funds to allow continuation of the quarantine and control work presently being performed by the Federal Bureau of Entomology and Plant Quarantine.

The opinions and desires of the Department were most cordially received and proper funds were appropriated for continuation of the project. However, it is now the policy, at least in the U. S. Department of Agriculture to attempt to pass on to the states such work as quarantine enforcement. The Bureau of Entomology and Plant Quarantine appears to favor participation in survey and research work rather than in regulatory activities.

BEE CULTURE

Since the spring of 1949 a survey program has been carried on to locate scattered or abandoned colonies of bees that might be responsible for the rather stable amount of American foul brood in the State. For 10 years prior to 1949 about 4 per cent of the colonies inspected annually were found to be infected with this disease.

By June 30 the survey program had been completed in each county and 1,270 new apiaries containing 6,066 colonies had been found. It was possible to inspect 4,161 of these colonies and 252 of those inspected, 6.05 per cent, were found infected with American foul brood.

FOUL BROOD SURVEY

County	Yards Found	Colonies		American Foul Brood		European Foul Brood	
		Found	Inspected	Api- aries	Colo- nies	Api- aries	Colo- nies
Atlantic	20	313	255	4	20	2	4
Bergen	139	483	416	15	32	—	—
Burlington	49	315	212	3	3	1	2
Camden	38	256	247	7	22	1	5
Cape May	8	27	14	—	—	—	—
Cumberland	32	141	108	5	14	—	—
Essex	128	478	16	1	1	—	—
Gloucester	39	198	186	2	7	1	1
Hudson	8	20	12	1	1	—	—
Hunterdon	87	480	408	—	—	—	—
Mercer	56	331	201	2	4	—	—
Middlesex	66	362	269	10	25	—	—
Monmouth	58	295	125	5	23	—	—
Morris	152	575	338	10	24	—	—
Ocean	19	97	31	1	1	—	—
Passaic	52	184	134	1	1	—	—
Salem	22	167	147	4	32	—	—
Somerset	109	440	358	7	11	—	—
Sussex	60	304	215	1	1	—	—
Union	85	315	263	9	25	—	—
Warren	47	285	206	4	5	—	—
Totals	1,274	6,066	4,161	92	252	5	12

The finding of these colonies of bees should ultimately have a beneficial effect on the health of New Jersey apiaries. Continuing surveys should

be made, however, if maximum benefit is to be derived from this work. Bees are being abandoned and moved continually, and constant awareness of these factors is necessary if American foul brood is to be controlled. Actually, of 1,851 colonies inspected during the year, only 99, 5.3 per cent, were found diseased with American foul brood. This is considerably below the proportion found in the earlier years of the survey and indicates that even in the survey work less disease might be expected as a result of the finding and clean-up of the unreported colonies.

The regular inspection of apiaries in the State was continued during the past year. Aid was given in diagnosing and controlling the various bee disease problems in every county except Hudson.

Five hundred seventy-seven apiaries, including those found in the course of the survey were visited for inspection work. There were 5,607 colonies and 615 nuclei examined for bee diseases. American foul brood was found in 95 apiaries, 283 colonies being infected with the disease. Five per cent of the colonies inspected were found diseased with American foul brood. This number might be considered high, but it includes the scattered and abandoned hives found on survey. Sixty-seven colonies infected with European foul brood were discovered in 11 apiaries. In the enforcement of the bee law it was found necessary to destroy and burn 55 colonies infected with American foul brood to control further outbreaks of the disease.

Microscopic Determination

This phase of the bee disease control program continues to play an important part in the work. Of the 60 smears submitted for examination, 19 were positive for American foul brood, *Bacillus larvae*, and 22 for European foul brood, *Bacillus pluton*. Nineteen were apparently negative.

There were 11 queen-rearing certificates and 23 transfer certificates issued during the year.

County	REGULAR INSPECTION WORK										Microscopic Determinations	
	Apiaries	Colonies	Nuclei	Crossed Comb	Apiaries A.f.b.	Colonies A.f.b.	Apiaries E.f.b.	Colonies E.f.b.	Colonies Burned	A.f.b.	E.f.b.	Negative
Atlantic	4	154	---	---	3	13	---	---	---	---	---	---
Bergen	13	41	---	---	6	10	---	---	1	3	---	---
Burlington	73	603	---	8	20	78	6	35	2	3	12	4
Camden	56	394	---	3	1	2	1	1	---	---	3	3
Cape May	4	55	25	---	---	---	1	1	---	---	1	---
Cumberland	3	24	---	---	---	---	---	---	---	---	3	2
Essex	3	24	---	---	1	2	---	---	3	4	---	1
Gloucester	42	297	---	2	5	12	1	2	---	---	---	---
Hunterdon	60	1,078	530	10	1	1	---	---	---	---	---	---
Mercer	41	445	17	2	6	13	---	---	---	---	---	---
Middlesex	21	202	---	2	6	13	---	---	---	2	---	1
Monmouth	18	122	---	---	3	7	---	---	14	---	---	---
Morris	137	1,081	---	9	26	78	---	---	4	4	2	2
Ocean	2	51	---	---	1	1	---	---	---	---	---	4
Passaic	11	96	43	---	1	1	---	---	---	1	---	1
Somerset	25	354	---	26	4	4	2	28	---	1	1	---
Sussex	16	138	---	---	2	5	---	---	---	---	---	---
Union	17	129	---	---	3	7	---	---	1	---	---	1
Warren	31	319	---	19	6	36	---	---	30	1	---	---
Totals	577	5,607	615	81	95	283	11	67	55	19	22	19

Seasonal Observations

Colonies used for cranberry pollination were removed from the bogs during July and placed in yards where a favorable prospect for a fall flow of nectar was possible. Such colonies must receive special attention from the beekeeper to revamp them for pollinating work during the coming year.

In August there was a great deal of variation in the condition of the colonies inspected. Some had surplus honey while others were on the point of starvation. In some cases beekeepers were uniting weak colonies in order to provide a proper number of field worker bees per colony to gather the fall honey flow. This also aided in keeping down the winter loss.

In September the cool weather at night and relatively high temperature during the day stimulated nectar secretion in the fall blooming plants. The weather was also favorable for honeybees to work the various fall blooms. Normal colonies stored sufficient honey for their winter needs and in some locations a surplus was harvested. Colonies that did not have a reasonable number of field bees during the month needed special attention from the beekeepers. In some cases combs of surplus honey could be distributed to the colonies in need, provided no bee disease existed in the apiary.

During October it was stressed that adequate ventilation was necessary so that accumulated moisture might escape from the hives throughout the winter months.

Brood rearing gradually ceased during November, since normal colonies of bees were found arranging their food supply near the position to be occupied by the winter cluster, making further inspection impractical. The placing of dry sugar on the inner cover during November as supplementary winter food has become a regular practice among the better beekeepers.

An additional flight hole near the top of the hive, permitting the warm moisture-laden air to escape from the hive, has also become a general practice. This reduces the chance of condensed moisture collecting inside the hive during cold weather. The bee cluster remains very quiet when the surroundings are dry. These two measures, which have long been advocated by the Department, have lessened spring dwindling and dysentery, cutting down winter loss.

The outside temperature prevailing during December was favorable for good wintering of the bees. Two breaks in the winter weather, one day during the early part of the month and one day the late part of the month, made it possible for the bees to break cluster and take cleansing flights.

As colonies were checked it was noticed that there had been good consumption of the dry sugar previously placed on the inner covers of the hives.

One break in the outside temperature during the middle of one January day permitted the inspection of one apiary located in Somerset County. The apiary consisted of nine colonies and was apparently free of brood diseases. The bees were at least one month ahead of schedule in brood rearing. This would not cause any distress, provided the temperature continued to be reasonably mild. A sudden drop in temperature would cause the bees to cluster tightly, thus exposing and chilling some of the developing brood on the outer edges of the brood nest. Beekeepers finding dead brood of this character sometimes confuse it with American foul brood.

In February the weather was favorable and the bee disease scouting program was completed in Camden and Mercer counties. The regular inspection program for 1953 was scheduled to start during March, if the weather remained favorable. During the month the outside temperature was sufficiently high to permit the bees to break cluster and leave their hives for a cleansing flight. Some of the maples, early crocuses and skunk cabbage were in bloom and were visited by the bees for pollen.

It was noted in the course of inspections throughout March that prevailing temperatures permitted the colonies to break cluster and spread their brood nests. No neglected or chilled brood was found. The amount of recently stored pollen and nectar found in the colonies examined was considered sufficient to stimulate brood rearing. With a continuance of favorable weather, normal colonies would have an average number of field bees for the early pollination of peaches, apples, pears and blueberries.

In April the winter loss of colonies was estimated at 5 per cent, a low figure. Causes of death were lack of food, too small units of bees for proper winter cluster and American foul brood.

During May a beekeeper in Burlington County, fearing an outbreak of European foul brood, called for assistance in diagnosing disease in his apiary. An examination revealed that European foul brood was not the cause. While the larvae died during the feeding stage, as is typical of European foul brood, the position of the dead larvae in the cells remained elongated on the lower cell wall, with all segments intact. The damage apparently was caused by a toxic material gathered by the field bees and fed to the bee larvae. In this particular case sufficient field bees were present in the colonies to remove the dead larva from the cells in a reasonable period of time.

Another outbreak of European foul brood was reported in Cumberland County during June. It was found that the owner had purchased out-of-State queens last season, supposing them to be of American foul brood resistant stock. In previous experiments conducted in various parts of the country it has been conceded that stock resistant to American foul brood can, nevertheless, be very susceptible to European foul brood. It was recommended that the owner select from his own colonies and raise queens that show a resistance to European foul brood. All colonies having shown any symptoms of the disease should be requeened with vigorous young queens from the selection during the remainder of the season.

GYPSE MOTH

The program of gypsy moth scouting and trapping in New Jersey is part of a coordinated program of the infested New England states, New York, Pennsylvania and New Jersey. Coordination is achieved with the help and interest of the Federal government and the Council of State Governments. The Department has participated freely in determining the program followed in the various neighboring states so that maximum protection might be afforded to New Jersey.

There is good evidence at the present time that adequate tools and facilities are available to completely eliminate this insect from the United States over a reasonable number of years. The cost of such a program might be about \$25,000,000 over a period of about 15 years. Nevertheless, the accepted program at present calls for "holding" this insect inside the infested area. The governmental agencies involved have not been able to recommend an eradication program, primarily because of the large sums of money which would be needed to bring it to successful completion.

The trapping and scouting programs for evidence of gypsy moth infestation were continued during the year with the help of three permanently assigned inspectors and two assistants for the trapping work.

Early in July 850 traps were located in favorable sites.

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GYPSY MOTH TRAPS

BERGEN COUNTY

Township or Borough	Number of Traps
Oakland	20
Franklin Lakes	10
Mahwah	22
Ramsey	5
Upper Saddle River	5
Saddle River	5
Park Ridge	3
Woodcliff Lake	3
Hillsdale	2
Allendale	6
Fairlawn	2
Paramus	9
Alpine	26
Englewood	7
Englewood Cliffs	5
Closter	3
Rockleigh	3
Norwood	4
	<hr/>
	140

HUNTERDON COUNTY

Township or Borough	Number of Traps
West Amwell, Lambertville & Delaware	49
Frenchtown	7
Alexandria & Milford	14
Holland	27
Raritan	30
Kingwood	40
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MERCER COUNTY

Township or Borough	Number of Traps
Ewing	19
Hopewell	29
	<hr/>
	48

MORRIS COUNTY

Township or Borough	Number of Traps
Randolph	55
Mendham	40
	<hr/>
	95

STATE DEPARTMENT OF AGRICULTURE

PASSAIC COUNTY

Township or Borough	Number of Traps
Ringwood Borough	40
West Milford	65
Wayne	25
Totowa	2
North Haledon	4
Hawthorne	3
Paterson	2
West Paterson	2
Little Falls	2
	<hr/> 145

SOMERSET COUNTY

Township or Borough	Number of Traps
Hillsboro	60
Montgomery	40
	<hr/> 100

WARREN COUNTY

Township or Borough	Number of Traps
Knowlton	32
White	24
Belvidere	8
Harmony	36
Lopatcong & Phillipsburg	21
Pohatcong	34
	<hr/> 155
Total Traps in State	350

The traps were serviced at 7 to 10-day intervals throughout the period when the male moth would be in flight. Finally, in early September, the traps were removed and returned to the headquarters of the Federal Gypsy Moth Project which had provided them. No moth was captured throughout the season. As a result of the trapping program in Pennsylvania, male moths were again taken near Quakertown. This indicated the presence of a small colony at that point, only 15 miles from our western border. During the fall months a small colony was located and in the spring of 1953 an eradication spray was applied from aircraft. Only a few years ago a large infestation was found and destroyed in this same area.

Following completion of the trapping work in New Jersey scouting of favorable woodland was begun by the permanent three-man crew. That work continued through the winter and spring months of 1952-1953 until heavy foliage of trees precluded the performance of effective work.

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WOODLAND ACRES SCOUTED FOR GYPSY MOTH
(October 1952 to May 1953 inclusive)

County	Township	Acres Woodland
Bergen	Alpine	498
	Cresskill	175
	Demarest	265
	Englewood Cliffs	142
	Interstate Park	187
	Tenafly	527
		<hr/>
		1,794
Hunterdon	East Amwell	263
Mercer	Hopewell	168
Morris	Denville	235
	Morris	535
	Parsippany-Troy Hills	315
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		1,085
Somerset	Bridgewater	188
	Hillsborough	212
	Montgomery	158
		<hr/>
		558
State Total —		3,868

It is encouraging to report again that no sign of gypsy moth was observed throughout the whole year's work.

ALFALFA WEEVIL, *Hypera postica*, Gyll.

The alfalfa weevil, *Hypera postica*, an import from Europe, has been prevalent in the Rocky Mountain and Pacific Coast states for many years, being recorded from Salt Lake City, Utah, as early as 1904. Field studies have indicated and it has long been believed that the insect, which is of considerable economic importance in the West, could not become established in the eastern part of the country because of climatic requirements.

In the spring of 1952 Maryland and Delaware reported severe infestations of the alfalfa weevil and it was deemed advisable, therefore, to scout for this insect in New Jersey. Accordingly a project was initiated in co-operation with Prof. R. S. Filmer of the State Agricultural Experiment Station. The Department furnished a field man and his transportation to scout alfalfa fields over the State and make weevil collections. The Experiment Station received the collections and identified the specimens.

Alfalfa weevil, *Hypera postica*, was collected in New Jersey for the first time on June 17, 1952. During that month specimens were taken in sweep-net collections in Cumberland, Salem, Gloucester and Atlantic counties. The remainder of the scouting season was then used to delineate the infestation and to record the development of the various stages of the insect.

The 1952 survey showed that this weevil exists in the counties bordering the Delaware River, west of a line running from Mickleton to Mullica Hill to Millville. An infestation was also found around Atlantic City. The heaviest infestations were in the Bridgeton-Salem area and in the Cape May-Rio Grande section. The fact that the weevil was not found here until June 17, which is near the end of the first brood larval period, limited the period of effective scouting. It is possible, therefore, that infestations are more general than indicated by the survey.

The life history and development of the alfalfa weevil under New Jersey conditions is being determined by Professor Filmer at the Agricultural Experiment Station. Control measures will also be recommended from time to time by specialists of the station.

At the end of the 1952 scouting season 508 pinned specimens of native weevils, other than alfalfa weevils, had been accumulated from the sweep-net operations. It is likely that most of these insects would not be pests, but they will be determined and a better understanding of the insects of alfalfa, therefore, will be had.

EUROPEAN CORN BORER SURVEY

The annual survey to determine the abundance of European corn borer, *Pyrausta nubilalis*, larvae in corn stalks was performed, as in past years, during October and November. The number of larvae found in the fall months of 1952 give a slight indication of damage that might be expected on corn during the 1953 growing season.

In performing the survey inspectors made counts of larvae in a standard number of stalks in 10 fields in each county, except Hudson where no count is made and Essex and Union where five fields in each county are sampled. The average number of borers per 100 plants was then determined for each county.

CORN BORER SURVEY

County	Average Number of Borers per 100 plants		Estimated 1952 Loss	
	1952	1951	Bushels	Dollars
Atlantic	58	68	2,188	3,720
Bergen	94	58	375	635
Burlington	105	161	38,503	65,455
Camden	60	433	3,558	6,049
Cape May	75	88	3,858	6,559
Cumberland	98	118	14,163	24,077
Essex-Union	59	62	506	860
Gloucester	97	185	10,376	17,639
Hunterdon	99	13	5,648	9,602
Mercer	87	29	7,547	12,830
Middlesex	61	115	3,662	6,225
Monmouth	22	36	4,878	8,293
Morris	39	6	645	1,097
Ocean	54	50	1,958	3,329
Passaic	82	91	189	321
Salem	71	44	21,000	35,700
Somerset	60	29	2,774	4,716
Sussex	16	25	402	683
Warren	29	4	5,623	9,559
State mean comparable counties (19) 67			127,863	217,352

There was apparently a reduction in the over-all population of European corn borers in New Jersey in 1952 as compared with 1951. The greatest reduction occurred in Camden County, where the 1952 population appeared to be of about the same density as that in neighboring counties. In general the current infestation is at a low level, evenly distributed over the State.

It is now believed that this insect can be considered absorbed into the agricultural economy. Within New Jersey it may be abundant or scarce with damage correspondingly heavy or light, depending upon various natural factors which customarily affect insect populations and over which man has no control. The population on any one farm can be kept down, of course, with various insecticides, but, for all practical purposes, the statewide European corn borer damage will be dependent upon such factors as weather and parasite build-up. It is believed, therefore that further surveys of the status of this insect would have little value and it is proposed to discontinue the study.

WHITE-FRINGED BEETLE, *Graphognathus* sp.

During the summer of 1952 it was possible for two inspectors, engaged primarily in other work, to make a considerable number of observations for signs of infestation by white-fringed beetle.

The environs of 13 nurseries in Monmouth County and six in Union County, a total of 543 acres, were inspected with negative results.

Scouting, again with negative results was done along

Route 40 (N. J.) from Marlton to Whiting-Burlington and Ocean counties

Route 9 (U. S.) from Freehold to Absecon-Monmouth, Ocean, Burlington and Atlantic counties

Route 10 (N. J.) from Morristown to Ledgewood-Morris County

Route 6 (N. J.) from Ledgewood to Buttzville-Morris and Warren counties

Observations were also made in the following counties at the points indicated, but no white-fringed beetle was found.

Burlington County	Monmouth County
Bustleton	Allentown
Hedding	Allenwood
Moorestown	Brielle
Camden County	Collingswood Park
Berlin	Farmingdale
Cumberland County	Ocean County
Vineland	Point Pleasant
Gloucester County	Salem County
Cross Keys	Daretown
Glassboro	Monroeville
Hardingville	Palatine
Hunterdon County	Somerset County
Baptistown	Bound Brook
Croton	Somerville
Flemington	Sussex County
Lambertville	Branchville
Rosemont	Franklin
Stockton	Hamburg
Mercer County	Lafayette
Hamilton Square	Montague
Pennington	Sussex
White Horse	Warren County
Middlesex County	Anderson
Dunellen	Hackettstown
Highland Park	
Metuchen	
Middlesex	
New Brunswick	
New Market	

Although these are scattered observations, there is little likelihood that a large infestation of this insect could be present in the State without detection.

GOLDEN NEMATODE, *Heterodera rostochiensis*, OF POTATOES

The Department again cooperated with the Golden Nematode Project of the Federal Bureau of Entomology and Plant Quarantine in a survey

to determine whether golden nematode is present in the potato growing areas of the State. Debris from potato grading machinery was collected and the material dried and processed and then carefully examined by a trained team from the Federal project. A total of 1,594 samples, representative of 10,563 acres of potatoes, was diagnosed in this manner and again no golden nematode was found in the material.

SUMMARY OF THE SAMPLING

County	Acres Sampled	Number of Samples
Burlington	775	166
Cumberland	520	40
Gloucester	180	10
Mercer	2,997	376
Middlesex	2,323	297
Monmouth	3,538	662
Salem	230	43
Totals	10,563	1,594

Although the regular survey for this nematode proved negative, a viable cyst was taken on October 13 from a 7½-acre family farm about 1½ miles east of Browntown, near Matawan, in Middlesex County. The land was sampled after information was obtained that waste material from a carpet-pad mill in Rahway had been used for incorporation into a piece of heavy clay soil on this farm. The waste, consisting of loose fibers, dust and dirt from used burlap, some of which had been used agriculturally in foreign countries, was compressed into 1,000-pound bales at the factory.

Until the spring of 1952 the bales had been burned on the mill property, but the Rahway health authorities judged this a nuisance at that time and ordered the burning stopped. Disposal of the waste became a problem at that point and the mill gave the material to anyone who could use it. Investigation revealed that the State Prison Farm in Rahway had also used the waste, but subsequent examinations of the soil proved negative at that farm.

After finding the cyst at Browntown, the Department arranged to rent the land so that it could take any measures it deemed necessary to control the infestation. Arrangements were then made to fumigate at the proper time during the late spring of this year.

One application of "D-D," the fumigant recommended by the authorities working with the nematode on Long Island, was applied to the 7½-acre plot at the rate of 450 pounds per acre on May 29. Another will be applied in July 1953.

The cooperation that was received from private individuals and public

agencies in the accomplishment of the fumigations was outstanding. The Agricultural Experiment Station furnished valuable technical assistance. The State of New York loaned the Department a steam jenny for cleaning purposes and two technicians to operate this equipment for two full days. The Golden Nematode Project of the Federal government in Hicksville, Long Island, assisted State personnel throughout and most important of all, the Maier Brothers of Pine Brook, New Jersey, donated the power machinery needed, including a tractor and operator and a mechanic, to apply the fumigant. The job was actually done by Maier Brothers with supervision by this Department. The fact that this assistance was volunteered is indicative of the importance placed on this pest by the agricultural interests of this State, and also of the helpful and generous attitude of the agricultural interests toward this Department.

Sampling of the land after fumigation failed to demonstrate additional nematode cysts and if this condition continues, the landowner will be allowed to make free use of his land again within two years. Of course, it has been necessary to forbid the movement of any plant material or other products from this land, since the nematode was found.

The Department has requested that the United States Department of Agriculture forbid importation of agricultural burlap into this country unless it has been treated to destroy all stages of golden nematode. Up to the present time, however, satisfactory regulation has not been achieved.

TEMPORARY EMPLOYEES

In order to complete the field work assigned to the Bureau for the summer months of 1952, it was necessary to hire 10 men for about 10 weeks beginning July 1. Their assistance contributed greatly to the success of the golden nematode, alfalfa weevil, white-fringed beetle, gypsy moth and rodent ectoparasite surveys, Japanese beetle quarantine and blueberry certification.

APPLE AND PEACH SURVEY

In December, a survey of apple and peach orchards in the State was initiated at the request of the New Jersey State Horticultural Society and in cooperation with Prof. Arthur J. Farley of the Agricultural Experiment Station.

The objective of the survey was to bring up-to-date the data compiled in the surveys on this subject, results of which were published by the Department in July 1947 and February 1948 (Circulars 369 and 373).

In the earlier surveys information was obtained from about 1,600 apple growers and 1,100 peach growers, constituting practically all the fruit orchards in the State. The current survey would use information from only about 350 apple growers and 475 peach growers. It is believed that trends in varieties and acreages can be deduced from the sample survey, though it will hardly provide a real inventory.

All questionnaires to be used for the survey had been returned by mid-April, with the assistance of the nursery inspectors, and arrangements were then made for tabulation of the data.

FOREIGN PLANT QUARANTINE

During the winter months one inspector of nurseries, L. Donald DeBlois, made a study of the inspection system of plant material imported from foreign countries. Much of this material enters the United States through the port of New York and is then serviced in Hoboken. Because of many complaints from the nursery industry and from several other states it was believed that factual information was needed and the study was planned to furnish this.

Several procedures have been discovered which appear to present a hazard, especially with regard to the ability of golden nematode, *Heterodera Rostochiensis*, to enter New Jersey. The report is being used in the cooperative work of the Department and the Bureau of Entomology and Plant Quarantine of the Federal Government.

WEED SURVEY

Because of the need for basic data in determining the place of agriculture in a program for weed control, the Department procured the services of a graduate student in Botany to make a survey of the important weeds of the State. The work would be done during the period June 10 to September 15, 1953, and the results will be available and useful to the Governor's Weed Control Committee, whose broad purpose is to recommend measures for the alleviation of suffering due to heavy pollen concentrations and other weed-caused hazards to health.

The survey will be confined to about 15 important and common weeds and will attempt to define areas of abundance. A series of maps will be made for this purpose. This should provide a worthwhile contribution to the knowledge of weeds as they affect human health.

RODENT ECTOPARASITE SURVEY

A survey was started in June 1951 in cooperation with the New Jersey Agricultural Experiment Station to gather information on insect and other arthropod parasites of mammals in the State. Inspectors of the Department have continued to collect and deparasitize the host animals and assist in gross separation of the ectoparasites. Dr. Elton J. Hansens of the Experiment Station has directed the project and is recording the results for later publication.

From July 1 to September 30, 1952, two temporary employees of the Department collected 632 rats from 45 locations in 18 counties, a total of 2,545 specimens submitted since initiation of the project. An additional 245 rats were collected by other cooperators which brought the total to 2,790 rats available for study. The parasites were removed from all these animals by personnel of the Department and much of the gross separation was also done by the inspectors. In all, rats were collected from 104 sites scattered through all the counties of New Jersey. The heaviest collections were made in the Metropolitan New York and Camden areas. Only four species of fleas were taken and one of these *Ceratophyllus gallinae*, taken from a rat in a chicken house in Washington, New Jersey, would not normally inhabit the rat. The three flea ectoparasites which have been found infesting rats in New Jersey are *Xenopsylla cheopis*, *Nosopsyllus fasciatus* and *Ctenocephalides felis*.

Large numbers of mites have been taken from the same rats. Some 20 families have been recognized from the first series of about 1,200 slides on which the mites are mounted. When all the mites are finally determined, there will undoubtedly be many new species and, probably, genera. Only one species of louse, *Polyplax spinulosa*, has thus far been identified from this material.

At a conference of the various agencies interested in this survey on October 30 it was agreed that a sufficient number of rats has been taken and that other mammals should now be collected. Representatives of the Experiment Station, the Department of Agriculture, the State Department of Health, the Fish and Game Commission, First Army Medical Laboratory and the Fort Dix Surgeons Office formulated the following program:

1. Emphasis will be shifted from collection of rats to other mammals.
2. The Fish and Game Commission would collect specimens of larger mammals and some smaller mammals.
3. Military personnel would collect small mammals on the Fort Dix reservation.

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4. Small mammals would be collected (from orchards primarily) by personnel of the Department of Agriculture.

5. Parasites would be submitted to Doctor Hansens' office for study.

Thereafter, as time permitted during the 1952-53 winter months, the inspectors were engaged in the trapping of small mammals; mainly mice, moles and shrews. By the end of the year, the following small mammals had been trapped for this program:

Pine Mice	137
Meadow Mice	103
Shrews	42
Deer Mice	18
House Mice	9
Kangaroo Mice	6
Total	315

BUREAU OF PLANT PATHOLOGY

CANKER STAIN DISEASE CONTROL

(Calendar year, 1952)

One field man was employed nine months on the canker stain disease control project. During this time scouting was conducted in 94 municipalities in seven counties. A total of 117,150 plane trees was examined for evidence of canker stain disease and 362 new cases were detected and tagged for removal. There were also 102 cases from last year that had not been removed, making a total of 464 canker stain diseased trees tagged in 1952. This represents approximately an 18 per cent reduction in the number of new cases, but only a 4 per cent over-all reduction in the total number of cases because of the larger number of diseased trees standing from 1951.

The fact that so many diseased trees were not removed is most frustrating, not only to the Department but also to the shade tree officials in many municipalities who are trying very diligently to assist in controlling this disease. It is apparent that failure of even a few cities, particularly those located in the heavily infected areas of Camden County, to comply with control recommendations will make it very difficult to conspicuously suppress the disease. It is understandable why a municipality will become discouraged after spending several thousand dollars to remove their diseased trees then learn that an adjoining community allows its trees to stand until it is convenient to remove them, or in some cases, until they fall down.

Considerable time was devoted to public relations and educational work in an attempt to get all communities to follow State control recommendations. It is difficult, however, to keep abreast of all the changes that occur in every community, particularly the seemingly constant turnover of labor personnel of the various street and park departments, the agencies generally responsible for the removal of the diseased trees. In several instances a change in political administration completely changes the entire control program as originally established by the Department necessitating renewed negotiations with the newly elected officials. The degree of effective control the Department is able to obtain depends to a great extent upon the prompt removal of the diseased trees by the municipalities concerned. In some cases careless diseased tree removals and pruning operations tend to spread rather than suppress the disease. This occurs usually in communities that do their tree work with street department crews that are untrained in shade tree maintenance.

In an effort to promote effective sanitation methods and insure careful diseased tree removals, tree workers in numerous communities are personally supervised by a departmental representative while they are actually performing tree removal and pruning operations. They are shown how to remove diseased trees without endangering healthy ones, to properly dispose of diseased wood, how to properly sterilize tools and equipment, to remove diseased limbs and save valuable trees and to safely prune healthy plane trees. But often this work is wasted because of the changes in crew personnel or administration policies.

The exorbitant and fluctuating costs of canker stain diseased tree removals is a matter of concern to property owners, municipal officials and to the Department. A study of the cost of removing diseased plane trees in five average communities was made and compared to the cost of eradicating street trees during the Dutch elm disease project. The cost of removing canker stain diseased trees per DBH (Diameter Breast High) inch was found to be as follows:

Community A:

1949—Approximately \$3.50 per DBH inch, work done by the street department and charged to private owners.

1950—Removed only dangerous trees, could obtain no accurate records of costs.

1951—\$3.27 per DBH inch, work done by private contractor efficiently.

1952—\$3.48 per DBH inch, work done by private contractor efficiently.

Community B:

1951—\$1.96* per DBH inch, work done by special municipal crew, unsatisfactory from a control standpoint.

1952—\$2.48* per DBH inch, work done by special municipal crew, unsatisfactory, even less efficient than in 1951 and work not completed.

Community C:

1949 to 1952—Over this period the average cost for labor was \$1.88* per DBH inch. The work was done efficiently by the street department, but not promptly enough to obtain the best possible results. Power equipment is used here very effectively and is reflected in the lower removal costs. Two power saws and a truck equipped with a winch and a boom greatly speeds up the removal and wood disposal operations. It also makes it possible to reduce the number of laborers in the crew.

Community D:

1949—\$2.42* per DBH inch, work done by street department, very slow and unsatisfactory from a control standpoint.

1950—\$1.78* per DBH inch, work done by street department, power saws purchased, work performed more efficiently, some progress made.

1951—\$2.11* per DBH inch, work done by street department, not entirely satisfactory, removals slowed down because of pressure of other work.

1952—\$2.24* per DBH inch, work done by street department, more efficiently than in the past, diseased trees removed promptly.

Community E:

1948 to 1952—No accurate records available, but from figures quoted by the Superintendent of Parks and Public Property it is estimated that the average cost is approximately \$2.00* per DBH inch. Procedure followed is entirely unsatisfactory. This community is always so far behind in tree removals that in most cases they eradicate only the obviously dead trees.

*Indicates the cost of labor only, no attempt was made to estimate the cost or depreciation of equipment involved.

Accurate records of Dutch elm disease eradication costs were not readily available. However, after interviewing informed U. S. Department of Agriculture officials, and from field experience, 25 to 30 cents per DBH inch was considered to be the approximate cost of labor for removing the city trees and about 12 to 15 cents per DBH inch for the woodland trees. Although wages have increased considerably, it is apparent that a well-trained and organized crew can remove trees considerably cheaper than it is being done by the communities listed above. The present control procedure, followed since 1946, consists of: (1) early detection of the diseased trees by physical scouting and examinations; (2) arranging for the prompt eradication of the diseased trees by the concerned municipalities, and (3) the educational and public relation program, i.e., instructing shade tree officials, public utilities, line clearance companies, private tree companies, municipal tree workers, and private owners, etc., in proper sanitation methods necessary to control this disease. This procedure has materially checked the normal spread of canker stain. The reduction in the actual number of diseased trees found in the infected areas, however, is not as great as anticipated,

chiefly because of the failure of certain municipalities to promptly remove their diseased trees as recommended by the Department. Until this condition can be corrected it is doubtful if this disease can be brought under satisfactory control.

Plans for 1953 are to intensify public relations work in the heavily infected areas of Camden County in an attempt to get better cooperation with the apathetic municipalities, and to increase scouting activities in the northern and northwestern portions of the State in an effort to guard against disease spread.

PROGRESSIVE REPORT—CANKER STAIN DISEASE CONTROL

County	Trees Scouted	Tagged Trees to January 1, 1952			Trees Tagged in 1952	Total Tagged Trees Standing Jan. 1, 1953
		Total	Removed	Standing		
Atlantic	5,000	0	0	0	0	0
Burlington	18,700	113	112	1	7	8
Camden	56,600	2,270	2,173	97	340	437
Cumberland	3,250	0	0	0	0	0
Gloucester	6,900	26	26	0	4	4
Monmouth	20,000	1	1	0	0	0
Salem	6,700	54	50	4	11	15
Totals	117,150	2,464	2,362	102	362	464

OAK WILT SURVEY

(Calendar year, 1952)

A disease of oak trees, commonly known as "Oak Wilt" and caused by the fungus *Endoconidiophora jagacearum*, has attracted increasing attention since 1950 because of reports from the Central States that the oak stand of the country is being threatened by the spread of this disease. With the discovery of the disease in 1951 in Pennsylvania and Maryland, the Federal Division of Forest Pathology has sponsored a State cooperative aerial scouting program for 1952.

The Department allocated \$400 which was expended for the rentals of planes, each carrying the pilot, a map man and two observers. The northern half of the State was aerielly scouted with planes rented at the Morristown Airport; the Stinson for 8 hours and 40 minutes at \$18.00 per hour and a Piper J-3, for 7 hours and 40 minutes at \$11.50 per hour. The southern half of the State was scouted from planes rented at the Florence Airport; a Stinson for 7½ hours at \$22.00 per hour. The map men and the two observers riding the plane were employees of the Federal Division of Forest Pathology.

This aerial scouting detected three suspects:

- 1.—South side of Kittatiny Mountain Range about $\frac{1}{4}$ mile west of Culver's Gap on Sussex County Route 521.
- 2.—In Somerset County, one mile east of Watchung Bridge on County Route 527, then north on dead-end road to tree location.
- 3.—In farm woodlot, Burlington County, northeast of Wrightstown.

Samples collected from each of the three suspect trees were submitted to the Rutgers Department of Plant Pathology for culturing. Negative findings were reported.

TOMATO SEED CERTIFICATION

Many observers interested in correlating rainfall and temperature to the production of agricultural crops have been forced to conclude that there is no "normal year." Either rainfall or temperature or both display such erratic features that sometime during the growing season production is retarded. For 20 years during which the Department has been issuing tomato seed certification reports, no climatological information has been included because there were no extremes. However, the season of 1952 should not pass unrecorded because of the drastic consequences of both the deficiency and excess of precipitation, but more particularly the extreme hot weather during the months of June and July.

The transplanting season in southern New Jersey usually begins during the last week of April and continues for about one month. The excess precipitation and the below normal temperatures for late April and early May were such that New Jersey farmers were not in a position to accept for transplanting, southern-grown tomato plants. The synchronization of production of tomato plants in Georgia with suitable transplanting conditions in New Jersey is at best a hazard. In the spring of 1952 it was unusually so. With all these complications, however, most of the New Jersey acreage was planted by June 1.

During June the precipitation generally was below normal. This would not have been too serious under normal temperature conditions but the temperature rose to such unprecedented levels that the water losses from the ground were extreme. At the Bridgeton station, for example, 14 days of the month of June saw temperatures rise to 85°F., or above. The same condition prevailed elsewhere in the southern part of the State as shown by the records from Moorestown and Woodstown. For reasons not too well understood, a tomato blossom apparently will not set fruit with temperatures above 85°F. This extremely high temperature persisted into the month of July, with above

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85°F. reported for 24 days in Bridgeton, 24 days in Woodstown and 25 days in Moorestown. Of course, little fruit could be set during this five-week period.

The low degree of fruit setting could be reflected in cannery deliveries during August and September. Comparative records have not been compiled but observations indicated that many of the plants operated at 25 per cent capacity for the first two weeks of the season.

During the first week in August considerable rain fell throughout the entire southern portion of the State. Late July cultivations did little to destroy weeds because the seeds had not germinated due to subnormal rainfall, and growth had progressed to the point where cultivation of most of the fields was no longer worthwhile. With the heavy rains during the first week of August the weed seeds germinated and the growth was phenomenal. Weeds obscured many of the fields by August 15 making satisfactory field examinations not only difficult but in many cases impossible. A considerable acreage destined for seed production was rejected by the canners themselves because the luxuriant growth of weeds prevented a satisfactory examination of the plants. The reduction of acreage coupled with the reduction in yield because of the damaging June and July temperatures resulted in sharply decreased delivery to the cannery and a reduction in the pounds of seed saved. Fortunately, foliage disease was not serious or with the abundant weed growth would have caused many fields to be seriously reduced by defoliar diseases. Spraying in many cases was considered impracticable because weeds so encircled the tomato plants that they, instead of the tomato plants, would have received the spray dosage.

MONTHLY PRECIPITATION AND DEVIATION FROM NORMAL IN INCHES

	Bridgeton		Woodstown		Moorestown	
	Rainfall	Deviation	Rainfall	Deviation	Rainfall	Deviation
April	4.50	+1.10	5.55	+1.95	6.49	+3.41
May	4.19	+ .69	3.83	+ .64	4.16	+ .38
June	2.18	—1.48	2.03	—1.69	2.52	—1.25
July	3.77	— .56	3.60	— .96	3.95	— .59
August	6.99	+2.35	4.07	—1.07	6.83	+1.92

MONTHLY TEMPERATURE RECORDS—AVERAGE MAXIMUM AND MINIMUM
TEMPERATURES WITH NUMBER OF DAYS (In column "A") ON WHICH
TEMPERATURE WAS 85° F. OR ABOVE

	Bridgeton				Woodstown				Moorestown			
	Av.	Av.	Av.	"A"	Av.	Av.	Av.	"A"	Av.	Av.	Av.	"A"
April	64.2	44.9	54.6	0	63.7	43.0	53.4	0	63.5	43.9	53.7	0
May	72.5	50.9	61.7	0	72.2	49.6	60.9	0	70.4	48.7	59.6	0
June	83.5	63.9	73.7	14	82.7	61.5	72.1	13	83.8	60.3	72.1	15
July	87.9	69.5	78.7	24	88.9	67.6	78.3	24	89.3	65.9	77.6	25
August	81.4	66.3	73.9	4	83.2	64.0	73.6	13	82.8	62.6	72.7	11

POUNDS OF TOMATO SEED SAVED, 1952

	Rutgers	Marglobe	Pritchard	Improved Garden State	Stokesdale	Valiant	Ontario	Queens	Total
Seddsman	280	---	---	---	---	---	---	25	305
California Packing Corp.	14,725	---	---	4,992	---	---	80	---	19,797
Campbell Soup Company	788	---	---	---	---	---	---	---	788
H. J. Heinz Company	30,612	5,871	---	---	1,598	---	---	80	38,161
Ritter Seed Company	2,569	1,518	---	---	1,820	1,700	---	---	7,607
Francis C. Stokes Co.	2,805	300	350	---	---	---	---	---	3,455
Swedesboro Seed Company	---	---	---	---	---	---	---	---	---
Totals	51,779	7,689	350	4,992	3,418	1,700	80	105	70,113

TOMATO SEED CERTIFICATION 1943-1952

Varietal Distribution Certified Tomato Seed Acreages

	Bonny Best 35	Balti- more	Mar- globe	Valiant	Stokes- dale	Rutgers	Prit- chard	Garden State	Improved Camp- bell	Ontario	Queens	Total
1943	---	---	1,143	1	188	3,865	155	116	1	---	---	5,504
1944	---	---	1,163	---	164	5,095	105	155	13	---	---	6,770
1945	---	75	647	---	375	3,294	84	199	47	---	---	4,646
1946	---	25	923	121	718	4,595	131	150	---	---	---	6,663
1947	---	28	899	---	67	6,279	155	746	---	24	---	8,198
1948	---	25	481	25	36	4,041	6	316	---	16	---	4,946
1949	---	24	306	88	73	4,445	81	---	---	---	---	5,017
1950	---	15	607	80	75	3,860	12	68	---	---	---	4,744
1951	---	3	190	10	30	3,058	10	---	---	2	---	3,476
1952	---	---	258	31	79	2,658	13	---	---	4	6	3,301

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ACREAGE CERTIFIED, 1952

Seedsman	Rutgers	Mar-globe	Improved		Stokes-dale	Valliant	On-tario	Queens	Total
			Prit-chard	Garden State					
Cal. Packing Corp.	38	---	---	---	---	---	---	4	42
Campbell Soup Co.	1,270	---	---	252	---	---	4	---	1,526
H. J. Heinz Co.	114	---	---	---	---	---	---	---	114
Ritter Seed Co.	941	223	---	---	35	---	---	2	1,201
Francis C. Stokes Co.	108	25	---	---	44	31	---	---	208
Swedesboro Seed Co.	187	10	13	---	---	---	---	---	210
Totals	2,658	258	13	252	79	31	4	6	3,301

POUNDS OF NEW JERSEY CERTIFIED SEED VALIDATED FOR EXPORT SHIPMENT

July 1, 1952 to June 30, 1953

	Cuba		So. Africa	So. Ceylon	Puerto Rhodesia	Rico	Totals	
	Tomato	Vegetable	Tomato	Tomato	Tomato	Tomato	Tomato	Vegetable
July	1,623.5	41	---	---	---	---	1,623.5	41
August	100	---	25	20	---	---	145	---
September	206.5	4.5	---	20	25	50	301.5	4.5
October	1.5	2.5	50	---	---	50	101.5	2.5
November	---	---	50	30	---	---	80	---
December	25	---	---	50	---	70	145	---
January	---	---	20	30	---	---	50	---
February	8	1	300	---	---	---	308	1
March	.5	.5	50	30	80	10	170.5	.5
April	7	---	50	40	---	---	97	---
May	4	.5	---	26	---	---	30	.5
June	20	17	---	---	---	---	20	17
Totals	1,996	67	545	246	105	180	3,072	67

POUNDS OF NEW JERSEY TOMATO AND OTHER VEGETABLE SEEDS EXPORTED

FOR WHICH PHYTOSANITARY CERTIFICATES WERE ISSUED

June 1, 1952 to June 30, 1953

	Cuba		Costa Rica	Mexico		Puerto Rica	South Africa	Totals	
	Tomato	Vegetable	Vege-table	Tomato	Vegetable	Vege-table	Tomato	Tomato	Vegetable
July	13	48.5	20	---	---	---	---	13	68.5
August	50	10	---	---	---	---	---	50	10
September	30	50	19.5	50	287	---	---	80	356.5
October	---	---	---	50	55	---	---	50	55
November	15	---	---	95	197.5	11.5	---	110	209
December	---	---	---	75	125	---	---	75	125
February	---	---	29.25	208	600	---	---	208	629.25
March	---	---	---	---	40	---	---	---	40
June	---	---	---	---	---	---	10	10	---
Totals	108	108.5	68.75	478	1,304.5	11.5	10	596	1,493.25

Tomato Seed Certification Conference

Because of many operative complications the tomato seed certification regulations of the Department were amended in 1934 to allow only one variety to be grown for seed certification on any one farm. Many of the farmers who are contractors with the New Jersey canhouses in recent years have had to grow at least two varieties to minimize the production risk in the event of the mediocre performance of one variety. During the growing season of 1952 the Rutgers variety set fruit in a very limited way while the other varieties, particularly Garden State, produced an excellent crop. Rather than turn entirely to an acreage of Garden State, many farmers would prefer growing two varieties of tomatoes. Of course, farms on which two kinds are being grown are disqualified from the standpoint of seed certification.

The idea of two varieties per farm gained such prominence by the spring of 1953 that the cannery-seedsmen were experiencing difficulty in contracting for sufficient seed acreage on the basis of one variety per farm. One of these seedsmen requested a reexamination of this paragraph of the regulations. Accordingly, a tomato seed certification conference was held in Camden in April 1953 with seven seedsmen attending. After considerable discussion and careful analysis of the problem the group unanimously decided to continue the existing regulations, namely, that the certification of fields of tomatoes shall be restricted to farms on which only one variety is being grown.

DUTCH ELM DISEASE CONTROL
(Calendar year, 1952)

During the summer of 1952 three men devoted part of their time to evaluating the severity of the Dutch elm disease and to maintaining or improving the effectiveness of the work done by the various municipal officials as they attempt to control the disease. The intensity of the scouting performed by the men was determined by the local cooperation which previous experience had convinced them they could reasonably expect in their respective localities.

In the densely populated northeastern section of the State there are many municipalities. Most of these have no local shade tree organizations with funds, help or enthusiasm sufficient to enable them to do an effective job. There are some cases, however, in which the responsible official desires to control the disease, but lacks a trained man qualified to determine whether or not a poor looking elm tree has Dutch elm disease. If he is told which

trees are definitely diseased he will have them removed and burned promptly.

In these cases a field man scouted the street trees (in most places no cooperation can be obtained in removing trees on private property) very carefully and reported to the person in charge the location of the infected trees. In nearly every case prompt removal followed.

Municipality	Trees Infected With Dutch Elm Disease
City of Newark	60
City of East Orange	37
Town of West Orange	5
City of Englewood	4
City of Hackensack	2
Township of Maplewood	10
Borough of Ridgewood	6
Township of Teaneck	2
Borough of Rutherford	2
Borough of Ridgefield Park	2
City of Passaic	5
Union Township	4
Total	<hr/> 139

The elm street and park trees in Newark have not been systematically scouted in the last few years. Attempting to revive interest in the detection and prompt removal of diseased trees a representative of the Department spent five days in the city making a casual survey of the trees. Sixty Dutch elm disease infected trees not localized but scattered throughout the city were detected. The disease could usually be attributed to the failure of removing nearby diseased trees of previous years. The disease incidence in Newark could not be caused by uncontrolled disease conditions in the neighboring municipalities.

East Orange has adequate man power to conduct systematic scouting, but the appearance of a considerable number of diseased trees in the summer of 1952 suggested an invitation to the State representative to assist in the scouting of this municipality. Thirty-seven infected trees were found, and the remnants of the previously diseased trees in neighboring municipalities and adjoining parks were believed to be largely responsible for the increased number of diseased trees. This municipality had planned the application of a pre-foliar bark beetle spray to all elm trees, but prolonged weather adverse to proper spraying almost completely frustrated the plan.

Ten infected trees were marked in Maplewood. The division of responsibility of tree maintenance even within municipal agencies is not to the best advantage for Dutch elm disease control. Elm trees under the jurisdiction of the Maplewood Department of Education did not receive a thorough scouting or punctual removal. Several large tracts of woodland

elms within the Borough of West Orange have complicated the Dutch elm disease control program there. The shade tree commissioner is trying his best to suppress and eradicate centers of infection so that not only this borough but the neighboring boroughs of South Orange and Orange may not be unduly jeopardized because of inactivity.

Passaic reported only five cases of the disease in spite of the large elm tree population. The shade tree officials of this municipality adhered to the control recommendations of the Department and the results have merited this intensive and sustained action.

The Essex County Park Commission is responsible for the maintenance of five large urban parks as well as the South Mountain Reservation. The availability of competent observers for the detection of Dutch elm infected trees has not yielded satisfactory results. In these areas 54 cases of Dutch elm disease were detected. The superintendent of maintenance after 20 years of experience with Dutch elm disease control is fully aware of the necessity of an annual vigilance if the numerous elm trees are to be preserved for the ornamentation of parks and roadways.

Many industrial organizations have established places of business in northeastern New Jersey during the past 15 years. Usually each property has an expanse of land which has been planted to trees and shrubs, of which elm trees are a large part. The Celanese Corporation of America in Summit requested the assistance of the Department in the examination of elm trees on their property from the standpoint of sanitation and diseased tree removal. Thirty trees were removed during 1951, but when this property was again scouted in 1952 only one diseased tree was found.

Early in the season it was observed that Dutch elm disease was found in some of the parks of the Essex County Park System. These trees are maintained by the Essex County Park Commission, regardless of the municipality in which they are located. The parks were scouted carefully and 52 infected trees were found, most of these in Verona Park and Branch Brook Park. In a few of the trees the infection was confined to a small portion, so pruning to remove these parts was recommended. The remaining infected trees were promptly removed.

Each season requests are received from property owners for inspection of their elms for disease. Such a request was received in June from the Baltusrol Golf Club, Springfield. Two hundred trees were inspected, and 27 were found infected and promptly removed. At a later inspection in October (after a brood of bark beetles had emerged) no newly infected trees were found.

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DUTCH ELM DISEASE REQUEST INSPECTIONS
Summer 1952

County	Requests	Trees Examined
Bergen	31	78
Essex	3	6
Morris	5	163
Passaic	3	203
Sussex	1	100
Union	5	522
Totals	48	1,072

In addition to destroying infected trees, considerable spraying both for elm bark beetle control and the control of defoliators is being done. However, there is reason to doubt that the full recommended dosage of DDT is being applied in these sprays. Mist blower sprayers are increasing in number in this area because they are much less objectionable where heavy traffic and large numbers of parked cars are encountered.

One field man devoted nearly the entire summer to this work. He found no general increase in Dutch elm disease over last year except in Newark, East Orange and in Branch Brook and Verona parks.

In the northwestern part of the State few municipalities have shade tree commissions or paid shade tree maintenance officers. It is difficult, therefore, to obtain cooperation in the compliance with Department recommendations. The survey which was conducted was therefore much less intensive than in the northeastern counties, which provided a general impression of the severity of the disease in the various larger municipalities in these counties. In the few towns where good cooperation had been obtained previously, the presence of infected trees was directed to the attention of the responsible official.

The towns scouted included Blairstown, Belvidere, Washington, Flemington, Milford, Lambertville, Stockton, Bernardsville, Morristown, Morris Plains, Newton, Sussex, Franklin, Frenchtown, Lake Mohawk, Branchville, Bound Brook, Watchung, Phillipsburg, Dover, Wharton, Manville and several smaller communities.

Generally, it appeared that there was less Dutch elm disease in this part of the State in the summer of 1952 than had occurred during recent years.

Although the disease is not generally serious in the southern counties, there have been outbreaks in the past so the principal municipalities have been surveyed to determine the status of the disease. The areas exhibiting the heaviest incidence of the disease were Delaware Township and Evesham

Township in Burlington County and the Rumson-Red Bank section of Monmouth County. Decreases were noted in Burlington City, Delanco, Beverly, Riverton, Cinnaminson Township, Moorestown and Freehold. There was no increase in Dutch elm disease in Bordentown and Bellmawr where cases occurred last year. There was a slight increase in Edgewater Park. No Dutch elm disease was found in Palmyra, Mount Laurel, Haddonfield, Collingswood, Audubon, Haddon Heights, Camden, Brooklawn, Deal, Long Branch, Asbury Park, Hammonton, Egg Harbor, Toms River, Cape May, Woodbine and Woodbury.

It appears therefore, that the disease was less important this year than usual except in some of the larger municipalities in the northeastern part of the State.

LABORATORY ACTIVITIES

Studies Concerning a Virus Disease of the Pine Sawfly, Neodiprion sertifer

The Annual Report for 1950-51 included the description of an experiment with a virus disease of *Neodiprion sertifer*. The virus organism was originally obtained from Canada and the experiment was conducted jointly by the New Jersey Department of Agriculture and the U. S. Department of Agriculture's Forest Insect Investigations Division in New Haven, Conn.

The report for 1951-52 described an additional experiment involving the application of a suspension of the organism from an airplane to an 18-acre block of red and Scotch pine heavily infested by the sawfly and located near Delaware (Warren County).

The results of both these experiments were so encouraging that an attempt was made this year to establish the disease at points distributed over the northern half of the State where nearly all the susceptible pines are planted.

Plots Sprayed by Knapsack Sprayer at Stephens State Park, Hackettstown, in Spring 1951

An effort was made to recover the virus organism from these sprayed plots and from adjacent unsprayed pines in order to establish its ability to recur from year to year once it is introduced into an area. Fifty egg clusters were tagged before they had hatched. These were to be examined periodically to determine what proportion of the eggs hatched and what happened to the resulting larvae.

A sharp reduction has been observed in the sawfly population in all the pines on this property which coincided with the introduction of the virus organism. In 1950 the trees were almost completely defoliated and in 1951 individual trees with 30 to 40 clusters of eggs were common. This spring, however, it was quite a task to find 50 egg clusters over the whole of the treated area (about five acres) or over all the original control area (about 10 acres). Of the eggs observed, many failed to hatch, which may indicate that the eggs were laid by virus-infected female adults.

Of the larvae which resulted from the hatch, few were found with virus symptoms. The recovery of such material this spring, however, was difficult even in areas where large numbers of infected larvae were present because of the frequent occurrence of heavy showers and strong winds. When these larvae are infected but not quite dead they lose their ability to cling to foliage and are easily dislodged. It seems likely, therefore, that a large percentage would be knocked off the trees before they would be collected. Because the egg clusters were so scarce (a tree with more than one cluster was a rarity) it did not seem worthwhile to place cloth trays under trees as was done last year.

Plot Sprayed by Airplane at Baylor Farm, Delaware, in Spring 1952

This plot was also searched for egg clusters prior to their hatching and 50 clusters were tagged for observation. They were so scarce that only 34 could be found in the 18 acres until after hatching had occurred and early damage had made the colonies easier to find.

More typical virus infected larvae were found at this location than at Hackettstown but the same weather complications made recovery difficult. Several complete colonies having the typical appearance of virus infection were found in a section where overhanging deciduous trees would have minimized the dislodging effects of the wind and rain.

Five New Plots Established This Year

Because the areas previously treated have shown rather striking decreases in sawfly population, it was decided that the disease should be established in various parts of New Jersey so that whatever beneficial effects there are would more quickly occur all over the northern half of the State. Accordingly, five areas were sprayed by plane: Dean Mathey, Princeton (Mercer County), John Hardin, Jr., Chester (Morris County), Andrew MacLauren, Little York (Hunterdon County), Dairy Research Farm, Beemer-

ville (Sussex County) and Newark Watershed, Newfoundland (Passaic County). By the end of May typical diseased larvae had been found in all five of these 10-acre areas.

Parasites of the European Corn Borer

During the fall of 1952, European corn borers were collected from corn fields distributed over the State to determine the distribution and importance of several parasites previously released in New Jersey. Following a sampling plan devised in 1947 and employed each year since, samples of 50 live borers was collected from each of 92 areas of 100 square miles. The borers were then sent to the European Corn Borer Laboratory of the U. S. Department of Agriculture in Moorestown where they were reared and the resulting parasites were identified.

COMPARATIVE RESULTS EUROPEAN CORN BORER PARASITE SURVEY
1947 to 1952

	1947	1948	1949	1950	1951	1952
<i>Lydella grisescens</i>						
Number of areas from which recovered	82	88	75	90	86	89
Per cent of total borers infested	14.8	26.4	15.4	19.8	18.5	17.5
<i>Macrocentrus gifuensis</i>						
Number of areas from which recovered	23	48	24	24	38	48
Per cent of total borers infested	2.3	6.1	1.8	2.8	3.7	5.6
<i>Horogenes punctorius</i>						
Number of areas from which recovered	12	21	14	14	19	18
Per cent of total borers infested	0.5	1.4	0.8	1.1	1.3	0.6

The results of this survey are equal to those of the best year previously recorded. The fly, *Lydella grisescens*, is generally distributed over the State and was especially important this year in the southeastern counties (Salem, Cumberland and Gloucester). In one block centered near Halltown, Salem County, 54 per cent of the borers collected were parasitized by this fly. Adjacent blocks showed rates of 52 per cent, 38 per cent, 40 per cent and 31 per cent.

The incidence of *Macrocentrus gifuensis* was greater than at any time since 1948. It was found in more than half the blocks and rates above 40 per cent were found in blocks in Sussex, Morris and Bergen counties.

Horogenes punctorius was found in 18 blocks from Morris to Ocean County. The highest rate of parasitism was 7.7 per cent in a block in Mercer County.

The total effect of these three parasites is indicated by the fact that 1,067 of the 4,450 borers reared were infected by one of the three parasites for a total rate of 24 per cent.

Airplane Spraying for Forest Pest Control

Airplane application of DDT was employed again this year as a means of controlling the pine sawfly *Neodiprion sertifer* on red and Scotch pine and the spring and fall cankerworms on a variety of deciduous trees in residential and recreational areas. One recreational area was also sprayed for the control of the elm leaf beetle.

In all cases the material used was an oil solution of DDT containing one pound DDT per gallon, applied at the rate of one gallon per acre. The material was applied from an N-3-N type biplane by personnel of Lehava Air Services of Philadelphia.

In all cases the results were satisfactory. Each plot was examined after spraying and the infestation was found to be controlled. Some difficulty was experienced because of the wet, windy conditions which prevailed during the spraying season. It was therefore necessary to respray a few areas, but control was obtained in all areas involved.

For the control of the pine sawfly, *Neodiprion sertifer* a total of 1,367 acres was sprayed by plane. They were located on 26 properties in eight counties as listed below.

Owner	County	Acreage
Armstrong, Robert V.	Sussex	15
Blewett, William E.	Sussex	30
Bliss, Mrs. Walter	Somerset	6
Bradley, Charles B.	Morris	37
Commonwealth Water Company	Union	30
Cuse, Robert	Somerset	47
Eagle's Nest Farm	Warren	85
Gamble, M. G.	Sussex	25
Harman, Dr. J. R.	Mercer	18
Jenny Jump State Forest	Warren	60
Kuhn, Otto E.	Sussex	10
Kimball, R. G.	Warren	30
Lawrenceville School	Mercer	20
Lechner, Robert	Hunterdon	24
Levy, Dr. Harry	Hunterdon	10
Marcak, Charles	Warren	15
Newark Watershed	Passaic	380
North Jersey District Water Supply Commission	Passaic	415
O'Brien, D. H.	Warren	12
Plainfield Boy Scout Camp	Hunterdon	30
Riehle, Fred	Hunterdon	10
Rogers, John R.	Morris	15
Schley, Reeve, Jr.	Hunterdon	10
Serles, Frank	Somerset	18
Shellenberger, Rolfe	Warren	15
Total		1,367

Using the same material and sprayer as used in the sawfly spraying, four areas were sprayed this year for cankerworm control.

The largest area (175 acres) was a residential area north of Bound Brook, a cooperative undertaking in which each property owner paid his share of the total cost. Three areas in State parks were also sprayed. These were picnic areas where the insects and their droppings constitute a serious nuisance to picnickers.

Property	County	Acreage
Bound Brook residential area (United Neighbors)	Somerset	175
Hacklebarney State Park	Morris	31
Ringwood Manor State Park	Passaic	40
Washington Crossing State Park	Mercer	30
	Total	276

The results were quite good. The spraying was delayed this year to allow the leaves to unfold. Then wet weather prevented spraying for several days during which the leaves continued to grow and by the time the spray was applied (May 15) the leaves were practically full grown. Where there were high trees the heavy canopy screened out the insecticide so completely that some feeding continued on lower branches in a few places. It becomes more evident each year that timing is extremely important and must be precise in this program.

Adult Japanese Beetle Damage Survey

A survey of the damage to foliage of host plants caused by feeding of adult Japanese beetles was conducted during the period August 13 to September 4. The methods of observation and scouting were similar to those employed in comparable surveys conducted each summer since 1940. Observations were made at 319 selected spots throughout the State, the same used each year. Most of the observing is done from a moving car, but in areas where the damage is less severe, closer examination is often necessary.

In the State as a whole the damage was approximately equal to that of the past several years. Localities exhibiting severe damage are widely scattered and of relatively small area.

The heaviest general infestation this year was in the Delaware River Valley from Columbia to Port Jervis, while Brookdale Park, Essex County and Rumson Country Club, Monmouth County, were also heavily infested.

In nearly all sections of the State this pest is now one which is generally present but economically unimportant.

JAPANESE BEETLE DAMAGE IN NEW JERSEY

	Abundance Index
1940	3.8
1941	3.6
1942	4.2
1943	4.2
1944	4.2
1945	3.6
1946	3.8
1947	3.9
1948	4.0
1949	3.9
1950	4.1
1951	4.1
1952	4.0

Observations Concerning Cankerworm Abundance

During the spring observations were made periodically at 49 selected spots to determine the severity of the defoliation caused by the feeding of the spring and fall cankerworms.

At the conclusion of the feeding season two estimates were used as indices of the damage: (1) the percentage of the leaves having one or more holes due to cankerworm feeding; and (2) the percentage of the total leaf surface of the tree removed by cankerworm feeding. Because elms are available in nearly all parts of New Jersey and because they are one of the favored host trees, they were used for this final scoring at all the stations so that the results would be comparable from station to station. Using this system, it will also be possible to compare this year's damage with that occurring in future years, if desired.

As a result of these observations it was concluded that (1) in the State as a whole, the defoliation caused by cankerworm feeding in 1953 was somewhat more severe than that which occurred in 1952. (2) the five stations exhibiting the most severe defoliation were:

Town	County	Per Cent Leaves with One or More Holes	Per Cent Leaf Surface Removed
Mount Rose	Mercer	100	80
Reaville	Hunterdon	98	75
Highland Park	Middlesex	99	35
Annandale	Hunterdon	95	30
Ridgewood	Bergen	80	25

(3) the preponderance of nearly all the cankerworms found was of the fall cankerworm, *Alsophila pometaria* Harris, while relatively few of the cankerworm, *Paleacrita vernata* (Peck) were found.

Recovery of the Japanese Beetle Parasite, Neoaplectana glaseri From Plot

It was mentioned in the 37th Annual Report that the nematode parasite of the Japanese beetle produced and distributed by the Department from 1939 to 1942 had been recovered from the vicinity of a plot treated in 1940.

Beetle larvae were collected from this same area at Harker's Hollow Golf Club, Harmony (Warren County) on two occasions during 1952-53 and larvae infected by this parasite were found both times.

On October 3 approximately 200 healthy larvae were collected. During the examination of soil for these larvae 12 dead larvae were also found, laboratory examination showing six of these to contain the nematode *Neoaplectana glaseri*. On June 11 a similar examination was conducted and 12 more infected larvae were recovered.

The recovery of the parasite at this location is encouraging because it proves that this parasite has maintained itself here for 13 years and spread somewhat from the original point of introduction. The rate of parasitism is also encouragingly high, since only part of the grubs infested during the long feeding season are ever recovered during any one soil examination. Japanese beetle larvae were placed in the frame at White Horse containing soil treated with *Neoaplectana glaseri* in May 1931. Approximately 200 larvae were introduced in the fall of 1952 and 200 more in the spring of 1953. Typical nematode-infested larvae were recovered approximately two weeks after introduction. The parasites have survived in this soil for 22 years.

General Forest Pest Survey of Pine Plantations

This survey, conducted in cooperation with the USDA's Forest Insect Investigations Division was started in the summer of 1950 in an attempt to determine the pests of importance in the reforestation plantings of the north-eastern states.

In New Jersey, examinations are made at 20 locations selected as typical of the plantings and distributed throughout the northern half of the State.

The tree species examined and the pests evaluated were

Tree Species	Pest Species
Red pine, <i>Pinus resinosa</i>	European pine shoot moth, <i>Rhyacionia buoliana</i> , Schiff. Pine sawfly, <i>Neodiprion sertifer</i> Same as red pine.
Scotch pine, <i>Pinus sylvestris</i>	White pine weevil, <i>Pissodes strobi</i>
Norway spruce, <i>Picea abies</i>	Eastern spruce gall aphid, <i>Chermes abietis</i>

An evaluation of the severity of each of the pests this year follows:

The Pine Shoot Moth was generally more serious on red pine than on Scotch pine and except for a few locations in Hunterdon and Warren counties damage was not severe this year.

The Pine Sawfly has generally been controlled by airplane application of DDT but a few plantings which have not been sprayed recently suffered heavy damage.

White Pine Weevil damage this year was lighter than in the past two years. There seems to be little preference for white pine or Norway spruce when both are available.

The Pine Twig Borer which was generally distributed last year was difficult to find this year.

Spruce Gall Aphid is found almost everywhere Norway spruce is growing. The pest was not serious in most plantings this year but a few suffered infestations in which a high percentage of all the twigs bore galls.

Study Plots in Red Pine and White Pine

In order to obtain more detailed information concerning two of the most important pests attacking reforestation trees, a series of plots were established in 1951. Here detailed counts would be made to determine the distribution and importance of the European pine shoot moth, *Rhyacionia buoliana*, Schiff, a serious pest of red and Scotch pine, and the white pine weevil, *Pissodes strobi*, an equally serious pest of white pine and Norway spruce.

Observations in European Pine Shoot Moth Plots

Counts were made in four of the five plots established last year for the study of the European pine shoot moth. In these counts, 50 buds are examined on every one of the 25 marked trees in each plot. Infested and uninfested buds are counted. The percentages of infestation obtained in the four plots in 1951 and 1952 are tabulated below.

Property	Total Buds Infested 1951 (per cent)	Total Buds Infested 1952 (per cent)
East Orange Watershed, Millburn (Essex County)	19.0	18.7
Newark Watershed, Newfoundland (Passaic County)	1.6	0.4
New Jersey Fish and Game Commission, Flatbrook Valley (Sussex County)	0.4	0.5
Charles Bradley, Chester (Morris County)	15.5	1.8

There has been a marked decrease in the shoot moth infestation in the pines on the property of Charles Bradley near Chester. In the other three plots counted there has been very little change.

Observations in White Pine Weevil Plots

The trees attacked by the white pine weevil in four study plots established in 1951 were counted during December. In these counts each tree in the plot is examined to determine whether it was weeviled in the present year, in previous years, both in present and previous years or never weeviled.

Since the figures for present weeviling are the most significant, these figures are tabulated for the two years.

Property	Total Trees Weeviled 1951	Total Trees Weeviled 1952
Hackettstown Reservoir, Hackettstown (Warren County)	10	5
Stokes State Forest, Branchville (Sussex County)	30	27
Ingersoll Rand No. 1	---	---
Ingersoll Rand No. 2, Phillipsburg (Warren County)	---	1

The data for these four plots reveal no significant change from 1951 to 1952.

White Pine Weevil Control Experiment

In March 1950 a demonstration experiment was established near Oxford to show the effectiveness of a method for controlling white pine weevil. The treatment involved the application of a concentrated lead arsenate-linseed oil suspension to the leaders only of the white pine and Norway spruce in an area where heavy infestation had occurred for several years.

The treatment was very successful, only seven weeviled leaders being subsequently found in the treated area while 575 were counted in a much smaller untreated area. No subsequent treatment was applied.

WHITE PINE WEEVIL CONTROL EXPERIMENT
1950 to 1953

	Trees	Infestation 1949* (per cent)	Infestation 1950 (per cent)	Infestation 1951 (per cent)	Infestation 1952 (per cent)
Treated Areas	5,000	40	0.2	1.3	3.7
Control Areas	525	40	20.0	12.8	19.8

*Before treatment.

The results of the most recent survey indicate that the infestation in the treated areas is still, three years after treatment, less than one-fifth of that in the untreated area.

Scouting for Incidental or Potential Pests

Pin Oak Sawfly—The area which was heavily infested by pin oak sawfly in 1949 was scouted this year, and the infestation was found to be quite

light and confined to a triangular area from Madison to Parsippany to Caldwell. An isolated tree was observed in Vincentown. In nearly all cases the damage occurred in only the top branches and it now appears unlikely that this is an insect which will become progressively more important.

Hemlock Looper Scouting—Several of the better stands of hemlock in northern New Jersey were examined for the presence of the hemlock looper which has caused considerable damage in New England, but there were none.

Matsucoccus Scale on Red Pine—This serious pest of red pine is now known to exist in Connecticut and New York. The closest known infestation is on the Merritt Parkway. Since traffic flows continuously from this area into New Jersey several of the larger pine plantings in the northeastern part of the State were examined, but the insect was not found.

Studies on Shade Tree Fertilization

As during the past several years, the major portion of the work in this laboratory has been devoted to a study of tree fertilization. The two plots of large elms located in Branch Brook Park, Newark, comprising the remaining total of 35 trees, of those where studies were begun in 1948 and 1950 respectively, have been continued. A selected few of these trees were given a special fertilization in the spring of 1953.

The periodic sampling of the two large elms in White Horse, as has been done since 1949, was continued throughout the growing seasons. The samples from the tree in Princeton collected for seasonal variation in foliage analysis could not be sampled during the 1953 growing season because of severe early insect damage. The nursery of 61 small elms established in White Horse in 1949 has been continued, with the application of different fertilizer formulations to this group of non-uniform stock.

The plot known as the Van Nest Plot, consisting of 200 budded stock of the "Princeton Elm" (a horticultural selection and designation) planted in the spring of 1952, was continued. Two hundred budded trees were planted in April to augment and supplement the original purpose for which the plot was established. Work of an exploratory type was undertaken on the nature and rectification of iron chlorosis in pin oaks which have been planted as ornamentals. A preliminary experiment on chemotherapeutics as a possible control of the anthracnose disease was begun on London planes.

Studies on Elm Fertilization in Branch Brook Park

In the summer of 1948, 27 mature elms in Branch Brook Park, Newark, were selected for further study and samples of leaves have been

collected at the end of each growing season since then. On occasion, some of the trees have had chemical compounds applied as soil fertilizers, depending on the interpretation of the leaf analyses. A similar selection of 20 additional trees was made in the fall of 1950. The two plots are known respectively as the "Original Selection" and the "New Selection." Annual reports of the past carry complete descriptions of these plots, and no repetition seems warranted at this time. The 1951-1952 Annual Report carried a detailed series of tables on the studies made in the original selection up to that date.

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Table 1
FOLIAR ANALYSIS OF ELM LEAVES, BRANCH BROOK PARK, ORIGINAL SELECTION.
SAMPLES COLLECTED MID-SEPTEMBER, 1952. RESULTS ON OVEN-DRY BASIS.

Tree Designation	N percent	P percent	K percent	Ca percent	Mg percent	Cu ppm	Fe ppm	Mn ppm	Zn ppm	B ppm
CL-76	2.04	0.22	1.12	2.30	0.36	19	415	110	69	90
78	1.89	0.19	1.15	1.74	0.29	18	318	45	49	116
79	1.13	0.21	1.58	1.52	0.24	10	231	137	41	104
80	1.49	0.15	1.56	1.49	0.22	16	340	50	60	115
82	1.72	0.19	1.47	1.83	0.29	9	213	23	47	79
83	1.72	0.16	1.49	2.23	0.35	9	244	55	47	93
88	1.59	0.27	1.73	1.48	0.28	13	304	243	52	73
89	1.63	0.16	1.76	2.44	0.24	21	479	38	62	102
90	1.78	0.18	1.47	1.55	0.29	12	254	176	42	94
91	1.91	0.14	2.12	1.65	0.21	11	258	70	33	106
92	1.31	0.18	1.38	2.29	0.29	17	220	76	39	97
93	1.76	0.18	1.51	1.95	0.30	18	286	72	42	108
94	1.46	0.16	1.46	1.78	0.29	12	445	243	33	108
95	1.67	0.14	1.44	2.10	0.39	19	199	445	33	99
96	1.32	0.15	1.63	1.36	0.25	14	378	57	38	83
97	1.65	0.15	1.46	1.59	0.30	11	250	43	41	108
98	1.65	0.12	1.67	1.32	0.22	11	259	81	39	78
99	2.09	0.17	0.97	2.05	0.22	16	317	180	43	82
100	1.71	0.16	1.68	1.82	0.41	17	346	40	34	82
Lowest	1.13	0.12	0.97	1.32	0.21	9	199	23	33	78
Average	1.66	0.17	1.51	1.81	0.29	14	315	115	44	96
Highest	2.09	0.27	2.12	2.44	0.41	21	479	445	69	116

Table 2
FOLIAR ANALYSIS OF ELM LEAVES, BRANCH BROOK PARK, NEW SELECTION.
SAMPLES COLLECTED MID-SEPTEMBER, 1952. RESULTS ON OVEN-DRY BASIS.

Tree Designation	N percent	P percent	K percent	Ca percent	Mg percent	Cu ppm	Fe ppm	Mn ppm	Zn ppm	B ppm
CL-111	1.67	0.13	1.48	1.53	0.24	20	556	35	43	71
113	1.46	0.15	1.45	2.42	0.35	29	560	114	50	120
114	1.83	0.20	1.42	1.90	0.30	26	431	139	50	88
115	1.45	0.16	1.43	1.49	0.21	18	272	142	26	80
116	1.47	0.12	1.42	1.86	0.26	26	564	122	39	95
117	1.75	0.15	1.47	1.56	0.33	25	352	137	51	76
119	1.87	0.13	1.39	1.38	0.29	17	255	230	34	68
121	1.04	0.12	1.36	1.76	0.29	18	286	41	56	93
122	1.20	0.11	1.80	1.97	0.26	24	433	67	58	86
124	1.62	0.16	1.39	2.70	0.43	13	405	28	49	89
125	1.05	0.26	1.33	2.08	0.29	12	298	43	50	111
126	1.05	0.13	1.47	1.93	0.33	9	242	139	55	95
127	1.22	0.12	1.47	2.74	0.30	10	252	176	40	110
128	1.49	0.12	1.17	1.90	0.27	12	284	162	58	64
129	1.39	0.17	1.86	2.24	0.36	19	485	84	49	120
130	1.15	0.13	1.47	2.52	0.33	12	296	113	41	110
Lowest	1.04	0.11	1.17	1.38	0.21	9	242	28	26	64
Average	1.42	0.15	1.46	2.00	0.30	18	370	111	42	92
Highest	1.87	0.26	1.86	2.74	0.43	29	564	230	58	120

Interpretation of Experimental Treatments at Branch Brook Park

The initial interpretation of the leaf analysis data from Branch Brook Park was that many of the trees were abnormally low in the micronutrients manganese and zinc. In May 1949 a number of the trees in the original group were treated with manganese and/or zinc compounds, as has been fully de-

scribed. Table 3 presents the pertinent data on manganese assimilation of these trees over the years.

Table 3

BRANCH BROOK PARK ELMS, ORIGINAL SELECTION, MANGANESE CONTENT OF FOLIAGE IN PARTS PER MILLION; MID-SEPTEMBER SAMPLINGS; OVEN-DRY BASIS.

Tree Designation	Treatment, May, 1949	1948	Mn Content 1949	1950	1951	1952
CL-76	Mn	55	131	178	136	110
77		22	32	48	---	---
78	Mn	31	47	54	61	45
79	Mn-Zn	62	144	153	161	137
80		35	49	44	57	50
81		94	88	115	---	---
82		17	23	28	41	23
83		27	57	60	75	55
84		26	42	43	---	---
85	Mn-Zn	28	100	173	---	---
86	Mn-Zn	55	140	135	145	---
87		33	140	230	---	---
88	Zn	79	304	212	302	243
89	Zn	98	203	251	174	38
90		35	34	42	52	176
91		45	59	84	70	70
92	Mn	30	51	72	65	76
93		49	75	107	86	72
94		222	500+	475	420	243
95		191	500+	408	425	445
96		40	47	69	83	57
97		28	51	60	87	43
98	*	32	94	90	154	81
99		110	189	275	192	180
100		17	36	58	48	40
101		280	---	---	---	---
102		54	---	---	---	---
	Median	40	75	90	86	70

*Punch-bar fed, Sept. 1, 1949; 75 lbs. 10-10-10+ 72 oz. "Mangano"+ 360 oz. "Zn 38."
 --- Trees lost, due to storm, disease, etc.

The median manganese value has been recorded for each year for in data showing so wide a dispersion, the median is a more significant figure than is the arithmetic mean. In the previous annual reports, an evaluation of the manganese treatment as applied to these trees has been attempted. Table 4 is an extension of last year's Table 12, to include the current year. The information is derived from Table 3, which shows that trees CL-76, 78, 79, 85, 86, 92 and 98 were all initially very low in manganese and were treated with a manganese compound. Control trees for this group are 77, 80, 82, 83, 84, 90, 91, 93, 96, 97 and 100. The group of initially high manganese content includes 87, 88, 89, 94, 95 and 99. Table 4 summarizes the yearly changes in these trees, when each group is treated as an entity.

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Table 4
AVERAGE YEARLY CHANGES IN LEAF MANGANESE CONTENT,
TREATED VS UNTREATED TREES, BRANCH BROOK PARK,
MID-SEPTEMBER SAMPLING

	Mn Content, ppm					Percentage Changes, Mn Content				
	1948	1949	1950	1951	1952	'48-'49	'49-'50	'50-'51	'51-'52	'48-'52
						'48	'49	'50	'51	'48
Mn-Treated	42	101	122	120	90	+140	+21	— 2	—25	+114
Controls	31	46	58	66	65	+ 48	+26	+14	— 2	+110
High-Mn Trees	130	306	308	303	229	+131	+ 1	— 2	—24	+ 76

The calculations of Table 4 show that, on the whole, the treated and untreated trees made about the same percentage gains over the five-year period studied. Although the actual manganese content of the treated groups is substantially higher than in the untreated group, this information is not convincing of any lasting change. If the treatments were beneficial, the greatest change was certainly within the first year. It seems probable that uncontrolled normal yearly fluctuations are more important than any gains resulting directly from fertilization in this experiment.

In a similar manner, the last Annual Report carried an attempt to evaluate the zinc treatments as applied to these trees. Table 5 presents the extended primary data for an evaluation of this phase of the experimental work.

Table 5
BRANCH BROOK PARK ELMS, ORIGINAL SELECTION, ZINC CONTENT
PPM, OF FOLIAGE FOR MID-SEPTEMBER SAMPLING

Tree Designation	Treatment	1948	1949	1950	1951	1952
CL-76	Mn	50	57	73	99	69
77		59	48	43	—	—
78	Mn	71	75	51	35	49
79	Mn+Zn	33	46	43	52	41
80		39	45	51	82	60
81		85	69	44	—	—
82		46	46	36	74	47
83		34	45	22	52	47
84		32	47	20	—	—
85	Mn+Zn	17	45	41	—	—
86	Mn+Zn	20	49	18	66	—
87		15	59	23	—	—
88	Zn	33	70	16	65	52
89	Zn	26	67	45	79	62
90		34	50	51	72	42
91		37	49	44	47	33
92	Mn	92	60	39	41	39
93		22	45	48	95	42
94		56	38	36	52	33
95		99	46	44	43	33
96		128	43	44	51	38
97		10	52	45	64	41
98*	10-10-10 Mn+Zn	10	48	45	67	39
99		13	54	42	71	43
100		51	40	45	56	34
101		96	—	—	—	—
102		29	—	—	—	—

*See footnote, Table 3.

Table 6 is derived as was Table 4, using the data of Table 5. For these purposes, the trees designated as CL-79, 85, 86, 88, 89 and 98 are the initially low-zinc trees treated with the zinc compound, while the control trees for this group are 80, 83, 84, 87, 90 and 93. The controls are selected on a basis of location as well as initial similarity in analyses. In Table 6, each group is treated as an entity.

Table 6
AVERAGE CHANGES IN ZINC CONTENT, TREATED VS UNTREATED TREES,
BRANCH BROOK PARK

	Zinc Content, PPM					Percentage Change				
	1943	1949	1950	1951	1952	'48-'49 '43 Base	'49-'50 '49 Base	'50-'51 '50 Base	'51-'52 '51 Base	'48-'52 '48 Base
Zn-Treated	23	54	35	66	43	+135	-35	+39	-27	+109
Controls	29	49	35	75	48	+69	-29	+114	-36	+66

As was concluded in the 1951-1952 report, the figures when analyzed as in Table 6 do not show any benefit resulting from the application of the zinc compound. The low zinc trees have made substantial gains over the five-year period. A brief examination of Table 5 shows that the initially high zinc trees have lost substantially. The inference seems clear that the zinc content of these elms fluctuates from year to year and tends to converge on some median value, possibly around 50 ppm.

It appears then that this work has not been definitive. A great deal of information has been gathered on the leaf composition of elms and the yearly variations. This within itself is a valuable contribution, but even broader conclusions can be drawn. Before presenting these more recent and highly significant findings made at the Van Nest Plot will be given.

Results of the First Year on the Van Nest Plot

The 200 small elms on this plot were planted in March 1952. The realization that a more uniform soil type and a homogeneous tree population are required for the purposes of these experiments in tree fertilization led to the plantings on the Van Nest Game Preserve, in Mercerville. Use of the plot is through the courtesy of the New Jersey Fish and Game Commission. The total area is approximately three acres of a reasonably uniform soil type, although the water table does vary considerably over the area. The soil is a light, sandy loam in the "A" profile, underlaid by a considerable "B"

horizon of coarse, red sand and the native fertility is low. In general, it is not a particularly desirable location for elms. The trees averaged about 1¼ inch caliper at the time of planting and were about eight feet in height. The trees were very uniform, nursery-grown budded stock of the "Princeton Elm." The planting holes were about two feet in diameter by 1½ feet in depth. The trees were spaced 15 feet apart in the plot. The fertilizing materials were thoroughly incorporated in the planting holes at the time of planting. Thus, the fertilizer materials were inescapably placed in the root-zone of the trees, contact being positive, and it was more a question of intimate contact killing the trees rather than its physical availability for absorption.

The severe spring drought of 1952 caused a decided set-back in these trees and individual samples were not collected from the trees. Sampling was by groups, the composite sample being taken uniformly from all the trees in the group. The sample is, therefore, a physical average for the group it represents. Samples were taken in mid-September of 1952.

The planting scheme is shown in tabular form in Table 7. The major interest is to positively determine whether or not an elm can assimilate added zinc and manganese and from what types of compounds.

Table 7

PLANTING SCHEME OF ORIGINAL 200 ELMS ON THE VAN NEST PLOT. PLANTED SPRING 1952.

Group	Number of Trees	Fertilization Formula (per tree)
1	20	No treatment - controls
2	10	2 lbs. 10-10-10
3	10	1 bucket leaf mold
4	10	Leaf mold + 2 lbs. 10-10-10
5	20	1 bucket hyperhumus
6	10	40 gm zinc sulfate
7	10	40 gm "Zn 38"
8	10	40 gm ZnSO ₄ + 2 lbs. 10-10-10
9	10	40 gm "Zn 38" + 2 lbs. 10-10-10
10	10	40 gm Mn SO ₄
11	10	120 gm "Mangano"
12	10	40 gm Mn SO ₄ + 2 lbs. 10-10-10
13	10	120 gm "Mangano" + 2 lbs. 10-10-10
14	10	20 gm "Esminel" + 2 lbs. 10-10-10
15	10	40 gm ZnSO ₄ + 40 gm Mn SO ₄
16	10	120 gm "Mangano" + 40 gm "Zn 38"
17	10	40 gm Zn SO ₄ + 40 gm Mn SO ₄ + 2 lbs. 10-10-10
18	10	40 gm "Mangano" + 40 gm "Zn 38" + 2 lbs. 10-10-10

Table 8
COMPOSITION OF LEAF SAMPLES, VAN NEST ELM PLOT,
SAMPLED MID-SEPTEMBER 1952 OVEN-DRY BASIS

Group	Fertilizer	Element, Unit									
		N per cent	P per cent	K per cent	Ca per cent	Mg per cent	Cu ppm	Fe ppm	Mn ppm	Zn ppm	B ppm
1	None	2.48	0.25	1.36	1.62	0.28	12	282	258	69	58
2	10-10-10	3.24	0.34	1.71	1.58	0.22	17	320	386	70	110
3	Leaf mold	2.01	0.20	1.22	1.81	0.38	13	242	454	66	84
4	Leaf mold + 10-10-10	3.40	0.34	1.66	1.53	0.25	16	283	309	69	101
5	Hyperhumus	1.41	0.20	1.29	1.98	0.35	14	250	328	69	86
6	ZnSO ₄	2.04	0.24	1.28	1.50	0.28	15	256	260	109	72
7	"Zn 38"	1.77	0.21	1.34	1.62	0.27	14	252	354	80	60
8	ZnSO ₄ + 10-10-10	2.39	0.23	1.63	1.55	0.24	14	309	297	99	109
9	"Zn 38" + 10-10-10	2.11	0.19	1.45	1.58	0.22	10	265	461	110	137
10	MnSO ₄	1.82	0.19	1.29	1.55	0.58	18	236	2,550	78	83
11	"Mangano"	0.82	0.19	1.21	1.71	0.35	10	238	741	72	88
12	MnSO ₄ + 10-10-10	1.80	0.22	1.56	1.93	0.42	20	264	2,105	73	152
13	"Mangano" + 10-10-10	1.47	0.19	1.51	1.73	0.31	14	297	982	63	141
14	"Esminel" + 10-10-10	1.54	0.21	1.57	1.92	0.41	25	281	1,080	72	112
15	ZnSO ₄ + MnSO ₄	1.69	0.19	1.31	1.62	0.35	15	304	586	116	67
16	"Mangano" + "Zn 38"	1.79	0.23	1.27	1.73	0.33	18	276	549	111	67
17	ZnSO ₄ + MnSO ₄ + 10-10-10	1.71	0.20	1.36	1.67	0.25	17	345	955	125	97
18	"Mangano" + "Zn 38" + 10-10-10	2.03	0.20	1.64	1.47	0.27	17	351	552	112	97

There are a number of interesting and significant inferences to be drawn from the data presented in Table 8. First, the two organic materials are not supplying nitrogen as freely as is the NPK fertilizer. In fact, their presence may even be inhibiting the absorption of nitrogen, since the amounts in these leaves are less than in the control group. This condition results from micro-organism activity in the decomposing organic material, the lower organisms initially utilizing a large portion of the available nitrogen. With reference to the copper content Group 14 is conspicuously high. Copper is a constituent of the proprietary trace mineral fertilizer "Esminel." The other values for copper are within the usual range encountered in elms.

Most interest centers around the analytical results for manganese and zinc, while the unpremeditated results obtained for boron are also highly significant.

The manganese content of the foliage of these various groups is especially remarkable. Groups 10 and 12, with over 2,000 parts per million of manganese in the oven-dried leaves, have the highest manganese contents so far encountered. Both groups were treated with manganese sulfate, which is at least initially soluble although the soil frequently converts the manganese into other, less soluble, manganese compounds. The presence of the 10-10-10

fertilizer in the Group 12 treatment seems to repress the quantity of manganese assimilated, as might be expected. Attention to the repression of solubility of exchangeable metals by the addition of NPK fertilizer was adequately presented in the latter part of the previous annual report. It seems worthwhile to pursue the analysis further, and Table 9 has been constructed from the data of Table 8 to clearly bring out the existing relationship.

Table 9
MANGANESE CONTENT OF FOLIAGE, VAN NEST ELM PLOT,
1952, ARRANGED ACCORDING TO FERTILIZATION APPLIED

Class	Fertilization Group	Average Mn Content ppm
1	No chemical fertilizer, Grs. 1, 3, 5	347
2	10-10-10 only, Grs. 2, 4	347
3	Zinc compounds only, Grs. 6, 7	307
4	Zinc + 10-10-10, Grs. 8, 9	379
5	Manganese from "Mangano," Grs. 11, 13, 16, 18	706
6	Manganese from sulfate sources, Grs. 10, 12, 14, 15, 17	1,475

The calculations recorded in Table 9 show that the first four classes, where no manganese was intentionally added, have substantially the same manganese content in the foliage and are in the general range considered desirable in elms. That is, the presence or absence of 10-10-10 fertilizer and the several zinc compounds had no significant influence on the assimilation of manganese from the soil. When the insoluble Mn_2O_3 , "Mangano," was applied, the foliage content of manganese was decidedly increased, from an average of 345 ppm to 706 ppm, or an increase of 105 per cent. Where the manganese was applied as the sulfate (including "Esminel," which is approximately 50 per cent manganese sulfate, although the total quantity here applied is only one-fourth the amount applied in the others groups), the manganese assimilation as shown by the foliage increased to 1,475 ppm, or over four times the assimilation from the soil, and twice as much as from "Mangano."

Turning attention to the zinc treatments, some groups received none, some received zinc as "Zn 38" (a hydrated zinc carbonate) and others as the sulfate. Table 10 has been derived from the data of Table 8, in exactly the same manner as was Table 9.

Table 10
ZINC CONTENT OF FOLIAGE, VAN NEST PLOT,
1952, ARRANGED ACCORDING TO FERTILIZATION APPLIED

Class	Fertilization Group	Average Zn Content ppm
1	No chemical fertilizer, Grs. 1, 3, 5	68
2	10-10-10 only, Grs. 2, 4	70
3	Manganese compounds only, Grs. 10, 11	75
4	Manganese + 10-10-10, Grs. 12, 13	68
5	Zinc from "Zn 38", Grs. 7, 9, 16, 18	103
6	Zinc from sulfate, Grs. 6, 8, 14, 15, 17	104
7	Zinc from sulfate, not including "Esminel"	112

The calculations of Table 10 show that added zinc is absorbed by elms. It should be recalled that none of these trees are at present in a deficient class, all being in or above the range of 50-60 ppm of zinc considered desirable. The zinc content of the treated trees is, in fact, inordinately high. If "Esminel" is omitted from class six (because the quantity of zinc so applied is only one-twentieth of that used in the other experiments) it appears that zinc was somewhat more readily absorbed from the sulfate than from the hydrated carbonate. The frequently stated objections to the use of zinc in fertilizer mixtures because of presumed phosphate inactivation is not borne out by these results. Here, all of the ingredients were intimately mixed before used.

The results obtained from the boron analyses of the leaves from the Van Nest Plot are also of interest. A brief examination of the data presented in Table 8 shows a considerable variation in boron content, the low values occurring where no 10-10-10 fertilizer was applied, and the high values occurring where 10-10-10 fertilizer was part of the treatment. The 10-10-10 fertilizer was part of the treatment. The 10-10-10 fertilizer was applied to nine groups and the average boron content in these groups was found to be 117 ppm. In the remaining nine groups where no 10-10-10 was applied, the average boron content was 74 ppm. In recent years recognition of the very widespread marginal deficiency of many New Jersey soils for boron has resulted in an inclusion of this element in standard fertilizer formulations. The 10-10-10 fertilizer the Bureau used throughout all of its experiments is such a formulation, containing 0.02 per cent added boron in the commercial mixture.

In summary, it seems adequately demonstrated that the American elm can and will assimilate the minor elements when they are applied as several types of compounds. These findings substantiate the hypotheses formulated earlier in the course of this work and presented from time to time in annual reports. Taking an over-all look it can be concluded that most of the trees studied are poorly nourished in nitrogen and potassium. On the whole, the phosphorus nutrition seems to present no problem but the larger trees seem to be generally having difficulty in the assimilation of zinc and manganese. It is probably significant that the younger trees studied do not generally show the latter to be true. The copper uptake seems to be high in many of the trees, and the zinc and manganese uptake of the trees can be increased substantially by the application of several compounds of these metals.

It becomes evident that the failure of trees to respond to fertilization springs from a failure to place adequate material in places of accessibility to the tree. The effort expended in the average fertilization endeavor is not sufficient; a better method of application should be found and used.

In the bunch-bar method of tree feeding (the most commonly used), comparatively few holes are punched in the soil and the nutrients introduced. This means that either the roots by random or chemotropic response seek out the nutrient-rich area, or that the nutrients are solubilized and dispersed from the initial point of placement. To some extent perhaps all of these occur. It also seems probable from a chemical standpoint that the minor metallic elements are rapidly immobilized in the soil as humates, carbonates, hydroxides, phosphates, etc., depending on the soil character and reaction. The plants are apparently able to absorb at least some of these materials and being selective in their absorption an extremely dilute solution of the minor elements would be sufficient to supply the small quantities of material required. Or, it is possible that a plant would absorb from some completely insoluble and immobilized material if the root-hairs are in intimate and sufficient areal contact, by an ion-exchange process. In addition, the soil does some peculiar things, as was pointed out last year in solubilizing manganese from "Mangano," even though the extracting solution alone was unable to solubilize even a chemically detectable micro-test for the element. None the less, immobilization must imply decreased opportunity for absorption because the permeated volume of soil is restricted.

The study of shade tree nutrition is in many ways more difficult than similar studies on economic crops. The final results are measured in terms of aesthetic appeal rather than pounds or bushels. Trees, being perennial, probably manifest more vagaries in response than do annual crops, because each year's growth is the culmination of a large number of past events. Further, a tree such as the American elm is undoubtedly of a more heterogeneous genetic character than are the standardized economic plants, and this is not conducive to uniformity in experimental work and simplicity in interpretation.

Studies in the White Horse Elm Nursery

Sixty-one small elms were planted on the station grounds in White Horse in April, 1949. The fertilization schedule was started immediately, using a commercial 10-10-10 fertilizer plus the various amendments. A second application of the fertilizer materials was applied in July 1950. These applications were made broadcast around the trees and the material worked into the soil with a garden hoe. In April 1952 a third application of the fertilizer materials was made, this time using the punch-bar method. At present, 52 trees are surviving, four having died as a result of vandalism and accident, while five in the unfertilized check group died as a result of starvation.

Table 11

FERTILIZATION SCHEDULES FOR SMALL ELMS IN WHITE HORSE NURSERY			
Group	Initial Number Trees	Present Number Trees	Fertilizer Formulation per Tree, at Each of Three Applications
1	13	13	2 lbs. 10-10-10 (fertilizer base)
2	7	7	2 lbs. 10-10-10 + 20.4 gm "Esminel"
3	6	5	2 lbs. 10-10-10 + 40 gm "Zn 38"
4	7	6	2 lbs. 10-10-10 + 40 gm "Zn 38" + 5 gm "Mangano"
5	6	4	2 lbs. 10-10-10 + 5 gm "Mangano"
6	7	7	2 lbs. 10-10-10 + 80 gm "Zn 38" + 10 gm "Mangano"
7	15	10	No treatments*

*Eleven trees treated with 10-10-10 in August 1951 in an attempt to prevent imminent death in the majority.

These trees appeared to be uniform seedlings when planted but subsequently have shown a great deal of natural variation in growth habit. Growth records and appearance observations have been made since the initiation of the plot. The average stock at the beginning was about $\frac{1}{2}$ inch in diameter and seven feet in height. An average tree at present is about 10 feet in height and has a diameter of about $1\frac{5}{8}$ inches. In comparing the rate of growth a comparison of the square of the trunk diameter seems to be a reasonable and simple index. Measurements were made at the time of planting and at the close of each successive growing season.

Table 12

GROWTH INDEX OF ELMS IN THE WHITE HORSE NURSERY, 1949 TO 1952, INCLUSIVE						
Group	Fertilization	Initial	Squares of the Diameters			
			1st Yr.	2nd Yr.	3rd Yr.	4th Yr.
1	NPK	0.27	0.28	0.60	1.20	2.62
2	NPK + "Esminel"	0.37	0.37	0.53	1.04	2.25
3	NPK + Zn	0.33	0.35	0.53	1.30	2.75
4	NPK + Zn + Mn	0.24	0.25	0.46	1.09	2.57
5	NPK + Mn	0.27	0.30	0.41	0.89	1.47
6	NPK + (Zn+Mn) 2	0.30	0.30	0.55	1.20	2.90
7	None	0.25	0.26	0.46	0.76	1.58

It can be seen from Table 11 that the initial indices are quite uniform and may be considered uniform for all practical purposes. The second column shows that no significant growth occurred during the initial year. By the close of the period covered (fall 1952) the Group 6 trees show the best growth index, followed by 3, 1, 4, 2, 7 and 5 in that order. In general, the leaf color, density of foliage and general appearance follow the same order. Since five trees in Group 7 are either dead or dying, it can be considered the least satisfactory group.

The first fall leaf sampling of these trees was made in mid-September 1950 and has been repeated each successive fall. For the current year a composite was prepared for each group and also for the best and poorest trees in each group. This resulted in a total of 25 samples for analysis.

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Table 13

ANALYSIS OF LEAVES FROM WHITE HORSE NURSERY,
COLLECTED MID-SEPTEMBER, 1952, OVEN-DRY BASIS

Group, Sample	Element, Unit									
	N per cent	P per cent	K per cent	Ca per cent	Mg per cent	Cu ppm	Fe ppm	Mn ppm	Zn ppm	B ppm
1, Composite	1.32	0.15	1.53	1.34	0.27	9	247	380	44	66
1, Best	1.69	0.14	1.54	1.41	0.27	10	286	360	48	53
1, Poor	1.77	0.15	1.88	1.20	0.27	12	258	504	62	79
1, Poorest	1.69	0.18	1.64	1.21	0.26	11	243	469	85	65
1, Poor, Yellow	1.53	0.15	1.76	1.24	0.25	12	242	454	61	78
2, Composite	1.64	0.17	1.47	1.70	0.29	11	376	516	74	71
2, Best	1.84	0.15	1.35	1.73	0.35	11	290	348	46	72
2, Poorest	1.01	0.24	1.50	1.52	0.33	10	381	505	69	66
3, Composite	1.52	0.13	1.67	1.41	0.22	11	870	281	62	66
3, Best	1.67	0.14	1.65	1.24	0.33	7	426	349	63	59
3, Poor, Yellow	1.31	0.13	1.46	1.54	0.29	13	1,050	219	62	72
4, Composite	1.62	0.15	1.69	1.48	0.33	8	349	219	37	66
4, Best	1.99	0.18	1.52	1.33	0.27	6	321	128	27	72
4, Poorest	1.44	0.14	1.48	1.22	0.28	13	441	475	60	83
4, Spotted Leaves	1.31	0.11	1.41	1.74	0.28	11	369	194	20	102
5, Composite	1.07	0.13	1.48	1.24	0.26	13	485	490	51	60
5, Best	1.29	0.14	1.72	1.24	0.23	13	600	386	46	60
5, Poorest	1.01	0.16	1.50	1.14	0.24	9	373	380	59	56
6, Composite	1.73	0.15	1.48	1.41	0.28	8	291	194	55	70
6, Best	1.97	0.19	1.40	1.67	0.29	9	343	175	80	72
6, Poorest	1.48	0.11	1.37	1.39	0.18	9	282	248	54	72
7, Composite	1.73	0.16	1.39	1.56	0.26	7	280	208	64	64
7, Best	1.98	0.17	1.24	1.92	0.33	9	267	172	78	64
7, Poor	1.20	0.14	1.48	1.31	0.21	6	265	243	39	67

All considered, the studies made on this group of trees in White Horse have not been rewarding. Considering the data for the present year, in Table 13, some general observations may be made. The nitrogen content of the foliage appears to be somewhat higher in the best trees, but there is no discernible pattern for phosphorus or potassium. The calcium tends to be higher in the better trees, while at the same time this element seems to be somewhat low for the entire plot. Magnesium does not establish a pattern. The low copper values in comparison to the trees at, for example, Branch Brook Park, are interesting. Probably a copper value in the neighborhood of 12 ppm is desirable. The foliage iron content ranges over the usual variations for this element. Special interest in this group is in relation to the zinc and manganese content. It will be noted that all of the manganese contents are higher than is usually expected in a large group. The information is inconclusive with respect to the assimilation of manganese from "Mangano" and likewise, the zinc pattern is very inconclusive from the standpoint of this investigation.

Seasonal and Yearly Trends in Leaf Composition

As mentioned in the introductory section, three mature elms have been

studied over a period of years to obtain information on the change in leaf composition as each season progresses, as well as in successive years.

The so-called "Princeton Tree" was first sampled September 7, 1947, and was one of the trees selected from various locations throughout the State in the preliminary phase of these studies. A considerable amount of information has been collected for this tree over the years. It is approximately 16 inches DBH and is growing along a roadside north of Princeton. It has never received any fertilization or other care and is an example of an "average good" tree growing under open, natural conditions. On occasion cankerworm injury has been severe.

Table 14

LEAF COMPOSITION, PRINCETON TREE, 1952 GROWING SEASON, OVEN-DRY BASIS						
Element	Percentage, (or ppm), Composition, Sampling Dates					
	4-30	6-9	7-8	8-15	9-2	9-17
Nitrogen, %	2.92	1.82	1.84	1.79	0.98	1.14
Phosphorus, %	0.60	0.20	0.19	0.18	0.15	0.17
Potassium, %	1.51	1.15	1.49	1.49	1.38	1.43
Calcium, %	1.07	1.38	1.31	1.47	1.39	1.40
Magnesium, %	0.31	0.32	0.44	0.31	0.27	0.24
Copper, ppm	14	7	18	15	9	3
Iron, ppm	279	289	460	622	339	203
Manganese, ppm	111	109	77	220	119	103
Zinc, ppm	61	36	42	66	42	45
Boron, ppm	26	45	61	73	86	86

A series of similar analyses were made on the foliage of this tree during the growing seasons of 1948, 1949 and 1950. Only the mid-September samplings were made during 1947 to 1951.

The seasonal data for the four years available have been graphically plotted in order to show the degree of uniformity of trends in the various years and also to obtain the general averages. The average as obtained from these graphs are presented in Table 15.

Table 15

LEAF COMPOSITION, PRINCETON TREE, AVERAGE VALUES AT VARIOUS DATES FOR YEARS 1948, 1949, 1950 AND 1952									
Element, Unit	Percentage Composition, Various Sampling Dates								
	5-15	6-1	6-15	7-1	7-15	8-1	8-15	9-1	9-15
Nitrogen, %	2.08	1.80	1.55	1.50	1.50	1.50	1.50	1.31	1.30
Phosphorus, %	0.38	0.31	0.28	0.22	0.21	0.20	0.20	0.19	0.19
Potassium, %	1.41	1.26	1.16	1.11	1.08	1.06	1.06	1.06	1.02
Calcium, %	1.01	1.18	1.35	1.42	1.49	1.54	1.56	1.56	1.56
Magnesium, %	0.28	0.33	0.38	0.40	0.40	0.39	0.38	0.37	0.33
Copper, ppm	17	14	14	10	14	13	13	11	10
Iron, ppm	254	257	266	295	333	349	350	288	260
Manganese, ppm	131	130	127	112	95	102	117	95	92
Zinc, ppm	66	57	47	45	47	46	45	36	35
Boron, ppm	40	41	41	48	55	58	62	66	68

From an examination of the graphs and consideration of the data as presented in Table 15, the following general observations are made: (1) The nitrogen trend followed the same path each year, starting out relatively high early in the spring and leveling off by mid-June or a little latter. The leaf nitrogen remains quite constant until about September 1, when a slight decline begins. In the mid-section of the curves (July 15, the constant period) the extremes in nitrogen concentration were 1.25 per cent and 1.80 per cent. (2) The phosphorus content curves show the least variation of all from year to year. Phosphorus is very high early in the spring, but drops to almost the final value by mid-June. From mid-June until mid-September a slight and uniform decrease is evident. At the mid-section of the curves the extremes in concentration were a low of 0.19 per cent and a high of 0.23 per cent. (3) The potassium curves are not nearly as regular, because the 1952 data are decidedly different from that of the other three years. A severe drought, accompanied by hot, drying winds prevailed during much of June 1952 and then was followed by a greater than average rainfall throughout the remainder of the summer. Usually, a "dry" season for soil moisture occurs from mid-July to mid-August. All of the Bureau's experience indicates that elms do not assimilate potassium under dry conditions. At any event, the trend is for the potassium content of the leaves to fall from a relatively high value to a stabilized value about July 1 and from then on there is a small, gradual decrease throughout the remainder of the growing season. The extremes for potassium at the curve mid-section was a low of 0.90 per cent and a high of 1.49 per cent. (4) Whereas the NPK content of the leaves starts high in the early spring and falls to a fairly well stabilized value by July 15, the calcium content starts relatively low, climbs quite rapidly until about mid-July and then continues a more gradual increase throughout the remainder of the growing season. The mid-section extremes were a low of 1.30 per cent and a high of 1.70 per cent. The direction of trend was uniform for each of the four years. (5) The curves for the magnesium concentration were the most erratic of those for the major elements. The smoothed curve shows a moderate rise from early spring to mid-July and a symmetrical decrease to a slightly lower than initial value by the end of the season. However, each curve shows sharp peaks at various times. Differences between extreme values are apt to be large, as a minimum of 0.30 per cent and a maximum of 0.50 per cent.

Turning to the micro-nutrient elements, (6) Reliable information for copper exists for only two years. The tendency shown is for a moderately high value to drop rather evenly to mid-season and remain quite constant until the end of the season when a slight downward trend occurs. At mid-season the low is 11 ppm and the high is 13 ppm. (7) The graphs for iron are not

as uniform as the averages in Table 15 might lead one to assume. All of the curves start near each other, at approximately 250 ppm in mid-May, and the divergence is not great at mid-September. In the mid-season very wide and sharp changes occur from year to year. At mid-July the lowest value was 180 ppm, the highest 485 ppm. (8) All the manganese curves ran uniformly at the same level from mid-May to mid-June. From mid-June to mid-July a definite downward trend is uniformly manifest and from mid-July to the end of the season three of the curves maintain about the same value. The anomalies of the 1952 data already mentioned for potassium and iron are again evident in the manganese concentration, a peak of 220 ppm being evident at mid-August. With this exception the data are quite uniform. (9) The curves for leaf content of zinc are quite uniform for this tree and the averages in Table 15 are a reasonably accurate presentation of the data. It will be seen that there is a slow downward trend in the leaf content of zinc throughout the growing season. The mid-season extremes are a low of 44 ppm and a high of 52 ppm of zinc. (10) The average representation for boron in Table 15 is a true portrayal of the individual curves. There is a gradual accumulation of this element in the leaves as the season progresses, whereas the other micro-nutrients tend to diminish. In this respect the pattern for boron is similar to that for calcium. It has been known for some time that a reasonably close balance must be maintained between the calcium and the boron available to plant life if nutritional health is to be maintained.

In the spring of 1949 two mature elms growing on a lawn in White Horse were selected for study and the same type of data were secured for these. These trees are known as the "Sherry Trees." Each was approximately 14 inches DBH at the beginning of the observation period. One of the trees was fertilized heavily, using 80 pounds of the 10-10-10 fertilizer plus manganese and zinc supplements. The work was done on May 11, 1949. Since that date the fertilized tree has made a much better growth, consistently appearing better when compared to the adjacent control. The first leaf samples were taken September 12, 1949, and periodic samples have been collected since. The primary interest is to determine what effect the fertilizers had on nutrition, as reflected by leaf analysis. These data have been assembled in Tables 16 and 17, covering the four-year period, 1949 to 1952 inclusive. In each case the trees were sampled at the same time, around September 15.

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Table 16

MID-SEPTEMBER MAJOR ELEMENT LEAF COMPOSITION OF FERTILIZED
AND UNFERTILIZED "SHERRY ELMS," FROM 1949 TO 1952

Element	1949		1950		1951		1952	
	Fertilized	No	Fertilized	No	Fertilized	No	Fertilized	No
Nitrogen, %	1.51	1.21	1.95	1.50	1.44	1.41	1.34	1.75
Phosphorus, %	0.19	0.17	0.13	0.20	0.21	0.21	0.15	0.17
Potassium, %	1.18	1.03	1.34	1.37	1.58	0.75	1.59	1.46
Calcium, %	1.66	1.54	1.53	1.74	1.59	1.82	1.51	1.52
Magnesium, %	0.25	0.15	0.22	0.18	0.19	0.17	0.26	0.16

The data in Table 16 indicate that the May 1949 fertilization substantially increased the nitrogen in the fertilized tree for the first two years. In 1951 and 1952 the difference is probably not significant. No effect is shown for the phosphate applied. It appears that phosphorus is only occasionally a problem in elm fertilizations. The difference in potassium is probably significant and extends over the four-year period. The soil on which these trees are growing is moderately heavy and under these conditions potassium is much less subject to leaching losses than is nitrogen. Neither calcium nor magnesium was applied to either tree; however, the magnesium content of the unfertilized tree has been too low throughout the experimental period. The magnesium content of elm foliage should approximate 0.26 per cent.

Table 17

MID-SEPTEMBER MINOR ELEMENT LEAF COMPOSITION OF FERTILIZED
AND UNFERTILIZED "SHERRY ELMS," FROM 1949 TO 1952

Element	1949		1950		1951		1952	
	Fertilized	No	Fertilized	No	Fertilized	No	Fertilized	No
Copper, ppm			11	10	15	13	14	14
Iron, ppm	573	461	272	228	700	571	343	220
Manganese, ppm	234	235	240	220	308	275	210	308
Zinc, ppm	55	53	53	43	55	50	64	54
Boron, ppm	106	64	91	78	91	64	122	91

From the data of Table 17, it would seem that the boron content of the treated tree is a bit high. This may be the continued result of the application of the boron-containing fertilizer applied. The difference in manganese content is immaterial, both trees being well above the deficiency point. While the treated tree appears a little better in zinc than the control, it is not convincing. The better appearance of the treated tree must be ascribed to the differences in nitrogen, potassium and magnesium content.

Table 18 presents the data for the present year on seasonal trends in foliage composition for the fertilized Sherry tree, while the comparable data for the unfertilized tree are given in Table 19.

Table 18

Element	LEAF COMPOSITION, FERTILIZED SHERRY ELM, 1952 GROWING SEASON					
	Composition, Sampling Dates					
	5-14	6-16	7-8	8-15	9-2	9-17
Nitrogen, per cent	3.13	2.92	2.50	1.82	1.71	1.84
Phosphorus, per cent	0.42	0.23	0.17	0.16	0.16	0.15
Potassium, per cent	1.51	1.41	1.31	1.45	1.54	1.59
Calcium, per cent	1.16	1.32	1.47	1.19	1.44	1.51
Magnesium, per cent	0.24	0.23	0.19	0.23	0.21	0.26
Copper, ppm	10	9	15	13	12	14
Iron, ppm	172	382	456	306	254	343
Manganese, ppm	170	250	34	175	256	210
Zinc, ppm	47	12	39	49	49	64
Boron, ppm	34	56	67	100	109	122

Table 19

Element	LEAF COMPOSITION, UNFERTILIZED SHERRY ELM, 1952 GROWING SEASON					
	Composition, Sampling Dates					
	5-14	6-15	7-3	8-15	9-2	9-17
Nitrogen, per cent	3.48	2.37	2.49	1.63	0.93	1.75
Phosphorus, per cent	0.50	0.21	0.17	0.17	0.16	0.17
Potassium, per cent	1.54	1.57	1.53	1.44	1.51	1.46
Calcium, per cent	1.18	1.33	1.40	1.55	1.48	1.52
Magnesium, per cent	0.24	0.21	0.21	0.17	0.20	0.15
Copper, ppm	15	13	26	11	9	14
Iron, ppm	296	342	436	263	174	220
Manganese, ppm	152	187	43	229	216	307
Zinc, ppm	45	49	43	52	48	54
Boron, ppm	38	68	93	74	101	91

The decided reduction in the manganese content occurring in the July 8 sampling is conspicuous for both trees. Considering the related data for nitrogen, potassium, copper and zinc, it is probable that these trees had entered a period of very active growth following the unusual June drought of 1952, accounting for the rather unusual fluctuations in nutrient content shown by some of the elements.

Recent Work at Present Not Evaluated

Field work has been too recent and is therefore only briefly presented. In the latter part of May, 1953, five large elms in Branch Brook Park were treated by hydraulic soil injection, using several special formulations to supply N, P, K, Mn and/or Zn. The trees were selected on a basis of their known past history in order to test certain hypotheses on fertilizer activity. An extension consisting of 200 additional budded stock of the "Princeton Elm" was designed and planted on the Van Nest Plot during April. This later planting is to explore the useful range of admixture of the minor elements, to determine if the chelated minor elements show promise and to test the responses from "organic" nutritional sources contrasted with the usual commercial fertilizers, called "chemical" by some. In June an exploratory

experiment in chemotherapy on London planes was made by soil injection of zinc compounds in a test for anthracnose control, the work being done in Moorestown.

The work completed to date on iron chlorosis in pin oaks deserves brief mention. The pin oak appears to be increasing in popularity, but because it is by nature a swampland or moist site tree, it is not, in the opinion of the Bureau, too well adapted for promiscuous planting. The usual reaction of the tree on an unfavorable site is to develop an iron chlorosis which leads to a distinctive yellowing of the foliage. This is followed by a dwarfing and distortion in growth, preventing the development of the symmetrical and pleasing structure of the tree.

This chlorosis is a peculiar problem, closely connected with the soil character and chemical composition and reaction (acidity) and also the available moisture. Efforts to rectify the condition in the past have not been too successful. For the past several years the Bureau has been experimenting with compounds of iron in organic complexes known as "chelates." Experiments are under way in Annandale and Phillipsburg but there are no definite results as yet.

Changes in Procedures for Analysis

Minor modifications in methods of analysis are frequently made as experience indicates desirable for any particular problem. A new colorimetric procedure for potassium in plant tissue was tried during the year, involving the use of dipycrylamine as the color reagent instead of the cobaltinitrite. The results look very promising.

Considerable progress has been made in an adaptation of an instrument known as the "Spectranal" to the quantitative analysis of plant materials. The instrument is fundamentally a qualitative apparatus, but by making use of controlled dilution and addition to the properly prepared sample, it is possible to visually use line extinction or matching methods and thus derive quantitative information. Despite the simplicity of the fundamental operations, the precision that can be attained is remarkable. By proper methods, zinc determinations in plant tissue can be made with sufficient precision to meet routine needs. A further development seems decidedly worthwhile and will be made as time permits. One advantage in using this instrument is that it is not necessary to maintain an elaborate and often painstakingly purified and prepared array of reagents, many of which rapidly deteriorate past the point of usefulness. A few simple basic reagents, stable in character, and a set of reference standards of simple formulation plus a minimum of apparatus and manipulation are all that is required for an experienced operator.

SEED CERTIFICATION

LATE CROP WHITE POTATO SEED CERTIFICATION

The seed white potato acreage for New Jersey again decreased during 1952. A total of 131 acres was inspected as compared with 154 acres in 1951. Acreage was distributed over the principal late crop seed potato counties in the same percentage as in the previous year. In general, the seed growers are producing primarily for their own seed use, and they apply for inspection to insure themselves that their seed is free of disease. Certification also permits them to sell their surplus at certified prices.

The growing conditions for the potato seed in 1952 were very unfavorable. Dry weather throughout the State reduced the crop considerably and on some farms where irrigation was not available, the seed was a total loss. One 17½-acre field of Katahdins was rejected when the appearance of the field was so poor an accurate disease reading could not be made.

Arrangements were made with the New York Certified Seed Growers' Cooperative Incorporated, Ithaca, to have New Jersey seed producers send samples to Florida for winter testing. Eight growers took advantage of the test and the results were favorable. The winter testing program will continue, and it is hoped that in the future more growers will take advantage of this testing plan.

Insects were controlled very well in seed fields with regular applications of DDT and parathion. Applications of nitrogen in the spray mixture showed promise of increasing yields where nitrogen was a deficient element. By applying a soluble nitrogen in the spray mixture an even distribution can be achieved with no additional cost of application.

The demand for New Jersey seed potatoes remains excellent, although very little market is available at prices slightly above northern grown seed. With the yields experienced in New Jersey's late crop seed potatoes it is difficult to produce and compete in price with the northern grown seed.

INSPECTION AND CERTIFICATION WORK OF NEW JERSEY
LATE CROP WHITE POTATO SEED IN 1952

SEED SOURCE		
	100-lb. Bags	Per Cent
Maine	1,510	76
New Jersey	363	17
New York	16	1
Prince Edward Isle	16	1
Wisconsin	64	3
Vermont	43	2
Totals	2,117	100

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PRODUCTION OF CERTIFIED WHITE POTATO SEED OF NEW JERSEY

Variety	1951		1952	
	Passed	Production (bushels)	Passed	Production (bushels)
Cobbler	15.00	1,550	7.5	975
Katahdin	85.40	17,212	51.5	8,961
Chippewa	22.10	1,246	14.5	2,582
Sequoia	1.00	130	----	----
Red Skin	----	----	.5	75
Red Bliss Triumph	----	----	5.0	950
Netta Gem	1.00	125	----	----
Essex	2.00	516	----	----
Kennebec	8.50	2,713	11.5	1,840
Totals	135.00	26,592	90.5	15,483

ACREAGE FAILING AND PASSING CERTIFICATION

Rejected or withdrawn at first inspection	17.5	13
Rejected or withdrawn at second inspection	23.0	17
Rejected at third inspection	----	----
Rejected or withdrawn three inspections	40.5	30
Passing three inspections (certified)	90.5	70

VARIETAL DISTRIBUTION OF REJECTIONS AND WITHDRAWALS

Variety	Acres Entered	Acres Rejected and Withdrawn by Inspections		Acres Certified
		(First)	(Second)	
Katahdin	78.5	5.0	22.0	51.5
Kennebec	17.5	5.0	1.0	11.5
Red Skin	.5	----	----	.5
Chippewa	14.5	----	..	14.5
Idaho	1.5	1.5	.	----
Cobbler	7.5	----	..	7.5
Red Bliss Triumph	10.0	5.0	...	5.0
Ontario	1.0	1.0	----	----
Totals	131.0	17.5	23.0	90.5

STATE DEPARTMENT OF AGRICULTURE

WHITE POTATO SEED CERTIFICATION INDUSTRY OF NEW JERSEY

	Growers	Acres Entered	Percentage Rejection	Varietal Distribution	
1947	21	316.00	16.77	Katahdin	144.67
				Cobbler	65.83
				Chippewa	50.50
				Pawnee	26.75
				Red Skin	25.00
				Green Mountain	2.00
				Pontiac	1.00
				Mohawk	.25
1948	17	184.50	10.07	Katahdin	105.00
				Chippewa	31.20
				Pawnee	21.50
				Cobbler	2.50
				Green Mountain	2.00
				Sebago	1.50
				Mohawk	1.50
				Sequoia	.50
1949	13	153.50	3.47	Katahdin	89.50
				Chippewa	27.00
				Red Skin	9.00
				Pawnee	5.50
				Sequoia	5.50
				Cobbler	4.00
1950	21	268.50	5.80	Katahdin	162.33
				Chippewa	42.67
				Cobbler	36.25
				Red Skin	9.00
				Sequoia	2.50
				Red Bliss Triumph	.25
1951	14	154.00	12.30	Katahdin	85.40
				Chippewa	22.10
				Cobbler	15.00
				Kennebec	8.50
				Essex	2.00
				Netta Gem	1.00
				Sequoia	1.00
1952	10	131.0	30.5	Katahdin	78.5
				Kennebec	17.5
				Red Skin	.5
				Chippewa	14.5
				Idaho	1.5
				Cobbler	7.5
				Red Bliss Triumph	10.0
				Ontario	1.0

GRAIN SEED CERTIFICATION

The purpose of seed certification is to maintain and make available to the public high quality seeds and propagating materials of superior crop varieties so grown and distributed as to insure genetic identity and genetic purity. To fulfill this purpose one of the most important phases in certification is the field inspection. The certifying agency at that time can best see the

type of seed that may or may not be eventually sealed, and also has its best opportunity for seed producer education. When a field inspection is being conducted every effort is made to contact the seed grower and invite him in the field. The inspector has an opportunity then to discuss the varietal differences, diseases and their control, identification of weeds and the difficulty the weeds might cause his crops. These few hours spent annually with each individual seed grower contributes much to raising the standards and ideals of the New Jersey certified seed growers.

Only during field inspection can a seed crop be accurately judged on the pureness of its variety. Each variety of grain or vegetable has marked growth habits which can be observed by a trained inspector. The field is also the only place where an inspector can determine the percentage of disease. Some very damaging diseases are seed born and cannot be detected in the seed but only in the plant's growth.

The inspector has his best opportunity in the field to calibrate percentages of weed seeds that will be a problem in the cleaning process. He can also derive percentages of mixtures of other grains that may never be observed in another inspection after the grain is harvested.

The inspector walks across each field that is entered for certification until his field counts are uniform and will continue to inspect until, in his judgment, the field is well covered. Generally, in small grain fields the inspector walks the headlands and borders and makes a double cross in the fields. If at this time there seems to be borderline counts of a disease or variety mixture the inspector will continue to inspect until a decision is made to pass or reject the field. Each inspector is trained to be unbiased and to forget personal likes or dislikes. All the inspections are considered as confidential information and are not discussed with other growers.

At the end of each farm visit the inspector leaves a written report with the seed producer indicating his field observations. This facilitates the efforts of the seed producer in improving his seed quality. It is felt that certified seed is the best adapted and purest seed available to New Jersey farmers, but with an idealistic philosophy. The certifying agency is making every effort to improve the techniques of seed inspection.

Corn

In 1952 the acreage of hybrid seed corn grown under certification increased 31 acres over the acreage planted in 1951. The N. J. No. 7 variety was increased the greatest as its popularity gained throughout the State. The

acreage of this hybrid rose from 334 in 1951 to 419 in 1952 and the total bushels of N. J. No. 7 seed increased from 8,097 bushels in 1951 to 10,467 bushels in 1952.

The detasseling of seed corn was completed with fewer rejections than ever before. With sufficient rainfall and good growing conditions the bulk of the tassels appeared in seed fields several days before the silk was receptive, allowing ample time to complete detasseling. It was possible in some cases that too much rainfall, combined with hot, sunny weather, blasted the pollen and resulted in poor pollination.

During October inspections were made on the harvesting and drying of this seed. In several lots of seed corn a small percentage of male seed was detected. When husking is done by hand instead of machinery it is possible to get an occasional male ear in the seed, but it should be easy to differentiate between the two ears. It only takes several ears of male corn to cause rejection.

The extremely dry weather during the harvest period was ideal in maintaining seed quality. Seed was harvested with the minimum amount of moisture thus reducing the artificial drying.

The rough seed that arrived in the grading plant possessed a high percentage of moldy kernels which required additional cleaning and handling to qualify the seed for certification. Much time had been spent by the inspectors in the field pointing out to the growers the necessity of careful handpicking. In order for New Jersey certified seed to maintain its reputation as a quality seed it will be necessary for each grower to completely eliminate all moldy kernels from his shelled seed before processing.

This year, for the first time, New Jersey certified seed growers chemically treated their seed with lindane, an insecticide, as well as Arasan, a fungicide. The lindane treatment, recommended by the New Jersey Agricultural Experiment Station, will give protection to the seed after planting against the seed sorn maggot and wireworm. Each spring many commercial corn fields suffer because of these insects but seed treatment with lindane will give excellent control. Although the cost of treating is relatively high (30 cents per bushel), it will mean a tremendous saving in plants and result in an increased yield. The New Jersey hybrids were the only seed corn in New Jersey this year that were completely chemically treated.

FIELD INSPECTION OF HYBRID SEED CORN			
Hybrid	Acres Entered	Acres Rejected	Acres Passed
N. J. No. 2	29	----	29
N. J. No. 4	50	----	50
N. J. No. 7	419	6	413
Foundation	7	5	2
Totals	505	11	494

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The entire crop of N. J. No. 4 was of good appearance and possessed high germination. The mill received 2,031 bushels of ungraded N. J. No. 4 and from this amount 62.2 per cent, or 1,274 bushels, was graded in flat grades. This percentage is very good for the N. J. No. 4 hybrids. Last year 51.7 per cent of the total amount was graded in flat grades.

HYBRID CORN SEALING

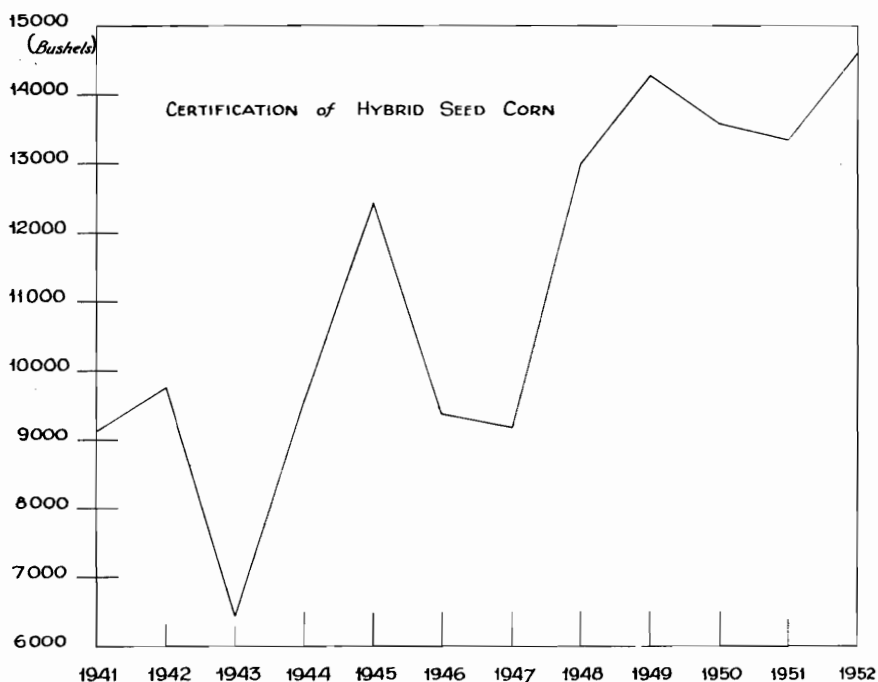
Hybrid	Carry-over Crop 1951	New Crop of 1952		Red Tag Sealed But Not Certified	Total
		Flat	Round		
N. J. No. 7	119	10,467	586	226	11,398
N. J. No. 2	20	1,174	57	....	1,251
N. J. No. 4	504	1,274	166	....	1,944
Totals	643	12,915	809	226	14,593

Because of the demand for seed this year, 226 bushels of small narrow flats of N. J. No. 7 were processed and sealed with a red tag. This grade, not generally certified, was tagged with a substandard seed tag as allowed in Chapter IX, General Seed Certification Standards, of the New Jersey Seed Certification Handbook. This lot of seed met all the requirements for certification other than appearance. The seed possesses both pure genetic factors and high germination. The red tag placed on the sealed bag stated very clearly the reasons why it did not bear the regular blue certification tag.

COMPARISON STUDY OF NEW JERSEY HYBRID SEED CORN
CLEANING AND GRADING RECORDS 1949 TO 1952

New Jersey No. 7

	1952	1951	1950	1949
Number of growers' records used	13	11	12	12
Acreage involved	333	282	303	237
Rough corn received at mill (bushels)	12,779	10,763	12,632	7,651
Bushels rough corn (ear parent) harvested per acre	38.4	38.2	41.6	28
Total bushels of flat grades certified	9,247	8,096	8,996	4,548
Average bushels of flats per acre	27.8	28.6	29.6	19.2
Average percentage of flat grades harvested per acre	72.3	74.9	71	59
Large flats (bushels)	624	598	1,180	506
(per cent)	6.8	7	13	11
Medium flats (bushels)	4,166	3,717	4,517	1,979
(per cent)	45	46	50	44
Narrow flats (bushels)	4,457	3,781	3,299	2,009
(per cent)	48.2	47	37	45



New Jersey No. 4

	1952	1951	1950	1949
Number of growers' records used	3	5	8	7
Acreage involved	50	94	88.5	112
Rough corn received at mill (bushels)	2,031	3,698	3,435	3,520
Bushels rough corn (ear parent)				
harvested per acre	40.6	39.3	38.8	32
Total bushels of flat grades certified	1,274	1,942	1,922	1,989
Average bushels of flats per acre	25.5	20.3	21.7	17.7
Average percentage of flat grades				
harvested per acre	62.7	51.7	56	55
Large flats (bushels)	1,164	1,677	1,736	1,647
(per cent)	91.3	86	90	83
Medium flats (bushels)	110	261	186	302
(per cent)	3.7	14	10	15
Narrow flats (bushels)	...	4	...	40
(per cent)2	...	2

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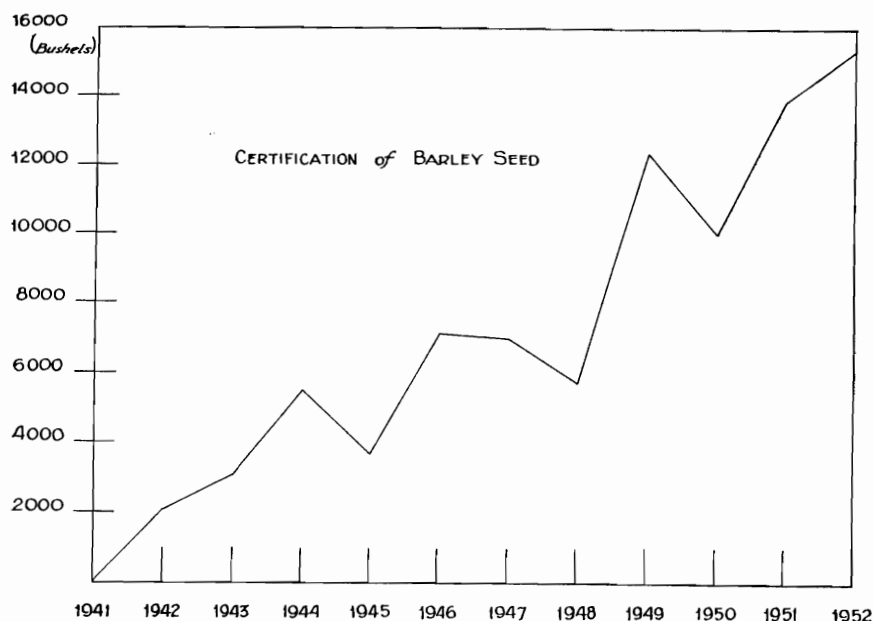
New Jersey No. 2

	1952	1951	1950	1949
Number of growers' records used	3	2	2	5
Acreage involved	29	15	16	67
Rough corn received at mill (bushels)	1,561	699	684	2,419
Bushels rough corn (ear parent)				
harvested per acre	53.8	46.6	42.8	36
Total bushels of flat grades certified	1,174	438	493	1,562
Average bushels of flats per acre	40.5	29.2	30.8	24.8
Average percentage of flat grades				
harvested per acre	75.2	63.6	72	68.8
Large flats (bushels)	800	282	292	1,124
(per cent)	68.2	64	59	67
Medium flats (bushels)	338	129	168	479
(per cent)	23.3	30	34	29
Narrow flats (bushels)	36	27	33	59
(per cent)	3	6	7	4

This year the N. J. No. 7 seed growers produced less rough corn per acre and graded out approximately one less bushel of seed per acre. The percentage of flat grades harvested per acre dropped from 74.9 to 72.3 per cent.

Barley

This year 301.2 acres were eligible to produce certified seed, an increase of 100.6 acres over last year. In 1951, 27 per cent of the acreage was lost during the field inspection, while this year only 11 per cent failed to meet



field requirements for certified seed. The principal reasons for field rejections were mixtures of other grains which included wheat and rye.

A special field inspection was made in all the barley fields entered for certification to determine the amount of loose smut infection. None was found in the registered fields, but in the certified fields, a small percentage of smut was noticed averaging six plants per acre. Excellent control was achieved by the hot-water treatment which was accomplished at the Francis C. Stokes plant in Vincentown.

Only two lots of seed were rejected during bin inspections and both were for low germination. Test weights per bushel were very high, averaging 51 pounds. Color and appearance of the seed were excellent and yields averaged 42.9 bushels of clean certified seed per acre.

All lots of seed that possessed more than 1 per cent inert matter were specially handled to reduce the dirt and cracked kernels. A 2 per cent tolerance of inert matter is allowed by certification standards, but with such excellent cleaning equipment available it seemed wise to voluntarily improve the appearance of the seed.

This year the largest barley seed crop in New Jersey's history was moved and still the supply fell short several thousand bushels of meeting the demand.

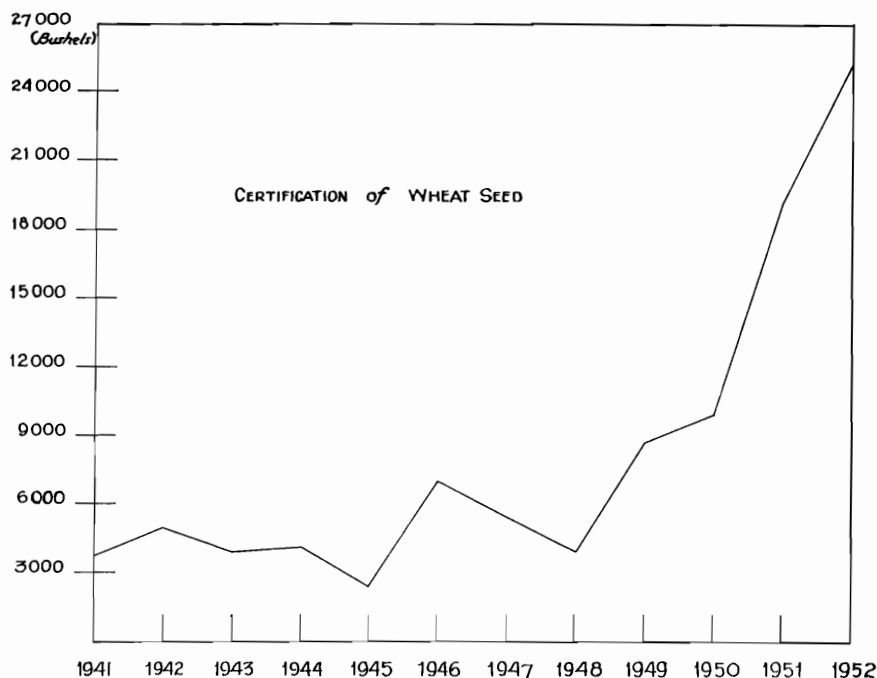
BARLEY CERTIFICATION FOR 1952

Variety	Acres Entered	Acres Rejected		Acres Passed	Bushels Sealed
		Field Inspections	Bin Inspections		
Wong (foundation)	2.0	---	---	2.0	97
Wong (registered)	52.7	7.7	---	45.0	2,232
Wong (certified)	360.7	40.5	19	301.2	12,918
Wong (carry-over)	---	---	---	---	18
Totals	415.4	48.2	19	348.2	15,265

Wheat

Forty growers entered 71 fields with a total of 1,284 acres this year. This is an increase of 81 acres over last year and is the largest wheat acreage ever to be entered for certification.

Field inspections revealed an increase of loose smut. For the past three years a notable increase has been found of this disease in the Thorne wheat variety. It was necessary to adjust seed certification standards for loose smut, or all the seed fields would have been rejected.



After conferring with Dr. C. M. Haenseler of the Plant Pathology Department and Dr. Robert Snell of the Farm Crops Department, Agricultural Experiment Station, an 0.2 per cent tolerance was agreed upon. Prior to this year the tolerance was 40 heads per acre. The Foundation Seed Committee believes that increasing the tolerance to 0.2 per cent, approximately 2,000 plants per acre, would in no appreciable way lower the quality of the certified seed. To counteract the loose smut problem in wheat the Foundation Seed Committee of the New Jersey Field Crop Improvement Cooperative Association introduced a hot-water treatment program.

About 24 per cent of the wheat acreage entered for certification was rejected in the field. The reasons for field rejections were excessive amounts of loose smut, mixtures of other grains, varietal mixtures and inseparable weeds. An increase in population of wild onion and garlic was noted this year, and one of the agricultural needs of the East at present is a control method for this secondary noxious weed.

Harvest weather over most of the State was excellent and seed was combined in good condition with a low moisture content. All lots of seed tested well below 14 per cent moisture and in some cases moisture was so low it

caused excessive cracking of the seed. Several lots of seed have as high as 5 per cent inert matter. Inert matter in these cases is completely cracked kernels. Special cleaning is necessary in these cases to give the seed the mechanical purity needed for certification.

The new cleaning equipment employed by the New Jersey Field Crop Improvement Cooperative Association in Kingston proved more valuable and efficient in cleaning wheat than it did in barley. There is no question that the packages prepared this year are superior in quality than those previously prepared.

Another change this year was the adoption of 1½-bushel bags (90 pounds) in place of the customary two-bushel bags (120 pounds). Upon surveying the dealers, it was learned that the lighter package would aid in their marketing, and also the smaller package would increase the efficiency of storage at the Kingston mill.

A total of 85½ acres was rejected during the bin inspections. Thirty-three and one-half acres were rejected for low germination and in all of these cases the grain was harvested late and possessed high proportions of cracked seed. One field of 52 acres was rejected when the producer failed to separate the seed from his certified field and that of a rejected field.

An increasing number of samples has been noted this year containing Angoumois grain moth. This situation has become alarming from a quality control standpoint. In most cases the infestations are not great enough to cause serious losses from the grain. In the packaging of quality seed, however, it is vital to control all insects so that no loss of quality occurs from the time of processing to the time the farmer plants the seed.

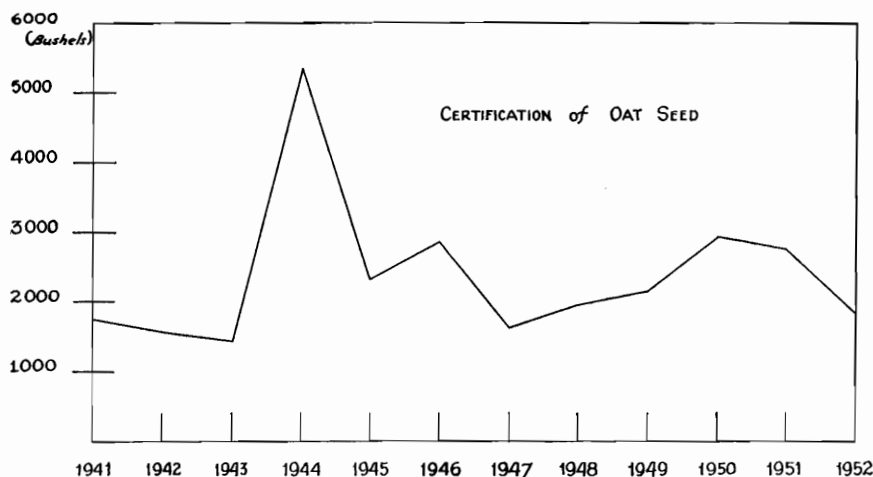
The final sealing of wheat during October brought the total bushels sealed to 25,159.5, an increase of 5,935.5 bushels over last year and is the largest crop ever certified in New Jersey. The present crop contains the highest quality ever before obtained. The formation of the Foundation Seed Committee and the establishment of registered seed fields were important steps in maintaining genetic purity of the seed.

SUMMARY OF 1952 SEED WHEAT PROGRAM

Variety	Acres Entered	Acres Rejected		Acres Passed	Bushels Sealed
		Field Inspections	Bin Inspections		
Thorne	1,284	309	85.5	889.5	24,972.5
Thorne (carry-over)	----	----	----	----	11.0
Leap's Prolific (carry-over)	----	----	----	----	176.0
Totals	1,284	309	85.5	889.5	25,159.5

Oats

Seed production of oats was poor and only a small acreage was inspected. The public acceptance of New Jersey seed oats has not improved and probably will not until a more satisfactory oat for New Jersey's hot, humid growing conditions can be developed.



Field inspections on the limited acreage of seed indicated light stands which were caused by excessive dry weather during June and early July. This undoubtedly is the reason for the poor yields. Little disease was noted and varietal purity was satisfactory. Secondary obnoxious weeds were noted in several fields which required special cleaning to prepare the seed for certification.

While collecting oat samples it could be observed that the seed from the northern counties possessed a heavy test weight, had a brighter color and had obtained higher yields. It appears that if spring seed oats production could be stimulated in the northern counties of the State a much higher quality package would result. At the present time only 3 per cent of the seed oats are supplied by New Jersey certified seed.

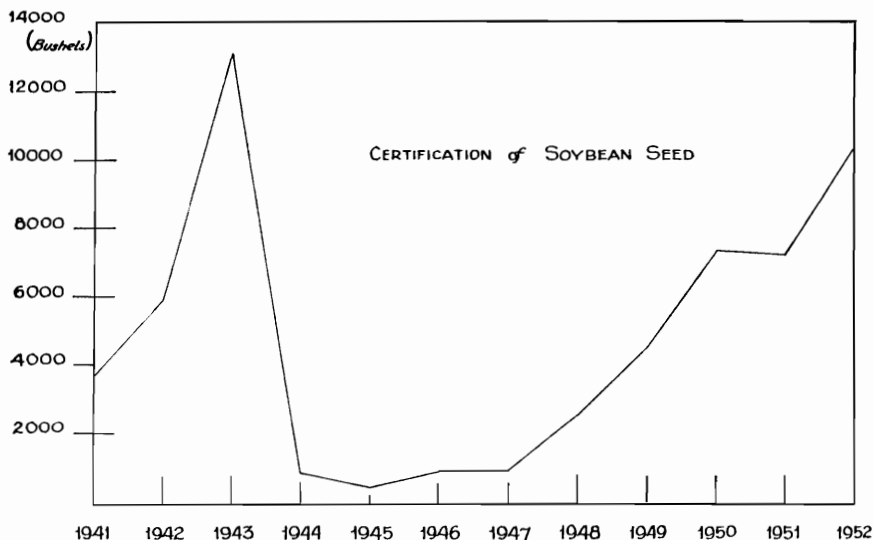
SUMMARY OF THE OATS PROGRAM

Variety	Acres Entered	Acres Rejected		Acres Passed	Bushels Sealed
		Field	Bin		
Clinton	90	---	6.5	83.5	1,836

Soybeans

The acreage entered for certification was 159 acres less than that of the previous year, but 3,632 more bushels of soybean seed were sealed. The low rate of rejection was the principal reason for the increased amount of seed and this, in part, is due to the new Foundation Seed Program. For the first time foundation seed in large quantities was available to seed producers and with the high quality of seed few rejections in the field were necessary.

Row planting has become very popular, and from the inspection standpoint it is almost essential. In all fields where row planting was used a much lower disease rating was observed. This year approximately 82 per cent of the total acreage was planted in rows.



Low germination and the presence of purple stain caused 132.5 acres to be dropped from certification. There appeared to be a greater amount of seed mold, causing a reduction in germination. By chemically treating soybean seed the mold was controllable; therefore, all certified seed was treated for this protection.

The entire certified seed production was sold and probably an additional 3,000 bushels of seed could have been marketed. Plans were made to increase the soybean seed production for this coming year.

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SUMMARY OF THE SOYBEAN PROGRAM

Variety	Acres Entered	Rejected Field	Acres Bin	Acres Certified	Bushels Certified	Bushels Registered	Carry- over 1951
Chief	67		33.0	34.0	504		
Lincoln	37	3		34.0	783	55.5	352
Hawkeye	525	4	99.5	421.5	9,093	136.5	
Totals	629	7	132.5	489.5	10,380	192	352

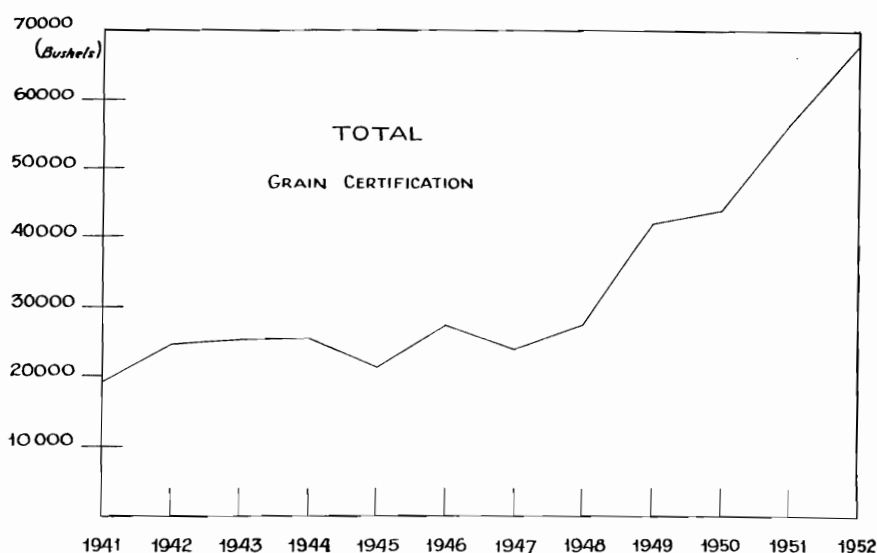
Grand Total Sealed: 10,924 bushels

Summary

Within the last four years the total number of bushels certified has nearly tripled and there is a general feeling throughout the State that certified seed is directly responsible for so many of the increased yields made on New Jersey farms. In 1948 the Department certified a total of 27,278 bushels of seed and in 1949 this figure grew to 41,935 bushels; in 1950, 43,819 bushels; in 1951, 56,404 bushels and this year increased again to 67,777 bushels.

The increase in certified seed has been chiefly in wheat and barley. In 1941, 3,706 bushels of wheat were certified. This number increased until in 1952, there were 25,159 bushels certified.

Barley has followed somewhat the same course as wheat, starting in 1941 when no winter barley was sealed until this year when the largest barley crop in the history of New Jersey agriculture was certified. The seed processed this year maintained the highest quality ever before achieved, primarily because of the additional field inspections and better cleaning equipment.



What are the limits in seed production in New Jersey? Seed quality is very important in the seed program and will always continue as a basic factor for volume. Quality, however, will have its limitation on increased volume. The sponsoring agency of grain certification, The New Jersey Field Crop Improvement Cooperative Association, has made great strides in improving dealer relationship and, undoubtedly, will increase the volume of certified seed being used.

One factor that appears to have no limitations in increasing certified seed usage is the basic research work being conducted at the New Jersey Agricultural Experiment Station. New varieties with increased yields, resistance to disease and insects and improved methods of handling the seed indicate that the demand for certified seed is practically unlimited.

SUMMARY OF GRAIN CERTIFICATION SEALINGS OF 1941 TO 1952

	(Bushels)					
	Total Sealed	Corn	Oats	Wheat	Barley	Soybeans
1952	67,777	14,593	1,836	25,159	15,265	10,924
1951	56,404	13,315	2,745	19,224	13,828	7,292
1950	43,819	13,583	2,904	9,961	9,999	7,372
1949	41,935	14,288	2,145	3,566	12,366	4,470
1948	27,278	12,993	1,941	3,996	5,784	2,564
1947	23,937	9,173	1,612	5,188	6,994	970
1946	27,217	9,371	2,853	6,915	7,098	980
1945	21,226	12,408	2,306	2,424	3,553	435
1944*	25,253	9,534	5,316	4,068	5,473	874
1943*	25,074	6,461	1,408	3,917	3,023	13,263
1942*	24,571	9,744	1,576	4,882	2,052	5,900
1941*	19,159	9,125	1,750	3,706	....	3,764

*Total sealed, represents only the principal crops.

Official Proceedings of the Thirty-Eighth Annual State Agricultural Convention

The thirty-eighth annual State Agricultural Convention was held in the Assembly Chamber of the State Capitol in Trenton on Tuesday, January 27, 1953. The meeting was called to order at 10:00 a.m. by Reuben H. Dobbs, president of the State Board of Agriculture. The invocation was offered by the Rev. Paul W. Kapp, former chaplain of the New Jersey State Grange.

The roll of delegates was called by W. H. Allen, Secretary of Agriculture, as follows:

DELEGATES OF THE STATE AGRICULTURAL CONVENTION

From County Boards of Agriculture

Name	Address	Term	County
Louis J. Sanguinetti	Minotola	2 years	Atlantic
Richard C. Lobherr,			
Egg Harbor, alternate for			
*Joseph Quarella	Landisville	1 year	Atlantic
Steffen Olsen	Westwood	1 year	Bergen
Irving K. Christensen	Wood Ridge	1 year	Bergen
Barclay H. Allen	Mount Holly	2 years	Burlington
Clement B. Lewis	Riverton	1 year	Burlington
Samuel De Cou	Merchantville	2 years	Camden
*Samuel McCulley	Berlin	1 year	Camden
John Young	Cape May Court House	2 years	Cape May
Maurice Stiles	Cape May Court House, RD. 1	1 year	Cape May
David T. Sheppard	Cedarville	2 years	Cumberland
Frank Zitto	Vineland	1 year	Cumberland
Henry Becker, Jr.	Roseland	2 years	Essex
Frank Ruzza	Livingston	1 year	Essex
J. Willard Gardiner	Mullica Hill, R. D.	2 years	Gloucester
Leslie Richards	Sewell, R. D.	1 year	Gloucester
Charles Burd	Pittstown	2 years	Hunterdon
Harold B. Everitt	Flemington, R. D. 1	1 year	Hunterdon
Ernest R. Simpkins	Yardville	2 years	Mercer
L. Bradford Golden	Skillman, R. D. 1	1 year	Mercer
Thomas Farino	Jamesburg, R. D. 1	2 years	Middlesex
George R. Parker, Jr.	Plainsboro	1 year	Middlesex
Walter W. Lott	Freehold, R. D.	2 years	Monmouth
Roscoe C. Clayton	Freehold, R. D. 3	1 year	Monmouth
James B. Stuart	Greystone Park	2 years	Morris
J. L. MacDougall	Morris Plains	1 year	Morris
Raymond Cook	Lakewood, R. D. 3	2 years	Ocean
Martin Schubkegel, Sr.	Lakewood, R. D. 3	1 year	Ocean
Michael Klein	Clifton, R. D. 1	2 years	Passaic
Edward Anthony	Clifton, R. D. 1	1 year	Passaic
Ralph P. Harris	Monroeville	2 years	Salem
Ralph G. Layton	Penns Grove, R. D.	1 year	Salem
David W. Amerman	Neshanic	2 years	Somerset
Gilbert I. Runyon	Skillman	1 year	Somerset
William Hough	Sussex, R. D. 1	2 years	Sussex
John H. Merrill, Newton,			
R.D.2, alternate for			
*Ernest Staudt	Port Jervis, R.D.1, N.Y.	1 year	Sussex
John Koscielny	Scotch Plains, R. D. 1	2 years	Union
Charles H. Brewer	Rahway, R. D. 1	1 year	Union
Frank L. Pursell	Alpha, R. D.	2 years	Warren
Walter Wyckoff	Port Murray, R. D.	1 year	Warren

From Pomona Granges

Name	Address	Term	County
Martin Decker	Hammoncton, R. D. 1	1 year	Atlantic
John Clauss	Fair Lawn	1 year	Bergen-Passaic
C. Harold Joyce	Medford	1 year	Burlington
Howard W. Garwood	Haddonfield	1 year	Camden
Allan McClain	Green Creek	1 year	Cape May
Edward Kielblock	Chatham, R. D.	1 year	Central District
Earl Sheppard	Cedarville, R.D.	2 years	Cumberland
Leslie Richards	Sewell, R. D.	1 year	Gloucester
John T. Hudnett	Flemington	1 year	Hunterdon
William S. Duncan	Jamesburg	1 year	Mercer
Harry W. Kline	New Brunswick, R. D. 3	1 year	Middlesex and Somerset
George C. Probasco	Freehold	2 years	Monmouth
Thomas J. Curley	Salem, R. D. 1	1 year	Salem
George Clark	Sussex	1 year	Sussex
Donald A. Hawk	Phillipsburg, R. D. 1	1 year	Warren

From Other Organizations

- American Cranberry Growers Association—F. Allison Scammell, Toms River, 1 year; Theodore H. Budd, Jr., Pemberton, 1 year.
- Jersey Chick Association—Nello Melini, Vineland, 1 year; Charles Cane, Rosemont, alternate for *Herman C. Demme, Sewell, 1 year.
- New Jersey Association of Nurserymen—William H. Wells, Millville, R. D. 1, 2 years; Gerard Grootendorst, Oakland, 1 year.
- New Jersey Florists Association—August Bosenberg, New Brunswick, 1 year; George Masson, Jr., Yardville, R. D. 1, 1 year.
- New Jersey State Grange—Jacob A. Blakeslee, Newton, R. D. 3, 1 year; Edwin A. Gauntt, Cranbury, alternate for *Franklin C. Nixon, Vincentown, 1 year.
- New Jersey State Horticultural Society—Lester Collins, Moorestown, 1 year; Clarence H. Steelman, Princeton, R. D. 3, 2 years.
- New Jersey State Poultry Association—Herbert O. Wegner, Newfield, 1 year; *Harold Ibbotson, Jamesburg, 1 year.
- United Milk Producers of New Jersey—Thomas L. Lawrence, Hamburg, 1 year; Benjamin Hart, Pennington, R. D. 1, 1 year.
- Blueberry Cooperative Association—*W. A. Jarvis, Pemberton, 1 year.
- Cooperative Growers Association, Inc.—Charles Heal, Burlington, alternate for *Raymond J. Anderson, Bridgeboro, 1 year.
- E. B. Voorhees Agricultural Society—Malcolm H. Adams, New Brunswick, R. D., 1 year.
- New Jersey Holstein—Friesian Cooperative Association, Inc.—Charles Kirby, Harrisonville, 1 year.
- New Jersey Agricultural Experiment Station—Clifford E. Snyder, Pittstown, 1 year.
- New Jersey Beekeepers Association—Earl W. Sutvan, Laurel Springs, 1 year.
- New Jersey College of Agriculture—William H. Martin, New Brunswick, 1 year.
- New Jersey Field Crop Improvement Cooperative Association—Harry Crine, Freehold, R. D. 1, 1 year.
- New Jersey Guernsey Breeders Association—George M. Newlin, Princeton, 1 year.
- New Jersey State Potato Association—Charles W. Holman, Dutch Neck, 1 year.
- New Jersey Aberdeen-Angus Breeders' Association—Joseph C. Thoms, Whitehouse Station, 1 year.
- Cooperative Marketing Associations in New Jersey, Inc.—William J. Lauderdale, Lambertville, 1 year.

*Absent

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APPOINTMENT OF COMMITTEES

At the delegates' dinner held on the evening preceding the Convention, the following committees were appointed by President Dobbs:

NOMINATING COMMITTEE FOR MEMBERS OF THE STATE BOARD OF AGRICULTURE

Jacob A. Blakeslee, Chairman	New Jersey State Grange
Barclay H. Allen	Burlington County Board of Agriculture
David W. Amerman	Somerset County Board of Agriculture
Charles H. Brewer	Union County Board of Agriculture
Lester Collins	New Jersey State Horticultural Society
Gerard Grootendorst	Bergen County Board of Agriculture
John T. Hudnett	Hunterdon County Pomona Grange
Michael Klein	Passaic County Board of Agriculture
Nello Melini	Jersey Chick Association
Frank L. Pursell	Warren County Board of Agriculture
Leslie Richards	Gloucester County Pomona Grange
Frank Ruzza	Essex County Board of Agriculture
Louis J. Sanguinetti	Atlantic County Board of Agriculture
F. Allison Scammell	American Cranberry Growers' Association
John Young	Cape May County Board of Agriculture

NOMINATING COMMITTEE FOR MEMBER OF FISH AND GAME COUNCIL

Clifford E. Snyder, Chairman	New Jersey Agricultural Experiment Station
Roscoe C. Clayton	Monmouth County Board of Agriculture
John Koscielny	Union County Board of Agriculture
George R. Parker, Jr.	Middlesex County Board of Agriculture
Gilbert I. Runyon	Somerset County Board of Agriculture
Martin Schubkegel, Sr.	Ocean County Board of Agriculture
Ernest R. Simpkins	Mercer County Board of Agriculture

COMMITTEE ON RESOLUTIONS

Martin Decker, Chairman	Atlantic County Pomona Grange
Ralph P. Harris	Salem County Board of Agriculture
Harold Ibbotson	New Jersey State Poultry Association
J. L. MacDougall	Morris County Board of Agriculture
George Masson, Jr.	New Jersey Florists' Association
George C. Probasco	Monmouth County Pomona Grange
David T. Sheppard	Cumberland County Board of Agriculture

At the State Agricultural Convention, the following committees were appointed:

COMMITTEE ON CREDENTIALS

Clement B. Lewis, Chairman	Burlington County Board of Agriculture
Charles W. Holman	New Jersey State Potato Association
William J. Lauderdale	Cooperative Marketing Associations in New Jersey, Inc.

COMMITTEE TO WAIT ON THE GOVERNOR

William H. Martin, Chairman	New Jersey College of Agriculture
Samuel De Cou	Camden County Board of Agriculture
Thomas L. Lawrence	United Milk Producers of New Jersey
Franklin C. Nixon	New Jersey State Grange

REPORT OF COMMITTEE ON CREDENTIALS

The credentials committee examined the certificates of delegates and reported them in order.

ELECTION OF MEMBERS OF THE STATE BOARD OF AGRICULTURE

The chairman of the nominating committee placed the names of Charles Maier of Pine Brook and Lloyd W. Yeagle of Elmer, R.D. 1 in nomination for membership on the State Board of Agriculture to succeed Reuben H. Dobbs, Glendale, and J. Edward Chamberlin, Cranbury, whose terms would expire on June 30, 1953. Upon motion made and duly seconded it was voted that the nominations be closed and Messrs. Maier and Yeagle were unanimously selected for recommendation to the Governor for a four-year period beginning July 1, 1953.

ELECTION OF A MEMBER OF THE FISH AND GAME COUNCIL

The chairman of the nominating committee for membership on the Fish and Game Council of the Department of Conservation and Economic Development placed in nomination the name of Henry W. Jeffers, Jr., of Middlesex County, for a four year term, to succeed himself as the representative from the central New Jersey counties. There being no further nominations, the nominations were closed. Mr. Jeffers was unanimously elected for recommendation to the Governor for the four-year term beginning April 1, 1953.

CITATIONS

Citations for distinguished service to agriculture were awarded to P. Wendell Beideman of Haddonfield, Willard B. Kille of Swedeboro, Ernest S. Race of Belvidere and Henry A. Schmidt of Trenton, R. D. 1.

The citations, read by Secretary of Agriculture W. H. Allen, were as follows:

CITATION OF P. WENDELL BEIDEMAN

As you plan for a well-earned retirement, your many friends and associates join in paying tribute to your long and outstanding career in agriculture.

You not only have won deserved recognition for the success of your own enterprise but, year after year, your energy and leadership have been devoted to furthering the interests of fellow farmers and the many organizations with which you have been affiliated, particularly the Grange.

Through two national crises and a difficult depression period

when those on the farm bore heavy burdens, you willingly responded to every call, often at great personal sacrifice. Your zeal in helping others has won the respect and esteem of all who know you.

Your fairness and integrity and your realistic comprehension of the needs of agriculture, always inspired confidence and enabled you to advise or administer with a degree of soundness that has strengthened the rural life of your county and state.

In the presence of these Official Delegates, we commend you and present this CITATION FOR DISTINGUISHED SERVICE TO NEW JERSEY AGRICULTURE. This occasion has special significance in view of your four years of service as a member of this Board.

CITATION OF WILLARD B. KILLE

New Jersey is proud to point to you as one of the outstanding sons of her soil. Among your neighbors and colleagues in Gloucester County you are held in highest regard because of your lifetime of service dedicated to promoting the welfare of others, particularly your church, community and numerous farm associations.

You have attained high stature as a successful grower, a producer of better seed and an able rural leader. You have fulfilled with distinction many difficult assignments, particularly those concerned with recruiting farm workers.

A loyal supporter of your County Board of Agriculture and all phases of the Extension Service program, you have inspired others to greater effort in building stronger farm organizations.

To you is credited the friendly understanding which prevails between agriculture and the new industrial interests presently locating in your area. That same relationship is now the goal of other farm groups in our State confronted with similar situations.

In recognition of your sterling character, your integrity and sincerity as well as your zeal to advance every worthy cause, the State Board of Agriculture confers upon you this CITATION FOR DISTINGUISHED SERVICE TO NEW JERSEY AGRICULTURE.

CITATION OF ERNEST S. RACE

In New Jersey the high position attained by agriculture is credited not only to favorable soil, climate and markets but more especially to the man—the farmer himself. Today we are proud to honor you as one who has upheld our tradition as the Garden State.

With foresight and vision you launched your orchard enterprise and diligently demonstrated the recommended practices of the State Agricultural Experiment Station. By lending your orchards and facilities for research, the science of modern fruit growing has been advanced. Today, you are recognized as a leader in the production of fine fruits.

Your fellow orchardists have honored you frequently with high office in their councils, particularly in the New Jersey State Horticultural Society, the New Jersey Peach Council and the New Jersey Apple Institute.

Likewise, in the field of marketing, you have cooperated in harvesting and packaging studies designed to insure the delivery of quality fruit to consumers.

In recognition of your own achievements and your sincere efforts in behalf of the peach and apple industries, we commend you and award this CITATION FOR DISTINGUISHED SERVICE TO NEW JERSEY AGRICULTURE.

CITATION OF HENRY A. SCHMIDT

Your many years of loyal service to the advancement of New Jersey agriculture are acknowledged. Seeking no personal gain, your reward has been the satisfaction of bringing benefits to others and for that you have won the highest esteem of your fellow farmers.

You have labored tirelessly and unselfishly in the interest of your church and community, never shirking a task, no matter how burdensome. In discharging your difficult duties as a member of the Selective Service Board, you were respected by all as fair and just.

Notable have been your pioneer efforts to establish and strengthen the Extension Service and to build strong cooperatives, causes to which you remain devoted.

Successful in your own extensive farm operations, you never failed to welcome those who have sought your counsel and guidance. As an ambassador of good will, you have aided in bringing about a better understanding with non-farm groups, a worthy undertaking.

Because of your modesty, patience and generous consideration of others, you remain an inspiration to your host of friends and co-workers.

The State Board of Agriculture is proud to award to you this CITATION FOR DISTINGUISHED SERVICE TO NEW JERSEY AGRICULTURE.

REPORT OF COMMITTEE ON RESOLUTIONS

The following resolutions, presented by Martin Decker and reported favorably by the committee, were adopted by the State Agricultural Convention:

WHEREAS, agriculture in New Jersey is an intensively conducted industry whose annual value of products is nearly 400 million dollars and whose gross return per acre exceeds that of any other state, all of which can be attributed to many favorable factors, not the least of which are the industrious efforts and wise management practices of our thousands of farmers who have elected agriculture as their life work and source of income; and

WHEREAS, the introduction and spread of new insects and diseases through importation of host products is a constant threat to a business which is highly susceptible to the ravages of pests if not thwarted; and

WHEREAS, by virtue of its location New Jersey is literally a gateway through which pass many imports of foreign livestock, plant products and packaging materials that can conceivably carry insects or diseases which are destructive to plant and animal life and therefore dangerous by setting the stage for new infestations in this State, therefore be it

Resolved, that this 38th Annual Agricultural Convention request our national farm organizations, the National Grange and the American Farm Bureau, to acquaint farm people through membership publications, and agencies of enforcement through personal contact, of the unusual problems thus facing our national agriculture, and urging government enforcement agencies to exert every effort to prevent these threats from becoming calamitous reality; and be it further

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Resolved, that copies of this appeal be forwarded to the Hon. Herschel D. Newsom, Master of the National Grange, and to the Hon. Allan B. Kline, President of the American Farm Bureau.

WHEREAS, poultrymen in New Jersey have suffered unnecessary financial loss because of fraudulent actions by some purchasers of poultry products from the farm, and

WHEREAS, the poultry and egg industry is New Jersey's largest agricultural industry, and

WHEREAS, the growers of the other large segments of New Jersey agriculture, namely fruits, vegetables and milk, are protected by a bonding law, therefore be it

Resolved, that this convention of agricultural producers favor the enactment of a practical State law requiring the bonding of poultry and egg buyers, and be it further

Resolved, that copies of this resolution be directed to the Chairmen of the Agricultural Committees of the Senate and Assembly.

WHEREAS, the farmers of New Jersey own the land which provides sustenance and cover for wild life, namely, fish and game, and

WHEREAS, sportsmen, other than farmers, enter upon the property owned by the farmers to engage in the sport of hunting and fishing and at times cause annoyance, property damage and injury to livestock, therefore be it

Resolved, that farmers have equal representation with the sportsmen on the New Jersey Fish and Game Council, and be it further

Resolved, that copies of this resolution be directed to the Governor and the Chairmen of the Agricultural Committees of the Senate and Assembly.

Resolved, that we delegates meeting for the 38th Annual Agricultural Convention do formally express our sincere appreciation to our Governor, the Hon. Alfred E. Driscoll, for his continued interest in our agricultural industry which has brought fame and wealth to the Garden State, and for his recognition of the importance of this gigantic business in the economic welfare of the State, and be it further

Resolved, that a copy of this formal appreciation be directed to the Hon. Alfred E. Driscoll.

Resolved, that the delegates attending this 38th Annual Convention express their deep appreciation to our honorable Secretary Willard H. Allen for his able administration of the Department of Agriculture and for his continued untiring efforts in behalf of New Jersey agriculture, and to his entire staff for their devotion in carrying out successfully the work of their respective projects.

Resolved, that the delegates attending this 38th Convention express their thanks and appreciation to Dr. William H. Martin and the staffs of the New Jersey Experiment Station, the Extension Service, and the College of Agriculture for the manifold services which they provide to the farmers of the State of New Jersey, and be it further

Resolved, that a copy of this expression be sent to Dr. William H. Martin.

WHEREAS, since our last Convention, Providence has removed from our midst W. W. Titsworth who for many years of his life was one of New Jersey's agricultural leaders and who served as a member of our State Board of Agriculture for two four-year terms from 1918 to 1926, giving willingly and unselfishly of his time, as other members have done before and since, therefore be it

Resolved, that this Convention of agricultural delegates pause here for a moment of respectful silence to the memory of him and others who are no longer with us.