STATE OF NEW JERSEY

DEPARTMENT OF AGRICULTURE

ALVA AGEE, Secretary

BULLETIN

No. 37

Eighth Annual Report

of the

New Jersey State Department of Agriculture

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Eighth Annual Report of the New Jersey State Department of Agriculture

REPORT OF THE SECRETARY

ALVA AGEE

DEPARTMENT OF AGRICULTURE

The growth of the New Jersey Department of Agriculture has been gradual since its organization in 1916. The State Board has sought to meet needs only as they became pressing in the estimation of progressive men and women throughout the state. It would not have been possible to secure the money for much work that the State Board would have liked to undertake. As it is, the budget has grown from $96,000 in the fiscal year 1916-17 to $402,060 for the coming fiscal year of 1923-24. The Department staff has increased from twenty-two persons to sixty-six. There are, in addition, about two hundred and eighty people carried a portion of the year in the gipsy moth and Japanese beetle control work and in such seasonal work as farm products inspection, etc. The demands for service of many kinds have compelled these increases in budget and in staff, and all this expense has its justification in the judgment of the State Board of Agriculture, Appropriation Committees, farmers' organizations and many city people that come to know the service that is being rendered to the state as a whole. The imperative nature of this work may be learned by some study of the reports of Bureau chiefs that are included in this bulletin.

When the Department of Agriculture was organized it was assigned the room of the old State Board of Agriculture in the State House and one additional room. It is now quartered on the first floor of the new office building, and has assigned to its use 3,200 square feet of floor space, all of which is needed.

The greater part of the Department's work comes naturally within the Bureaus of Animal Industry, Markets and Statistics and Inspection. Each Bureau is so organized that it does its work without great dependence upon the administrative head of the Department except in respect to general policies. In this way, the road to the public is shortened and service is made direct. The Bureau gains its own individuality as a public agency and at the same time fits finely into its place as a vital part of a single State Department. It is entirely possible that a single Bureau or any member of that Bureau staff should reflect with accuracy the policy and the attitude and spirit of the Department just as the Department should reflect the attitude of the State Board, that fixes policy, and the State Administration, of which it is a part. It is a matter of congratulation that there is a loyalty and community of interest running through the entire Department that makes for efficiency, which is the only gauge for measurement of the wisdom used in entrusting it with public money for the service of the entire state.

Directly connected with the administrative office is the conduct of farmers' institutes, the promotion of the Junior Breeders' Association

through loans from the special fund, the enforcement of the law respecting the licensing of milk dealers, the publication of bulletins and circulars, the conduct of the financial affairs of the Department, together with much necessary correspondence and a considerable amount of detail that appears to be inseparable from administration.

AGRICULTURAL CONDITIONS

Agriculture in our northwestern states has again afforded us an illustration of the danger of single-crop farming. This danger has presented itself time and again in the southern states where there is too great dependence upon cotton.

Conditions in New Jersey have been improving since the collapse following the war except where single-crop farming has been coming into existence in the last few years. The dairymen with some diversification in farm crops have been fairly prosperous when their situation was compared with that of the farmers of many states. Proximity to great markets has given opportunity to growers of trucking crops who have built up an immense industry. The year of 1922 was more discouraging for orchardists on account of a low yield, and absolute loss came into the potato industry. The lesson seems to be that some diversification in cropping is essential to safety. There is a factor of uncertainty in the production of a single product that calls for heavy investment in seed, fertilizers and labor that is unduly great. The producer is in partnership with the weather and cannot know whether his product will meet in market a normal annual supply or a surplus that sends prices far below cost of production. If this degree of uncertainty attended any kind of manufacturing, failure would result, and safety in farming seems to lie in a scheme of farming that does not devote all the land to a single crop.

A single notable exception is found in the poultry industry, and is due to nearness to a great market, unusual skill in production and the adoption of the best business methods in distributing the product.

ANIMAL INDUSTRY

The Bureau of Animal Industry has closed the most prosperous year of its history. Special attention is called to the data contained in Doctor McNeil's report. Tuberculin testing of cattle for the eradication of tuberculosis and the maintenance of accredited herds have gained so many friends throughout the state that it seems impracticable to secure all the money needed to meet claims for indemnity. The public wants clean raw milk in great quantity, and it will be a serious problem to meet this demand. We have finally made quite considerable headway toward the actual eradication of tuberculosis.

COOPERATIVE MARKETING

The tireless work of progressive farmers, aided by the Bureau of Markets, has made possible a considerable step toward cooperative marketing of fruits and vegetables. The work of grading that is necessary when products are pooled, and that is necessary to the establishment of brands that may become favorably known in market, is performed by the Bureau of Markets at bare cost to the producers. It is only through collective selling and the wise direction of products to markets needing them most that fair returns can be secured by producers. Repeated efforts to standardize the state's potato crop, which is normally worth twelve millions of dollars, have not had a great degree of success, although far more grading now is done than formerly.

MARKET REPORTS

Special attention is asked to that part of Chief A. L. Clark's report dealing with market quotations. The value of this service is attested by its great popularity. When producers may know before noon what all products are selling for in our larger markets, there can be intelligent decision regarding price and time of shipment. Our thanks are due to the newspapers of the state for their cooperation in the dissemination of market information.

CROP STATISTICS

Crop estimates during the growing and harvesting season always must have an element of error, but the public demands the best information that trained reporters can give it. The crop report issued each month by Chief H. B. Weiss, of the Bureau of Statistics and Inspection, has become as nearly authoritative as it can well be made with our present facilities. The Bureau cooperates with the Federal Department of Agriculture in issuing the report for New Jersey, and its value to producers and shippers is beyond question.

GIPSY MOTH AND JAPANESE BEETLE

A large part of the state's money that is placed into the hands of the Department of Agriculture is appropriated specifically for the control of the gipsy moth and the Japanese beetle. The annual appropriation for gipsy moth control is $125,000, and the Federal Government appropriates a like amount. Mr. Weiss's report shows that there has been efficiency in the expenditure of this money. The number of egg masses found has been reduced from 3,000,000 the first year to 1,182 the third year. There is certainty that the moth can be eradicated in all the large area outside of the forest lands on the Watchung Mountain. There are a few infestations on these ranges, and there will be some difficulty in making sure that the last egg mass has been destroyed. It will be far wiser to expend whatever money is necessary to discover and destroy any small areas of infestation in these mountains than to permit this area to become a breeding ground that would menace the welfare of the whole state.

The state's experience with the Japanese beetle is less encouraging. The state has cooperated with the Federal Department of Agriculture, and all the skill has been employed that was at the command of the Federal Government. It has been contributing about eight dollars to each dollar expended by the state, and every effort has been made to find poisons that would be eaten by the beetle and to secure an adequate supply of parasites. The State Department's power of quarantine is too weak, and should be strengthened by legislation. The infested area has been greatly extended. The menace is so great that the Federal Government will seek an appropriation of $210,000 for the beetle control work in the next fiscal year, and asks the State of

New Jersey to contribute $60,000. The outstanding fact is that unless some measure of inspection of products shipped out of the infested area is afforded, quarantine orders of other states may bar our producers from markets that are absolutely necessary to them.

FARMERS' INSTITUTES

It is in the plans of the State Board of Agriculture to turn over to the various County Boards of Agriculture the money appropriated for the maintenance of farmers' institutes. It has been the thought of the State Board that the control of this work should gradually drift into the hands of the County Boards, as they are more competent to direct any meetings that should be held than anyone outside of the County Boards could be.

THE JUNIOR BREEDERS' ASSOCIATION

The success of the Junior Breeders' Association, which is composed of boys and girls financed from the loan fund known as "The Frelinghuysen Fund," is reflected in the report made by the assistant manager of the fund. It may be found on page 38.

PUBLICATIONS

The bulletins and circulars issued by the Department during the past year are as follows:

BULLETINS

No.

33. Seventh Annual Report of the New Jersey State Department of Agriculture.
34. Official Proceedings of the Eighth Annual State Agricultural Convention; Address of Hon. Sydney Anderson, at the Annual Meeting of the New Jersey State Federation of County Boards of Agriculture.
35. The State Potato Association and the State Alfalfa Association, Agricultural Week, 1923.
36. A Graphic Summary of New Jersey Agriculture.

CIRCULARS

No.

53. A Manual of Bee Husbandry.
54. The Lace Bugs of New Jersey.
55. Requirements and Rules for the Inspection and Certification of New Jersey Second Crop Seed Potatoes, as Adopted by the New Jersey State Potato Association and the New Jersey State Department of Agriculture.
56. Work Against the Gipsy Moth in New Jersey.
57. The Raspberry and Blackberry Industry of New Jersey.
58. Beetles of the Genera Saperda and Oberea known to occur in New Jersey.
59. Standard Grades for Sweet Potatoes.
60. The Milk Dealers' Licensing and Bonding Law.
61. Sprays for the Control of the Japanese Beetle.
62. Standard Grades for Apples.
63. County Boards of Agriculture, Granges and State Agricultural Organizations.
64. The Occurrence of the Devastating Nematode of Europe, *Tylenchus dipsaci* Kuhn, in New Jersey.

REPORT OF THE BUREAU OF ANIMAL INDUSTRY

J. H. MCNEIL, *Chief*

HOG CHOLERA

The breeders and feeders of hogs are thoroughly alive to the fact that proper and regular vaccination of all animals is necessary in order to protect them against hog cholera and to assure that they may be raised without loss. We submit a summary of the work giving the number of animals treated by Bureau and private veterinarians, and also the number reported as having been treated in the different counties.

HOG CHOLERA INOCULATION

Summary by Months—July, 1922–June, 1923

(Treated by Bureau and Private Veterinarians)

	Bureau Veterinarians		*Private Veterinarians*	
	Double	Single	Double	Single
July	564	23	746	32
August	361	12	1,461	..
September	96	36	1,031	55
October	133	..	1,778	19
November	50	..	1,093	153
December	272	..	685	..
January	50	..	914	9
February	100	2	250	144
March	57	..	48	21
April	15	55	959	1
May	701	8	253	52
June	600	28	358	128
TOTALS	2,999	164	9,576	614
TOTAL DOUBLE			12,575	
TOTAL SINGLE			778	
GRAND TOTAL			13,353	

HOG CHOLERA INOCULATION

Comparison of Summaries 1918—1923

Treated by	1918–1919	1919–1920	1920–1921	1921–1922	1922–1923
Bureau Veterinarians					
Double	2,725	4,051	4,005	3,954	2,999
Single	1,175	1,265	529	565	164
	3,900	5,316	4,534	4,519	3,163
Private Veterinarians					
Double	3,739	13,380	10,217	7,843	9,576
Single	1,739	2,106	772	620	614
	5,478	15,486	10,989	8,463	10,190
TOTALS					
Double	6,464	17,431	14,222	11,797	12,575
Single	2,914	3,371	1,301	1,185	778
	9,378	20,802	15,523	12,982	13,353

HOG CHOLERA INOCULATION

Summary by Counties—July, 1922—June, 1923

(Treated by Bureau and Private Veterinarians)

	Bureau Veterinarians		*Private Veterinarians*	
	Double	Single	Double	Single
Atlantic	414	32	3	..
Bergen	..	..	12	..
Burlington	253	12	254	26
Camden	32	..	1,424	..
Cape May	487	..	1	4
Cumberland	103	12	238	198
Essex	163	..	2	..
Gloucester	..	..	6,180	125
Hudson	..	..	..	..
Hunterdon	198	11	282	48
Mercer	284	64	199	..
Middlesex	..	..	333	..
Monmouth	530	17	162	79
Morris	..	..	27	70
Ocean	409	16	..	..
Passaic	..	..	..	..
Salem	72	..	400	64
Somerset	54	..	..	..
Sussex	..	..	..	..
Union	..	..	36	..
Warren	..	..	23	..
TOTALS	2,999	164	9,576	614
TOTAL DOUBLE			12,575	
TOTAL SINGLE			778	
GRAND TOTAL			13,353	

PASTURE DISEASE OR FORAGE POISONING

This disease, affecting horses and mules, is confined principally to the eastern and southeastern sections of the state, comprising Ocean, Atlantic, Cape May and Cumberland counties.

The protective injection of Polyvalent Botulinus Antitoxin is being practiced and will be continued this coming fall, as the results appear to justify the expenditure of funds for this purpose. This disease usually appears in early August, and continues through September until the first severe frost.

	Atlantic County	Cape May County	Cumb'rl'd County	Ocean County	Total
August, 1922	4	38	88	94	220
Sepember, 1922		112	89	62	267
Ocober, 1922		96	25	52	173
Totals	4	246	202	208	660

STALLION REGISTRATION

The annual registration of stallions and jacks is conducted in conformity with Chapter 212, Laws of 1908, entitled, "An Act to Regulate the Public Service of Stallions in New Jersey," approved April 13, 1908. It will be noted upon making a comparison of the number registered during the past five years that there is a gradual decrease, brought about, no doubt, by the almost universal use of the automobile and tractor. We submit a list giving the breed and number registered, by counties.

STALLION REGISTRATION

Breed	1919	1920	1921	1922	1923
Percheron (Registered)	29	25	26	20	20
Clydesdale (Registered)	8	5	3	3	3
Belgian (Registered)	..	1	1	1	1
Standardbred (Registered)	14	9	4	4	4
Suffolk (Registered)	4	2	3	1	2
Thoroughbred (Registered)	7	6	5	6	4
German Coach (Registered)	2	2	6	1	1
Jacks (Registered)	4	2	4	3	2
Standardbred (Non-registered)	13	6	5	5	4
Suffolks (Non-registered)	..	..	1	1	1
German Coach (Non-registered)	2	1	1	..	..
Thoroughbred (Non-registered)	1	..	..	..	..
Jacks (Non-registered)	..	2	1	2	2
*Grade Drafts	24	18	17	16	13
Hackney	3	2	..	..	..
Shetland	3	1	..	..	..
Morgan	1	..	..	..	..
TOTALS	115	82	77	63	57

*Includes grade Percherons, Belgians and Clydesdales.

STALLION REGISTRATION BY COUNTIES

County	1919	1920	1921	1922	1923
Burlington	15	7	6	6	6
Camden	1	2	2	2	1
Cumberland	5	3	6	3	4
Gloucester	1	..	..	..	..
Hunterdon	27	19	14	12	12
Mercer	5	3	3	3	1
Middlesex	2	2	2	2	4
Monmouth	6	7	7	7	8
Morris	8	6	8	3	3
Ocean	2	..	..	..	..
Salem	10	7	7	6	5
Somerset	10	7	5	4	1
Sussex	5	3	4	6	4
Union	1	1	1	..	..
Warren	17	15	12	9	8
TOTALS	115	82	77	63	57

GLANDERS

The reports received indicate that glanders is practically under control. Isolated cases are occasionally reported, but by prompt action no serious difficulty is experienced in handling the disease.

GLANDERS—1922-1923

	Negative	Positive
July	12	
August	4	
September	30	
October	29	
November	15	
December	6	
January	7	
February	8	
March	47	
April	19	3
May	12	
June	19	1
TOTALS	208	4

In addition, 4,208 negative tests have been made on animals used in New Jersey-New York traffic.

GLANDERS—1922-1923

Comparison of Summaries—1918-1923

	Private Tests			N. Y.—N. J. Traffic	
	Negative	Positive	Suspicious	Negative	Positive
1918-1919	2,268	65	..	5,000	..
1919-1920	356	17	..	2,670	5
1920-1921	460	70	2	3,087	4
1921-1922	277	10	..	5,493	..
1922-1923	208	4	..	4,208	..

ANTHRAX

No serious outbreaks of anthrax have occurred since August, 1917. This is probably due to the practice of vaccinating all susceptible animals in the infected districts annually during the month of April, before they are turned to pasture. A summary of the work is submitted.

	Cattle	Horses	Total
1923	862	50	912
1922	985	52	1037
1921	1238	32	1270
1920	1442	26	1468
1919	1456	3	1459

TUBERCULOSIS

The plan for the control and eradication of tuberculosis, as outlined in the cooperative accredited-herd agreement and adopted by the Board of Agriculture, has been followed since 1919, and the results attained more than justified the action taken as evidenced by the increasing interest in this work of both the breeder of pure-bred animals and the dairyman.

The report of tuberculin testing of herds of cattle under the State and Federal accredited-herd plan for the entire United States during the period of July 1, 1922, to June 30, 1923, is as follows:

Number of herds tested	296,138
Number of cattle tested	3,460,849
Number of reactors	113,844
Percentage of reactors	3.3

New Jersey

Number of herds tested (Number under supervision)	674
Number of cattle under supervision	15,843
Number of cattle tested	27,473
Number of reactors	1,834
Percentage of reactors	6.67

The fund appropriated and used for the eradication of tuberculosis from dairy and breeding herds for the fiscal year 1922-1923 was $75,000. In addition, the state received $55,000 from the Federal Bureau of Animal Industry. There has been appropriated $100,000 for the purpose of indemnifying owners during the fiscal year 1923-1924.

A summary of the work follows:

ACCREDITED HERD WORK

Tested by U. S. B A. I. Vet.	Initial				Additions				Other Tests			
	Tested		Reactors		Tested		Reactors		Tested		Reactors	
	P.B.	Gr.	P.B.	Gr.	P.B.	Gr.	P.B.	Gr.	P.B.	Gr.	P.B.	Gr.
1922												
July	16	..	..	..	5	..	..	..	88	31	..	..
August	63	1	4	..	3	..	..	..	115	..	4	..
September	..	..	..	..	5	..	1	..	5	..	..	..
October	41	32	2	1	1	16	..	1	189	26	2	..
November	..	..	..	..	8	17	..	..	146	486	13	..
December	..	..	..	..	2	..	..	..	159	2	6	..
1923												
January	..	..	..	..	5	9	..	1	223	76	..	..
February	..	..	..	..	4	..	..	..	139	35	8	..
March	16	13	9	4	15	..	..	..	112	38	6	..
April	..	..	..	..	59	..	..	..	..	..	..	..
May	..	..	..	..	16	2	..	1	541	23	8	1
June	..	..	..	..	5	..	..	..	83	..	..	..
Total	136	46	15	5	128	44	1	3	1800	717	47	1
Average %	11% P.B. 10.86% gr.				.78% P.B. 6.8% gr.				2.6% P.B. .13% gr.			
	10.98%				2.3%				1.90%			

ACCREDITED HERD WORK—Continued

Tested by N. J. B. A. I.	Initial				Additions				Other Tests			
	Tested		Reactors		Tested		Reactors		Tested		Reactors	
	P.B.	Gr.	P.B.	Gr.	P.B.	Gr.	P.B.	Gr.	P.B.	Gr.	P.B.	Gr.
1922												
July	187	334	48	41	29	58	1	..	268	335	32	1
August	74	341	11	44	21	241	1	4	736	362	25	6
September	124	204	42	82	26	151	1	6	427	357	8	3
October	244	194	52	28	7	475	..	4	381	1507	1	20
November	21	143	6	15	69	417	5	2	787	822	14	15
December	242	107	41	21	117	322	1	23	922	853	15	14
1923												
January	80	197	24	91	40	117	1	1	239	445	1	7
February	108	61	22	23	53	217	..	8	453	231	2	1
March	136	281	35	68	107	337	3	9	557	762	5	9
April	205	580	36	235	18	62	..	5	363	252	6	8
May	108	409	27	145	82	32	2	..	875	1517	15	21
June	261	590	48	220	47	291	..	4	682	1611	4	29
Total	1790	3441	392	1013	616	2720	15	66	6690	9054	128	134
	21.89% P.B. 29% gr.				2% P.B. 2% gr.				1.9% P.B. 1.48% gr.			
Average %	26.86%				2%				1.66%			

Tested by N. J. Acc. Vet.	Initial				Additions				Other Tests			
	Tested		Reactors		Tested		Reactors		Tested		Reactors	
	P.B.	Gr.	P.B.	Gr.	P.B.	Gr.	P.B.	Gr.	P.B.	Gr.	P.B.	Gr.
1922												
July	..	..	..	..	..	..	..	..	..	..	..	..
August	..	..	..	..	..	..	..	..	..	..	..	..
September	..	..	..	..	..	..	..	..	..	..	..	..
October	..	..	..	..	..	..	..	..	..	..	..	..
November	..	..	..	..	..	..	..	..	..	..	..	..
December	..	..	..	..	..	..	..	..	..	..	..	..
1923												
January	..	..	..	..	..	..	..	..	..	..	..	..
February	..	..	..	..	..	..	..	..	..	..	..	..
March	..	..	..	..	..	..	..	..	..	..	..	..
April	..	..	..	..	..	..	..	..	..	..	..	..
May	2	50	..	1	2	1	..	..	16	3	..	2
June	12	169	..	9	..	7	..	1	..	..	..	..
Total	14	219	..	10	2	8	..	1	16	3	..	2
	4.56% gr.				.12% gr.				66% gr.			
Average %	4%				10%				11%			

Tested by N. J. Private Vet.	Initial				Additions				Other Tests			
	Tested		Reactors		Tested		Reactors		Tested		Reactors	
	P.B.	Gr.	P.B.	Gr.	P.B.	Gr.	P.B.	Gr.	P.B.	Gr.	P.B.	Gr.
1922												
July	..	..	..	..	..	..	..	..	..	..	..	..
August	..	..	..	..	..	..	..	..	..	..	..	..
September	..	..	..	..	..	..	..	..	..	..	..	..
October	..	..	..	..	2	..	..	..	..	..	..	..
November	..	..	..	..	2	2	..	..	..	..	..	..
December	..	..	..	..	..	..	..	..	1	..	..	..
1923												
January	..	..	..	..	4	..	..	..	5	1	..	..
February	..	..	..	..	1	2	..	..	..	..	..	..
March	..	..	..	..	1	3	..	1	..	..	..	..
April	..	..	..	..	3	1	..	..	..	..	..	..
May	..	..	..	..	1	..	..	..	..	..	..	..
June	..	..	..	..	..	..	..	..	..	..	..	..
Total	..	..	..	..	14	8	..	1	6	1	..	..
	12.50% gr.											
Average %	4.50%											

Total Number of Cattle Tested Under Accredited-Herd Plan

	Initial		Additions		Other Tests		Total	
	Tested	React'rs	Tested	React'rs	Tested	React'rs	Tested	React'rs
P. B.	1940	407	760	16	8512	175	11,212	598
Gr.	3706	1028	2780	71	9775	137	16,261	1236
	5646	1435	3540	87	18,287	312	27,473	1834
	25.41%		2.45%		1.70%		6.6%	

Cattle Slaughtered—Accredited

Reactors slaughtered	Quarantined last fiscal year	Quarantined this fiscal year	Quarantined same month as slaughtered	Reactors not slaughtered in month quarantined
1922				
July	103	—	55	68
August	46	66	51	48
September	13	45	25	106
October	2	84	26	85
November	—	121	22	48
December	4	56	35	86
1923				
January	—	69	69	57
February	1	86	20	45
March	4	26	57	91
April	3	91	182	108
May	2	174	94	129
June	—	85	173	142
Totals	178	903	809	1013

Appraisements (New Jersey)

			Valuation		Amount Paid	
			Pure-breds	Grades	Pure-breds	Grades
1922						
July	57	14	$14,325.00	$1,385.00	$4,312.26	$352.09
August	50	58	10,530.00	5,851.00	2,853.88	1,419.96
September	69	31	20,575.00	2,922.00	5,476.21	814.01
October	34	40	8,025.00	3,470.00	2,453.86	908.49
November	77	113	14,965.00	10,586.00	4,437.87	2,856.70
December	52	24	12,500.00	2,200.00	3,599.88	565.99
1923						
January	38	53	7,875.00	5,475.00	2,330.40	1,506.26
February	50	71	12,490.00	6,735.00	3,367.16	1,746.14
March	39	40	7,525.00	3,687.00	2,189.73	1,000.31
April	56	193	13,975.00	21,190.00	4,200.98	5,818.15
May	38	218	10,765.00	25,522.00	3,057.01	7,112.37
June	94	197	23,190.00	21,490.00	6,757.41	5,862.60
	654	1052	$156,740.00	$110,513.00	$45,036.65	$29,963.07
Total	1706		$267,253.00		$74,999.72	
Average			$239.66	$105.05	$68.86	$28.48

Total Indemnity Paid Twelve Months (July to June) by Counties

County	Total 12 Months
Bergen	$ 2,231.55
Burlington	10,232.69
Camden	43.33
Cumberland	4,032.96
Essex	28.33
Gloucester	3,207.69
Hunterdon	5,237.69
Mercer	3,116.97
Middlesex	2,299.13
Monmouth	213.33
Morris	4,098.17
Ocean	354.99
Passaic	48.34
Salem	5,445.00
Somerset	12,235.30
Sussex	5,685.75
Union	1,198.34
Warren	15,290.16
	$74,999.72

Accredited Herds by Counties (July, 1922, to June, 1923) inclusive

	Herds Under Supervision	Fully Accredited	
Atlantic	1	1	
Bergen	4	..	
Burlington	54	2	2 tem. susp.
Camden	2	1	
Cape May	1	..	
Cumberland	65	14	
Essex	7	3	
Gloucester	55	21	1 tem. susp.
Hudson	..	..	
Hunterdon	77	23	
Mercer	61	19	
Middlesex	63	2	
Monmouth	14	4	1 tem. susp.
Morris	45	9	
Ocean	4	..	
Passaic	2	..	
Salem	28	5	1 tem. susp.
Somerset	102	35	
Sussex	7	..	
Union	6	2	
Warren	76	3	
	674	144	5 tem. susp.
	6598 P. B. 9245 Gr.	2420 P. B. 1958 Gr.	

Import Shipments of Livestock for Immediate Slaughter Entering on Permit—1922–1923

	Cattle	Sheep	Hogs	Cattle for Feeding	Sheep for Feeding
July	4171	9600	14,888	....	....
August	4683	13,562	27,633	....	....
September	3028	7967	34,268	6	12
October	2645	2954	26,809	....	97
November	2545	1722	33,439	....	4
December	3197	1398	76,879	46	1
January	2330	969	15,166	....	....
February	2416	579	105,990	....	....
March	3455	1020	43,711	200	....
April	3015	905	29,669	....	....
May	2562	1227	57,589	23	..
June	4327	1032	51,946	26	....
	38,374	42,935	517,987	301	114

NATIVE CATTLE

Tested by Private Vetcrinarians	Tested	Reactors	Per cent
1922			
July.	517	40	7.7
August.	406	23	5.6
September.	871	26	2.98
October.	1126	103	9.14
November.	436	10	2.29
December.	662	31	4.68
1923			
January.	523	36	6.88
February.	472	27	5.72
March.	977	100	10.23
April.	1336	83	6.21
May.	849	56	6.59
June.	814	35	4.29
Totals.	8987	570	6.34

Tested by Bureau Veterinarians	Tested	Reactors	Per cent
1922			
July.	11	2	18.1
August.	2	0	....
September.	34	0	....
October.	1	0	....
November.	1	0	....
December.	....	....	....
1923			
January.	....	....	....
February.	....	....	....
March.	....	....	....
April.	....	....	....
May.	....	....	....
June.	....	....	....
Totals.	49	2	4.08

Tested by U. S. B. A. I. Veterinarians	Tested	Reactors	Per cent
1922			
December.	4	0	....

Tested for export	Tested	Reactors	Per cent
1922			
July.	5	0	....
August.	....	....	....
September.	9	0	....
October.	1	0	....
November.	43	1	2.32
December.	26	2	7.69
1923			
January.	9	0	....
February.	2	0	....
March.	10	0	....
April.	2	0	....
May.	....	....	....
June.	5	0	....
Totals.	112	3	2.67

NATIVE CATTLE—Continued

Total Number Tested	Tested	Reactors	Per cent
1922			
July.	533	42	7.87
August.	408	23	5.6
September.	914	26	2.84
October.	1128	103	9.13
November.	480	11	2.29
December.	692	33	4.76
1923			
January.	532	36	6.76
February.	474	27	5.69
March.	987	100	10.13
April.	1336	83	6.21
May.	849	56	6.59
June.	819	35	4.27
Totals.	9152	575	6.28

IMPORT CATTLE

Tested by U. S. B. A. I. Veterinarians	Before Entering			After Entering		
	Tested	Reactors	Per cent	Tested	Reactors	Per cent
1922						
July.	398	8	2	35	3	8.5
August.	229	1	.4	69	4	5.7
September.	442	10	2.26	73	13	17.8
October.	220	2	.9	63	16	25.39
November.	247	6	2.42	37	4	10.81
December.	199	1	.5	36	2	5.5
1923						
January.	66	0	....	90	10	11
February	182	2	1	35	0	
March	150	4	2⅔	44	3	6.8
April	149	2	1.34	37	0	
May	201	5	2.48	20	1	5
June	286	2	.69	49	3	6.12
Totals.	2769	43	1.55	588	59	10.03
Tested by private veterinarians						
1922						
July.	1331	50	3.7	..	..	
August.	1690	68	4	..	..	
September.	2346	70	2.98	17	2	11.76
October.	1480	63	4.25	..	..	
November.	1393	46	3.30	..	..	
December.	1095	35	3.19	..	..	
1923						
January.	540	24	4.44	..	..	
February.	676	26	3.84	..	..	
March.	977	33	3.58	..	..	
April.	1114	39	3.5	..	..	
May.	1289	35	2.71	1	0	
June.	1815	64	3.52	38	6	15.78
Totals.	15746	553	3.51	56	8	14.2

PHYSICAL CONDEMNATIONS

Reported by private veterinarians as suspected tuberculosis on physical examination and slaughtered:

September 1922	2
March 1923	1
	3

Reported by Boards of Health as suspected tuberculosis on physical examination and slaughtered:

July 1922	2
August	3
September	2
October	1
November	0
December	0
January 1923	0
February	4
March	3
April	1
May	4
June	1
	21

Reported by Board of Health as tuberculosis as shown by tuberculin test and slaughtered:

July 1922	3
August	4
September	10
October	17
November	11
December	0
January 1923	0
February	4
March	29
April	5
May	6
June	4
	93

Reported by Board of Health as suspected tuberculosis on physical examination and later tuberculin tested:

	Tested	Reactors
September 1922	4	4
February 1923	1	1
	5	5

CATTLE SLAUGHTERED

Reactors slaughtered	Quarantined last fiscal year	Quarantined this fiscal year	Quarantined same month as slaughtered	Reactors not slaughtered in month quarantined
1922				
July	27	—	17	28
August	2	19	8	19
September	6	16	23	18
October	2	24	52	67
November	3	67	10	5
December	3	13	13	22
1923				
January	2	10	33	11
February	1	15	16	11
March	1	21	55	39
April	—	39	35	30
May	—	2	8	43
June	—	46	30	10
Totals.	47	272	300	303

REPORT OF THE BUREAU OF MARKETS

ALEXIS L. CLARK, *Chief*

Progress made by New Jersey farmers in marketing their products has been more apparent during the past year than in any other year in our memory. Cooperative marketing enterprises have been successfully conducted, for one year or more, by at least five groups of farmers, whose total membership was 3,500. Organizations and individual producers have done some good work in standardizing products for market, and they have been encouraged by the support of producers, dealers, city authorities and individual consumers. Some less easily recognized signs of progress have been made along other lines, but we mention cooperation and the standardizing of products for market first, as they offer the greatest opportunities for better marketing.

There has been marked increase of interest on the part of the entire public in the problems of farm marketing. The public mind is turned toward the subject of economics in a far greater degree than ever before. Farmers have recognized the importance of the marketing side of their industry and are eagerly seeking facts and general information concerning it. There has been encouraging interest shown by the wholesale produce trade, and some little interest in the broader problems of distribution has been shown by isolated groups of retailers. This development of interest on the part of all who are connected with the practices of marketing is essentially healthy and must be strengthened, because only upon it can we hope to establish a real scientific system of food distribution.

COOPERATIVE MARKETING HAS SUCCEEDED IN NEW JERSEY

One of the largest farmers' cooperative marketing organizations in the entire world has some 2,500 members in the northern counties of New Jersey. This is the Dairymen's League Cooperative Association, which has a history covering nearly twenty years of activity and a record of actual selling since 1917. It owns numerous milk receiving stations, bottling plants, by-product factories and other establishments necessary to the efficient handling of its great output. The total membership of this organization is about 70,000. It has, during the past year, operated wholesale and retail marketing outlets for the handling of fluid milk, ice cream and other milk products. The Interstate Milk Producers' Association has several hundred members in the southern counties of New Jersey. The Bureau of Markets has maintained service relationships with these two organizations. The incorporation of all the local groups of the Dairymen's League was effected through this Bureau, and recommendations have been made to the directors of the Interstate Milk Producers' Association concerning the better establishment of the local units of that organization in the state. These two organizations have very effectively stabilized both farm and city prices of all the milk products sold in the state, and have rendered a genuine service to the entire public in establishing efficient distribution methods and influencing production methods.

The Jersey Fruit Growers' Cooperative Association, whose by-laws and organization plans were prepared by this Bureau, proved its

worth during the marketing season of 1922. Some 450 carloads of peaches and apples were marketed. Most of these shipments were graded by the employees of the Association and certified as to grade by food products inspectors employed by this Bureau under a joint agreement with the Federal Bureau of Agricultural Economics. This association has six local units located at Camden, Riverton, Moorestown, Vineland, Burlington and Mount Holly. Each unit owns and operates its own central packing house. The headquarters of the association are in Camden, where the sales manager has his office. All sales were made through the North American Fruit Exchange, and in 1923 will be made through the same agency now reorganized as the Federated Fruit and Vegetable Growers, Inc. The brand for the best grade for the 1923 selling season will be the "Jersey Jerry" brand. There have been many favorable comments from the trade on the uniformity and the high standard of the products that were shipped out the first year by this Association.

The New Jersey Poultry Producers' Association has been merged into the Atlantic Coast Poultry Producers' Association, and a good start has been made in establishing an orderly marketing system for the commercial eggs produced in the eastern states. This Bureau has given much time to the bookkeeping and record department of this Association, and has recommended a more definite form of local-unit organization among the membership.

The Garden State Cooperative Potato Association was organized early in 1922 by fifteen potato growers who agreed to pool their entire crop and establish an office with a combined selling agency employed to market their entire output. The results this first year were satisfactory, and probably the same plan will be continued in 1923 with the addition of a special salesman to cover the North Jersey metropolitan area. This Association was also served by the joint State and Federal food products inspectors in certifying as to the quality of their output.

In considering where the responsibility should be placed for those things which have made for success and also those things which have acted as a handicap in the development of these organizations, the following points have been noted: The whole-hearted and complete acceptance of cooperative principles on the part of the individual members generally insures success. Where members voluntarily join themselves together for the more efficient handling of their products and where the individuals seriously and honestly endeavor to develop the organization for the benefit of all, the movement generally succeeds. Where farmers, particularly in large numbers, are urged during a short, energetic campaign to join such movement without being thoroughly converted to the fundamental ideas of cooperation and go along with the crowd in a waiting-to-be-shown spirit, the benefits of cooperation are more slowly developed.

While there doubtless was a saving, during 1922, of hundreds of thousands of dollars to the dairymen, fruit growers, poultrymen and potato growers in New Jersey because of these cooperative marketing enterprises, the greatest gain has been the widespread appreciation of economic facts on the part of the growers and the broader understanding of the close relationship existing between growers of a certain commodity and producers of other commodities. Before cooperation in marketing farm products can ever take its full place in the economic life of our people, members of cooperative organizations must recognize that such organizations can succeed only by performing certain services more efficiently than individuals can perform them, and that voluntary teamwork on the part of the individual members is the secret of cost reduction. This applies to the production of the kinds and qualities shown by the marketing contacts to be most in demand and recommended by the organization to the members; to the preparation of the products for market by grading and packing to meet market requirements; to the distribution of products so that system may be introduced and some of the great wastes now present may be eliminated, and to the advertising of standard products uniformly prepared and systematically distributed in a way that will command the confidence of the buying public, thus creating demand and holding the trade. The whole future of cooperation rests upon the mental attitude of the cooperators, and there is little hope for the success of a cooperative enterprise in which the members are secured through coercion and held together only by legal contracts.

STANDARDIZATION

In our previous reports, and always in considering the various projects undertaken, we have placed the subject of standardization first. Experience seems to show, however, that there is little hope of standardizing our farm products for market except through producers' cooperative marketing organizations. Dealers in farm produce seem to recognize very clearly that the standardization and uniform grading of farm merchandise is a fundamental step in every effort to improve food distribution, but so far in New Jersey they have done very little to aid in this movement. In the New Jersey potato industry there is general recognition of the need for standardizing the output. While individual merchants handling large quantities of potatoes endeavor to have their products graded in a uniform manner, there has been no broad-gauged attempt to standardize the grading methods adopted by these different dealers, and the consequence is that New Jersey potatoes are recognized in the outside markets as a non-dependable product. New Jersey farmers are probably losing from 25 to 50 cents a sack every year because of the ill reputation which their potatoes have in the market. Under the competitive system of merchandising this product, each dealer hesitates to seek the cooperation of other dealers. This condition maintains, in the New Jersey potato industry, a method suitable to fifty or even twenty-five years ago, but it is entirely out of place, wasteful and immensely costly in these days. The grading of New Jersey potatoes according to the recognized national standards must come. In good growing seasons and in poor seasons they must be sold for what they are. Contrary to a somewhat generally accepted theory, traders in the large city markets know the relative value of New Jersey potatoes from day to day better than anyone else, and it is the average of their judgments that is a large factor in making the market price.

A start has been made in potato grading. Twenty-five inspectors were employed in 1922, under a joint agreement between this Bureau and the Bureau of Agricultural Economics in the United States Department of Agriculture, and were authorized under state and federal laws to issue certificates of inspection which may be used in court as prima facie evidence as to the character of the products inspected. Some 1,400 carloads of potatoes were so inspected and certified by these men during the shipping season of 1922. Sixteen of these carloads were the property of or in the custody of merchants. About an equal number were owned by individual producers, while the remainder were handled by producers' cooperative marketing associations.

Over 400 carloads of peaches, comprising practically the entire output of the Jersey Fruit Growers' Cooperative Association and Cooperative Growers' Association at Beverly, were sold on the basis of our inspectors' certificates.

Probably the most interesting development in the marketing of milk during the past year was the adoption by certain municipalities of milk ordinances modeled after the ordinance recommended by the State Department of Health, which includes the three grades of milk recommended by this Bureau in Circular 51, covering the investigations of this subject. The municipalities adopting this ordinance, therefore, make legal the sale of three grades of milk: certified, pasteurized, and raw milk produced from tuberculosis-free cows. The municipalities which have adopted such ordinances, according to the State Department of Health, are Matawan, Moorestown, Woodbury, Woodbury Heights, Roselle Park and Princeton. Several municipalities in Monmouth, Gloucester, Cumberland and Burlington counties are also reported to be considering the adoption of this ordinance. The State Department of Health recommended the adoption of the ordinance in all municipalities where investigations of milk supplies were made during the past year.

The Bureau has been called upon for assistance in some of the municipalities where the ordinance was adopted and in others where the ordinance is under consideration. The two active breed associations—the State Holstein and Guernsey Associations—through their field men, have actively supported the campaign for the adoption of this uniform ordinance.

The Bureau is convinced that the adoption of milk ordinances legalizing the sale of the three recommended grades of milk is a move distinctly in favor of consumers and of producers of good, safe milk supplies.

Naturally, there is still some objection to tuberculin testing of cattle, but these objections are rapidly disappearing. The demand for safe milk on the part of health authorities and the consuming public is increasing rapidly, and if the producer does not safeguard the raw milk supplies, through tuberculin testing of cattle and other measures recommended in the ordinance referred to, pasteurization of all supplies excepting certified will result to the distinct disadvantage of those producers who are conscientiously producing and marketing a safe raw milk.

The Pennsylvania Department of Health within the past few months has adopted a regulation prohibiting the sale, in that state, of any raw milk excepting certified and that produced from tuberculosis-free cows and by medically-examined employes. This instance is cited simply to show the tendency. In New Jersey the adoption of the minimum grades and requirements for the production of safe milk is voluntary, and we believe that producers have everything to gain and nothing to lose by seeking and encouraging their adoption wherever possible. The Dairymen's League Cooperative Association has offered assistance, believing that the general adoption of the grades by ordinance would help the dairy industry in the northern part of the state, where they market much of their product.

The Black Giant breeders in the central part of the state, through their organization, have asked this Bureau to certify their flocks. When put in operation, this will be the first effort of this kind in the state. The work will be carried on as a cooperative project with the Poultry Husbandry Department of the New Jersey College of Agriculture and the breed association. Under the plan the cooperating breeders will submit their flocks for regular inspection, and only birds meeting the requirements based on the "Standard of Perfection" will be retained in the breeding pens. This will lead to certification of flocks and should do much to improve this important breed of poultry, which originated in this state and is now very popular.

Some interest has been shown also in a plan to certify the flocks producing eggs for commercial hatcheries along lines somewhat similar to the work being conducted in Wisconsin. New Jersey is an important baby-chick producing state, and such a plan properly operated would undoubtedly do much to improve the business.

A survey of the commercial rye-producing sections has been made in an effort to determine the status of this industry from the standpoint of marketing. The results are of particular interest in view of the fact that standard grades for rye have been adopted by the Federal Department. A similar survey has been made of hay production, although a relatively small amount of hay is grown for market in this state. The Federal Department of Agriculture has also adopted standard grades for timothy, clover, and timothy and clover mixtures which are now in force in the large markets, including New York and Philadelphia.

Standard grades for set onions were established, but little actual progress has been made in their use. Standard grades for apples were given particular attention during the past year, and after conferences with representatives of the State Horticultural Society and the State College and with many individual growers, standard grades for this product were established. We have continued our studies on grades for eggs, tomatoes, lettuce, and asparagus.

The establishment of these grades is in accordance with the provisions of the New Jersey law known as Chapter 83, Laws of 1921, which authorizes the State Department of Agriculture to establish grades and to protect the use of the grade terms. Producers and shippers may use these New Jersey standard, legal grade terms for selling and advertising purposes, and for marking on packages when such products actually conform to the grade specifications. Copies of all grade descriptions in circular form may be secured from this

Department. This is a subject that cannot be given too serious consideration by New Jersey farmers. Every industry which has built up an efficient marketing system has found it necessary to adopt certain uniform grades and to build up a spirit of confidence in the buying public toward the reliability of its product. The standardization program for farm products in New Jersey has for its object the building up of a reputation and a demand for uniform products of known quality in our great Eastern markets. Some of these grades may be of high quality and some may be of low quality, but the true quality of the grade must be known and the goods must be sold for what they actually are.

The report of the enforcement of the Milk Dealers' Licensing and Bonding Law, Chapter 74, Laws of 1917, has been published as Circular 60. Two hundred and six licenses were issued under this law during the license year July 1, 1922, to June 30, 1923, and 108 exemptions were granted. The chief difficulty in the enforcement of this law has been the tardiness and in some cases the entire failure of certain dealers to make application for license. This has necessitated a more or less thorough canvass of the state and legal action in certain instances. Cooperation on the part of producers would obviate much of this difficulty.

MARKET NEWS REPORTING

This project has been further developed this year both in the receiving and dissemination of market information. Through cooperative arrangements with the State Bureau of Markets in Pennsylvania and New York State, and with the Federal Bureau of Agricultural Economics, trained reporters stationed on the Philadelphia, Newark and New York markets gave a part of their time to reporting prices and market conditions on New Jersey-grown products. Mr. B. W. Sherburne is in charge of this project and gives very close attention to the work, which requires long and regular hours. The drop from the federal leased wire has been maintained in the office. From this wire we have taken all of the market information, flashed from many of the large markets in the country, that would be of particular interest to New Jersey people. Through this arrangement, by half-past eight or nine o'clock each day, we have had a very complete report covering the market conditions and prices on some twenty or thirty commodities grown in New Jersey and sold in Philadelphia, Newark and New York that morning.

The collection of this information has been developed to a fairly complete degree. We are not so well satisfied with the distribution of this important information, although we are pleased with the progress made. During the early spring months representatives of the Bureau called and discussed this subject with most of the newspaper publishers in the state. At the end of the fiscal year most of the larger cities in the state had at least one newspaper carrying our daily report of the Philadelphia, Newark and New York markets. A number of the weekly newspapers, circulating so largely through the farming sections, were carrying our weekly market report, and practically all of the papers were carrying some of our newspaper stories on market and crop conditions. The various newspaper reporting

services have found a demand for these market reports, and through them the dailies get these reports each day at a very reasonable cost. Arrangements were perfected with wireless sending stations in Philadelphia, Newark and New York so that these daily market reports have been broadcasted in such a manner as to be available in all sections of the state.

In the development of this project during the past two or three years the tendency has been for individual growers to ask for these reports to be mailed to them direct. In meeting these requests we soon found that we were building up a tremendous mailing list, with heavy postage cost and office expense. During the latter part of the 1922 fiscal year, when we found the newspapers and wireless stations were covering the state so thoroughly, and hoping to encourage these agencies to extend this service even further, we reduced our mailing lists and have since referred inquiries for the daily report to one or more newspapers in their community. Our weekly market letter has been enlarged to include a report of the wholesale grain market and seems to be filling a very definite need. One county board of agriculture pays the postage to have this letter sent to all of its members.

Aside from the regular market news service, we have continued our work with the volunteer women reporters in a number of New Jersey cities. These women, representing various clubs and organizations which in turn belong to the State Federation of Women's Clubs or the New Jersey League of Women Voters, are supplied with blank postal cards and are asked to give representative retail prices on two seasonable products each week. These prices are collected on Tuesday and received in the Bureau of Markets office on Wednesday. On Wednesday afternoon a city market letter is mailed to newspapers and women's clubs, giving a summary of these reports together with a comparison of wholesale market conditions.

We have not been able to carry this market reporting service directly enough to the thousands of individual farmers throughout the state as yet. We are convinced that this service has a highly educational value for the farmers, and we believe that more of the farmers' organizations in the state will recognize the good there is in it to such an extent as to be willing to pay the telegraphic charges for early morning reports. We would like to see all of the important shipping stations supplied with a bulletin board upon which these market reports could be posted each morning by ten o'clock. This bulletin board would then furnish a fairly complete and impartial account of some of the principal markets that morning, which could be used by the growers and shippers around that station as a valuable guide in their marketing and shipping activities that day. While we believe local arrangements could be made with newspapers for this service, perhaps in some counties the county board of agriculture would be the best agency to institute and maintain such a service.

A report on this project should not be closed without pointing out the dependence of reliable market reporting upon the standardization of our products. It is almost impossible to report such products as eggs, asparagus and hay in an accurate way at the present time. Standard grades for hay will probably be used in the very near

future, and New Jersey is also badly in need of standard grades for asparagus.

TRANSPORTATION

Cordial relations with the various railway freight and express companies have been maintained and scores of local difficulties have been considered and in one way or another settled, many of them to the satisfaction and benefit of both the carrier and the producer. These problems have included such matters as car supplies, refrigerator cars, rates, daily schedules, poorly marked packages, poorly constructed packages, sidings and terminal facilities. During the past year we have placed special emphasis upon the importance of our terminal market facilities. New Jersey's requirements in this matter were presented to the Port of New York Authority and to the Board of Commerce and Navigation. Both of these organizations have shown a deep interest in this subject, and we are confident that the steps already taken by the Board of Commerce and Navigation through Mr. J. Spencer Smith, its president, will do much toward bettering conditions in the Newark and Jersey City terminals.

It is becoming more and more apparent that new and quite extensive terminal facilities must be provided in the Greater New York area to accommodate the traffic requirements. It is hoped that all parties interested can be induced to agree to a definite, comprehensive program. This program should probably call for the handling at one point of all perishables brought in by all rail lines.

RESEARCH

There is always a well-laid plan for every successful piece of work. When scientific aid was first established to influence the methods and practices of farm marketing, certain defects in the general marketing system were very apparent and there was little need for research work to discover them. As the work developed, however, it became evident that careful studies must be made along various lines in order that the activities of the marketing agencies might be most effective. Provision was made in the Bureau's budget for the employment of a research man at the beginning of the fiscal year, and some good work has been accomplished. This work has been primarily directed at the costs of marketing. It will take at least another year to secure sufficient data to show the average costs, under various farm and marketing conditions, of the several transactions by which farm products pass from the producer to the consumer. These figures are being ascertained on such products as potatoes, apples, peaches, strawberries, sweet potatoes, tomatoes, lettuce, cabbage, onions, beets and eggs. The transactions covered include producer to country buyer, country buyer to city wholesaler, wholesaler to retailer, retailer to consumer, and the several items of cartage and railway transportation. These figures are being secured by personal contact with all the agencies involved, by a system of reporting from certain of the parties and by following individual shipments from the farm all the way to the ultimate consumer. A study of the margins involved in retailing these products is being carried on with the cooperation of some fifty retailers in six of the

principal cities of the state, and an attempt is being made to find out retailers' operating costs and to divide these costs into their several factors, such as rent, delivery, credit, clerk hire, management, turnover, etc.

Sufficient information has been secured to justify the conclusion that the actual costs of retailing foodstuffs are relatively high, and that the wide spreads frequently observed between farm prices and table prices are seldom caused by excessive profit-making, but usually by the methods of handling. These methods are much involved and cannot be changed quickly. They are the result of many years' development along lines projected by individuals with only individual objectives in view, the broader aspects being completely ignored. It is well known that producers know little of the retail storekeepers' difficulties, retailers know little about the varieties of fruits and vegetables grown, their particular uses, etc., and consumers know little of the problems of either the producer or the dealer. This is the situation that gives rise today to the general and usually careless charges of profiteering and unfairness. Wholesale commission merchants find it almost impossible to explain peculiarities in returns to producers, and some producers find it impractical to prepare their products with the top face showing the same quality as the bottom of the package. A very general education and the development of a broader outlook upon our commercial relations will be necessary before some of the causes for high costs of distribution are removed. The producer must learn that his interests are concerned with his products just as much after they leave his hands as when they are on his farm, and the consumer must learn that prosperity cannot smile on the city unless it also smiles on the farm. A new field of research has been opened in the study of future prices. Insurance companies have long appreciated the necessity of forecasting percentages for the future. Their premiums are worked out on the basis of mortality rates. The daily market value of a commodity is the result of many men's estimates of one or more factors. Egg prices each day, for instance, are influenced by the volume of eggs received in the markets, by the volume which is expected in the next day, the next week and the next six months, by the quantity believed to be held in the storage houses of the country, by the increase or decrease in the number of pullets which may be kept on the farms of the country during the next few months, and perhaps by the probable egg production in a foreign country. Up to the present time large dealers, dealers' organizations and publishers have formed opinions on these various phases and have fixed in their own minds a certain value for the product for that day. This estimate of supply and demand may change by the minute, by the hour or by the day.

One reason why the producers have had so little to say about the price is that they never have been in a position to know as accurately as dealers about supply and demand conditions. Another reason is that they have not been in a position to take advantage of such knowledge if they did have it. A circular entitled "Factors Influencing the Price of New Jersey Potatoes on the New York Market" will be ready for distribution early in the fall. This deals largely with the possibilities of forecasting prices.

ACCOUNTING

Seventeen of the farmers' business organizations in the state have received aid in auditing their accounts, in starting or revising their accounting systems and have been given other advice regarding bookkeeping, accounting, etc. Cooperative association accounting is one of the most complicated forms of accounting, and too often the subject is given little attention by the officers and directors of farmers' organizations.

EDUCATIONAL PUBLICITY

This project has continued without any special development over that of last year. More newspapers are using our stories and some of them are using practically everything we send out. One rural weekly newspaper used three of our articles in one edition. This is the best method we know of to carry home to the general public some of the fundamental principles in marketing and to influence marketing practices. These stories carry marketing facts in "newsy" form. Campaigns for increased consumption of various products as they reach their peak of production have been carried out. Through this medium we have helped to influence public opinion toward the advantages of cooperative marketing. Some baseless criticisms of producers have been prevented by the presentation of certain facts, and we have reason to believe that some of the progress made in the better preparation of farm products for market is due to our newspaper stories showing that dealers and consumers can afford to pay more for properly graded and well prepared food. Every newspaper reader in the state cannot fail to have noticed the increased amount of space devoted to agricultural topics in the city press and to have appreciated the fairer and sounder viewpoint shown by city editors in the last few years.

"AGRICULTURAL WEEK"

The Farm Products Show held in the Trenton Armory in connection with "Agricultural Week" in January was our only exhibit during the year. Various organizations displayed products for competitive and educational purposes. The outstanding feature probably was the number and quality of Jersey Black Giant fowls entered. The Bureau caused the first pair of this variety to be shown in 1918 and has encouraged the breeding of them because of their promise to fill the need for a pure American breed of poultry for meat production. The State College of Agriculture staged a splendid exhibit showing its varied activities. Atlantic County won the cash premium of $100 in gold offered by the New Jersey State Bankers' Association to the county making the best display, from an educational standpoint, of its farm products and home economics work. Assistance was given to some of the state associations in making out their programs for meetings during this week.

The Bureau conducted another scoring contest for milk during the last "Agricultural Week." Probably the most interesting part of this feature was the surprise contest for City Health Departments. Six municipalities—Montclair, Summit, Elizabeth, Newark, Camden and Red Bank—entered samples in the class for raw milk from tuberculin-tested herds, Montclair again winning, with the high score of 91.16 for five samples, and thus retaining the silver loving cup offered by the Trenton Chamber of Commerce which it won in the 1922 contest. This cup will again be competed for in 1924.

In the city class for pasteurized milk, the Oranges won first for five samples, scoring an average of 87.52, with Newark, Elizabeth, Atlantic City, Camden and Trenton competing and scoring in the order named.

Four classes were provided for submitted samples, and twenty-one samples were entered. High score went to Wood Brook Farms, with 99.3 for certified milk. All scores were highly creditable. While most of the samples submitted in this contest were specially prepared—which was not true of those in the City Health Department Contest, where samples were taken from the wagons without prior notice—the contest, nevertheless, is of value in that the fundamentals for the production of a clean supply are always the same and their importance is emphasized in such a contest. The Health Department Contest has tended to create rivalry among the competing municipalities to improve the quality of milk supplies. However, the scores received are not necessarily indicative of the milk supplies for the entire year, but only for one day in the year.

CITY MARKETING

This is a project which challenges the utmost resources of the Bureau. The farm end of marketing has been pretty well surveyed, and as we are quite sure of the various lines of work that are needed our work along that line is definitely mapped out. It is only half of the marketing problem, however, and a tremendous field of opportunity lies before us in recognizing definitely the problems of city marketing and in the adoption of proper plans for their solution. Many conferences with leading wholesale dealers in all of the large markets of the East have been held by representatives of the Bureau. The degree of favor in which New Jersey potatoes are held by members of the produce trade in all of the large markets from Boston to St. Louis was discovered through personal visitation. Such matters as standard grades, shipping point certification, f. o. b. selling agreements, etc., have been subjects for conferences. The organization of a nation-wide fruit and vegetable selling agency has been of particular interest to us. The outstanding need today in the wholesale produce business is for a more complete understanding between the city wholesaler and the country producer. The actual costs of wholesaling can be reduced only as this understanding develops and each works for the interest of the other as well as for himself.

The problems of retailing are probably more complex than those of our other marketing channels. Some pioneer work has been done by the Harvard Bureau of Research, and considerable interest is apparent among leading food retailers in a closer study of their business. Our work with the retailers up to the present time has been confined to research. Public market places have been supported by

this Bureau, and New Jersey is now well supplied with wholesale and retail farmers' market places. A new market is about to be opened in Atlantic City and plans are being made to establish one in Burlington. Several cities have called upon us in the past year to make recommendations on this subject, some of which have been carried out.

Our cooperative relations with the State Federation of Women's Clubs and the New Jersey League of Women Voters have continued as before. This work is a part of our market reporting activities.

As a result of the information that we have gathered and from our experiences and study of this subject, we are making one recommendation to the larger cities of the state which we believe will be adopted in time, and which eventually will have very marked effects upon our whole distribution system. Many of the cities now employ a market keeper to collect fees and have charge of the public markets, and many of them are receiving a considerable income from their public market places. Our recommendation to such cities is to employ a "City Marketing Director." His duties should be to run the public market, to build up closer relations between the city storekeepers and the nearby farmers who haul directly to the city, to stimulate a keener interest among the retailers in the economic handling of perishables, to carry on a continuous educational campaign among consumers regarding marketing practices and to maintain as nearly as possible a proper adjustment of produce supplies to consumption demands. Provision has been made by which the selection of a City Marketing Director may be approved by the Secretary of Agriculture and placed upon the pay roll of the Bureau of Markets for a small portion of his salary on account of the service to the Bureau that he will render in his position. This leaves the employment and the control of this office in the hands of the municipality, but insures to the work the cooperation, supervision and aid of the State Bureau of Markets. While the benefits of such an appointment in our cities should be worth vastly more than its maintenance cost, there are a number of cities in which the producers themselves would contribute a part or all of the money needed for its support. There is really no reason why a city should make a profit from a farmers' market place. This Bureau has always recommended that such institutions should be self-maintained without cost or without profit to the city. Where such markets are maintained the income could be used toward defraying the expenses of the City Marketing Director's office, but where they do not exist other farmers' organizations should be approached, and eventually plans might be worked out by which properly trained men could be maintained in our cities to handle the various marketing problems therein in a constructive and educational manner.

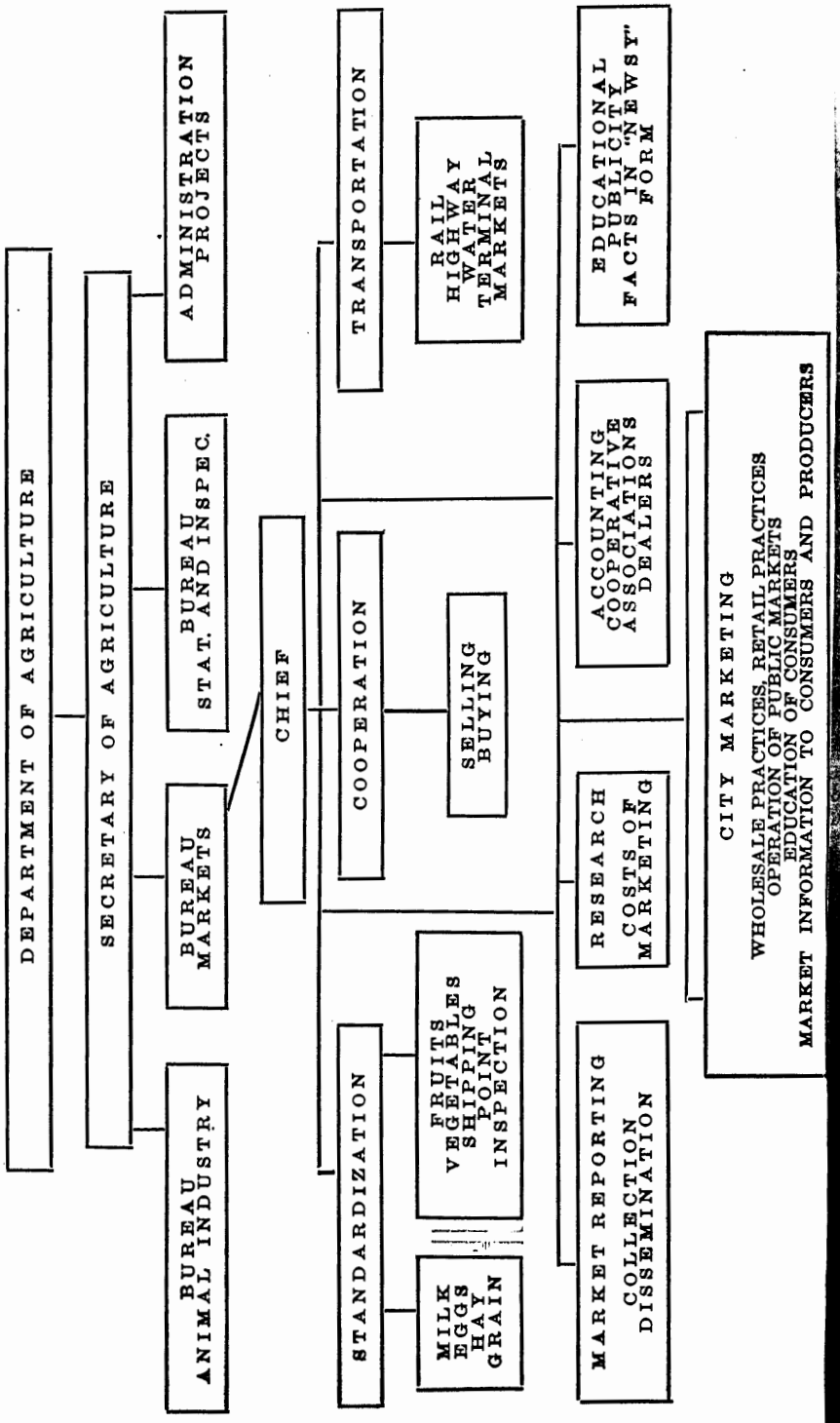
SUMMARY

From this report it will be seen that continued progress has been made in the standard grading of farm products and in the organization of farmers for selling and for buying. Increased service has been given in market reporting and in transportation. New lines

of helpful work are being devised through the investigational work of our research project. Cooperative associations have been strengthened through our aid in accounting. Producers, consumers and dealers have been furnished with some of the facts in regard to marketing through the aid of the press, and while no outstanding results are apparent in the city end of marketing a beginning has been made and at least one recommendation offered.

The Bureau has felt the need and has taken advantage of the cooperation of the country agricultural agents, the State College of Agriculture, the State Federation of County Boards of Agriculture, the State Chamber of Commerce, the New Jersey State Bankers' Association, the State Board of Commerce and Navigation, the Port of New York Authority, the State Federation of Women's Clubs, the New Jersey League of Women Voters, various local chambers of commerce, the Trenton Independent Grocers' Association and numerous other agencies and organizations within the state. We have also enjoyed the support and cooperation of the Bureau of Agricultural Economics in the United States Department of Agriculture, the National Association of State Marketing Officials, the National League of Commission Merchants, the International Apple Shippers' Association and others.

The publications during the past year have consisted of a Daily Report mailed only to county agricultural agents and farmers' organizations, and given to the public through the press; a Weekly Market Letter to the press and to individual farmers upon request; a Weekly City Market Letter to women's clubs, the press and interested individuals; one or two stories on timely marketing topics each week to the press; contributions from various members of the Bureau to magazines, papers, etc.; a report of the Bureau's activities submitted to the Agricultural Convention and printed in Bulletin No. 34; Circular No. 59, entitled "Standard Grades for Sweet Potatoes"; Circular No. 60, entitled "Milk Dealers' Licensing and Bonding Law—1923," and Circular No. 62, entitled "Standard Grades for Apples."



REPORT OF ASSISTANT DIRECTOR OF FARMERS' INSTITUTES

WM. H. HAMILTON

In conducting farmers' institutes during the past year the State Department of Agriculture has followed its regular policy of leaving the control of the meetings largely in the hands of the local committees. Due to the organized extension work in the counties, the Department did not deem it necessary to make a special campaign for institute meetings, but rather furnished speakers and arranged meetings when and where demands were made. During the year there were few calls for the type of institute at which there is discussion of four or five different subjects in one or two sessions. On the other hand more help was requested for special meetings, such as meetings of the various breeders' associations, fruit and vegetable growers' associations, calf clubs and one-session meetings where a special topic was discussed. This type of meeting has been more successful, since interest is always keener where groups of men who are particularly interested in some one thing are brought together to discuss that subject. During the year sixty-one meetings were held. The following list shows the places of meetings, and in some instances the special subjects involved:

AUGUST, 1922
19, Paterson
30, Belle Meade

OCTOBER, 1922
15, Harbourton

NOVEMBER, 1922
1-2, Bergen County
3, Allentown
18, Cape May County Annual Meeting
16-17-18, Red Bank Poultry Meetings
Mercer County Holstein Meeting

DECEMBER, 1922
9, Somerset County Annual Meeting
12, Hunterdon County Holstein Meeting
14-15, Bergen County Vegetable Meeting
14, Mays Landing
14, Mercer County Holstein
15, Lambertville
16, Essex County Annual Meeting
14, Sussex County Annual Meeting
15, Somerset County Holstein Meeting
14, Clinton
14, Mercer County Holstein Annual Meeting
18, Cranbury
19, Baptistown
19, Reaville
20, Cokesbury
22, Hanover Neck
28, Center Grove
28, Williamstown

JANUARY, 1923
9, Locktown
10, Fairlawn
11, Stanton
22, Shiloh
23, White House
24, Berlin
25, Janvier
27, Three Bridges
29, Ringoes
30, Mullica Hill
30, Atlantic County Banquet, Egg Harbor
31, Vineland Poultry Association Meeting

FEBRUARY, 1923
1, Ocean County
16, Gouldtown
26, Wenonah

MARCH, 1923
1, Haddon Grange
1, Hancocks Bridge
2, Mercer County Board Meeting
6, New Monmouth
15, Elizabeth
21, Garton Road
24, Eldora
27, Paterson

APRIL, 1923
5, New Brunswick Guernsey Meeting.
5, Mt. Holly Guernsey Meeting
6, Bernardsville Guernsey Meeting

MAY, 1923
11, Morristown

JUNE, 1923
2, Princeton Guernsey Meeting

Calf Club Meetings

FEBRUARY, 1923
9, Belvidere
8, Sarepta
17, Washington

MARCH, 1923
24, Somerville
27, Newton
27, Hamburg

MAY, 1923
21, Lawrenceville

SPEAKERS

As in the past, the Department did not employ a regular corps of institute speakers, but instead secured the best speakers available to discuss the subjects desired at the various meetings. In a number of cases the local people made a special request for some particular speaker and, in every instance, the Department endeavored to fulfill this request. During the season the following speakers were used:

State Agricultural College

Geo. W. Hervey, New Brunswick, N. J.
A. W. Blair, New Brunswick, N. J.
M. A. Blake, New Brunswick, N. J.
C. H. Nissley, New Brunswick, N. J.
R. F. Poole, New Brunswick, N. J.
Allen Waller, New Brunswick, N. J.
Dr. T. J. Headlee, New Brunswick, N. J.

Farmers

Chas. D. Barton, Marlton, N. J.
Chas. D. Cleveland, Eatontown, N. J.
C. L. Crispin, Salem, N. J.
Roscoe De Baun, Pinebrook, N. J.
Howard F. DeCou, Merchantville, N. J.
Neal Demarest, Mountain View, N. J.
B. S. Ells, Vineland, N. J.
Howard B. Hancock, Bridgeton, N. J.
John H. Hankinson, Glen Moore, N. J.
L. R. Harris, Lambertville, N. J.
Thomas R. Hunt, Lambertville, N. J.
Henry W. Jeffers, Plainsboro, N. J.
A. R. Kohler, Westville, N. J.
Maurice Kuhl, Dover, N. J.
C. B. Lewis, Riverton, N. J.
Edward Mickel, Caldwell, N. J.
Walter L. Minch, Bridgeton, N. J.
W. W. Oley, Bridgeton, N. J.
Geo. W. Rexon, Haddonfield, N. J.
Arthur L. Richie, Cinnaminson, N. J.
Stanley B. Roberts, Port Jervis, New York
Henry Schmidt, Trenton, RD No. 1, N. J.
C. E. Self, Blackwood, N. J.
Howard Taylor, Jr., Riverton, N. J.
F. G. Thorn, Collingswood, N. J.
Percy Van Zandt, Blawenburg, N. J.
Elmer Wene, Vineland, N. J.
Dr. W. H. Whiton, Neshanic Station, N. J.

Miscellaneous

H. N. Boucher, Rutherford, N. J.
W. H. Card, Manchester, Conn.
John S. Clark, Hardwick, Mass.
H. W. Collingwood, New York City
Forrest E. Dager, Philadelphia

Russel Danks, Winterthur, Del.
R. G. Darby, Somerville, N. J.
Alfonso Dare, Atlantic City, N. J.
Dr. F. A. DeMaris, Asbury Park, N. J.
Mrs. Douglas Dilts, Trenton, N. J.
I. T. Francis, Caldwell, N. J.
Mrs. Herbert Geib, Caldwell, N. J.
John E. Gill, Trenton, N. J.
I. H. Goodwin, Bordentown Indusrial School Quartette
H. M. Howard, West Newton, Mass.
Wm. F. Kirkpatrick, Storrs, Conn.
H. C. Knandel, State College, Pa.
Vera McCrea, Ithaca, New York
Katherine MacLean, Brooklyn, New York
Prof. James Rive, Ithaca, New York
Raymond Scheetz, New Hope, Pa.
Gertrude Smith, Haddonfield, N. J.
Mrs. W. Vogel, Caldwell, N. J.
James Whetsel, Vineland, N. J.
Eva Wilson, Columbia University, New York

REPORT OF THE FRELINGHUYSEN LOAN FUND

GRACE M. ZIEGLER, *Assistant Manager*

The boys and girls who have purchased pure-bred livestock through the Frelinghuysen Loan Fund, established two years ago, are daily showing evidence of its value to New Jersey agriculture. The original amount contributed to the fund by President Joseph S. Frelinghuysen and Mr. Julius Forstmann was $30,000, and this was augmented by an additional contribution of $1,000 from the Asbury Park Trust Company to be loaned to boys and girls in Monmouth County.

Loans are made to boys and girls on their notes without security other than assurance that they are the kind who will do their best and will carry out their undertaking without any loss of interest. They must also have a suitable place in which to keep their animals, and all of this is decided in cooperation with the Extension Division of the State Agricultural College through its county club agents, who have personal touch with the applicants.

The amount loaned to any boy or girl does not exceed $100. When calves are purchased the note is made payable in two years, with the privilege of renewing it for six months if desired. In the case of loans for the purchase of pigs and chickens the notes are made payable in one year.

Written contracts are signed, interest at the rate of 6 per cent is paid, records of cost of production, etc., are kept, and in every respect the training is one that will make better business men and women of the young people who, by securing a loan, automatically become members of the New Jersey Junior Breeders' Association and also of the Boys' and Girls' Clubs conducted by the Division of Extension in the State Agricultural College. They are under the direct supervision of the county club agents, who assist in locating their animals and give instruction in production methods. Many of the breeders selling the animals also take an interest in the success of these young breeders and are willing to lend assistance wherever possible.

During the fiscal year ending June 30, 1923, eighty-one loans were made for the purchase of calves, the amount loaned being $6,365. There were twenty-one loans, amounting to $1,267.25, made for the purchase of pigs, and thirteen loans, amounting to $636.25, for the purchase of poultry. The total amount of money loaned since the fund was established in January, 1921, is $20,967.73. There is assurance on the part of the donors and friends of the association that the fund will be increased whenever necessary to meet the demand from young people who should become breeders of livestock.

INSURANCE AGAINST LOSS

An insurance fee of $1.00 is charged each boy or girl purchasing a calf or pig, and thus a mutual insurance fund is maintained to take care of any loss by death of an animal. This rate is exceptionally low, but the manager of the fund retained the right to make an assessment, not to exceed 4 per cent of the purchase price of the animals, in case this became necessary. No additional assessment has yet been made, although there is a deficit in the fund at present.

In the case of calves, precautions are taken against securing any tubercular animals by loaning money only for those which have been tuberculin tested or which are from an accredited herd or one under Federal and State supervision. This practice has been an inducement to the parents of some of the young people to rid their herds of tuberculosis in accordance with the accredited-herd plan of the Bureau of Animal Industry. The value of the fund to others than the members of the Junior Breeders' Association is shown also by the fact that in many instances parents are replacing grade animals with pure-breds.

INTEREST EARNED

The interest received from loans and from the balance in bank is used for some administrative expense and as awards at the Trenton Interstate Fair. While the prize-winning contests are only an incident to keep up a keen interest and friendly rivalry among the junior breeders, it might not be out of place to mention here that one boy during this fiscal year earned enough premiums at the state and county fairs to reduce his note more than half within six months from the date of his purchase. He has since paid more than half of the remainder of his note with money earned in other ways, and has secured an additional loan for the purchase of another animal. This case is mentioned only as one instance of the value of the fund in insuring the future of the livestock industry in New Jersey.

REPORT OF THE BUREAU OF STATISTICS AND INSPECTION

HARRY B. WEISS, *Chief*

Report of Statistical Service

The "New Jersey Crop Report" has been issued regularly each month and continues to carry information on New Jersey crops, as well as on conditions in the country at large. The "Barometric" part has been continued and enlarged, as conditions permitted, by the inclusion of items having barometric value. While some of the items carried, especially those on industrial and business conditions, do not appear to be closely connected with agriculture, it should be kept in mind that the industrial and business workers of the country are large and important consumers of farm products, and for this reason it is desirable for producers of such products to know something of business conditions in general. Moreover, business conditions are intimately connected with agricultural conditions, and crop production greatly influences business. It is for this reason that business barometers are included in the "New Jersey Crop Report." Only those items having a distinct value have been selected, and it is believed that as it now stands the report carries information on all of the important factors which influence business conditions. Beginning with the report of March, 1923, a barometric summary has been included, and in April the report was enlarged to six pages. During June facilities were obtained for securing information on truck crops, and beginning with the July, 1923, report an increasing amount of attention will be given to such items.

OTHER STATISTICAL WORK

During the year a survey of the cost of producing sweet potatoes in New Jersey was made in cooperation with the New Jersey Agricultural Experiment Stations, and this will be reported upon in a department circular.

BUREAU PUBLICATIONS

During the past fiscal year the following reports and circulars have been issued:

New Jersey Crop Report (eleven issues).
Circular 54—The Lace Bugs of New Jersey.
Circular 56—Work Against the Gipsy Moth in New Jersey.
Circular 58—Beetles of the Genera Saperda and Oberea Known to Occur New Jersey.

Report of Inspection Service

HARRY B. WEISS, *Chief*
THOMAS J. HEADLEE, PH.D., *State Entomologist*
MEL. T. COOK, PH.D., *State Plant Pathologist*

During the fiscal year ending June 30, 1923, 75 cases of foreign-grown nursery stock were inspected. Over 300 cases of bulbs, 126 cases of seeds and nuts and over 400 cases of foreign-grown stock imported under special permits were not inspected by state inspectors. The seeds and bulbs are not likely to carry serious pests, and all stock imported under special permit is inspected by the Federal Horticultural Board and a report of the inspection forwarded to the State Inspector. The 75 cases inspected consisted of roses and fruit

stocks and were clean in every instance. The origin of this stock was as follows:

Holland ..... 41 cases of rose stocks
England ..... 25 cases of rose stocks
France ..... 9 cases of fruit stocks

Total ..... 75 cases

DOMESTIC STOCK INSPECTED DURING FALL OF 1922

Fruit Stock

Origin	Inspections	Cases	Shipments Infested	Plants Destroyed
Alabama	2	9	1	49
Connecticut	4	5	3	147
Delaware	5	9	..	..
Maryland	7	11	..	..
New York	15	26	3	50
Ohio	2	4	..	..
Pennsylvania	2	7	..	..
Tennessee	7	8	3	26
Totals	44	79	10	272

Ornamental Stock

Origin	Inspections	Cases	Cars	Shipments Infested
Alabama	1	6	..	..
California	5	..	5	5
Connecticut	1	1	..	..
Massachusetts	2	7	..	..
New York	6	18	1	..
Ohio	8	49	..	..
Oregon	1	7	..	..
Pennsylvania	1	18	..	..
Totals	25	106	6	5

DOMESTIC STOCK INSPECTED DURING SPRING OF 1923

Fruit Stock

Origin	Inspections	Cases	Shipments Infested	Trees Destroyed
Alabama	9	19	2	75
Arkansas	1	1	1	20
California	1	3	..	..
Connecticut	11	13	8	226
Delaware	5	5	..	..
Georgia	1	1	..	..
Illinois	3	4	..	..
Indiana	1	1	..	..
Iowa	2	2	..	..
Kansas	3	4	2	224
Maryland	8	9	3	90
Missouri	8	10	2	384
New York	27	37	6	152
Pennsylvania	1	1	..	..
Ohio	4	9	..	..
Tennessee	6	6	..	..
Virginia	1	1	..	..
Totals	92	126	24	1171

The rejected trees were nearly all apples infected with crown gall.

Ornamental Stock

Origin	Inspections	Cases
California	5	313
Connecticut	11	14
Delaware	2	2
Florida	1	1
Missouri	3	3
New York	10	12
Ohio	1	1
Pennsylvania	2	3
Texas	1	1
Totals	36	350

NURSERY INSPECTIONS

Two hundred and forty-one nurseries and dealers' establishments were inspected and certificates issued as follows:

General certificates	156
Berry certificates	23
Greenhouse certificates	16
Rose certificates	6
Dahlia certificates	5
Peach certificates	5
Privet certificates	2
Lilac certificates	1
Dealers' certificates	27
Total	241

SPECIAL CERTIFICATES

Forty-one special certificates were issued, following inspection, to allow the shipment of small amounts of nursery stock to points outside of New Jersey. Twelve additional shipments were certified as apparently free from Japanese beetle larvae, to comply with the Florida and Mississippi inspection laws.

SPECIAL INSPECTIONS

Forty-two inspections were made following requests for information on various plant pests and diseases where a personal visit was essential.

WHITE PINE BLISTER RUST INSPECTION

Infestations Found Since 1916

Locality	1916	1917	1918	1919	1920	1921	1922	1923
Rutherford	15	9	0	0	0	0	0	0
Little Silver	*1	*1	0	0	0	0	0	0
Clementon	0	0	2	0	0	0	0	0
Eatontown	3	0	0	0	0	0	0	0
Red Bank	*1	*1	*4	*1	0	0	0	0
Millburn	1	0	0	0	0	0	0	0
Morristown	48	6	3	0	0	0	0	0
Blue Anchor	0	0	0	*1	*1	*1	*1	0
Pine trees infected	67	15	5	0	0	0	0	0
Currant plantings	*2	*2	*4	*2	*1	*1	*1	0

*Numbers starred refer to plantings of currants infected with rust. All other figures refer to number of individual pine trees infected.

As may be seen from the table, the only infection existing in the state last year was on currants at Blue Anchor. All but a few of these were removed, and the remaining plants were used for experimental purposes in cooperation with the United States Department of Agriculture. The project was to see if the disease could winter over on currants in New Jersey. Some of the bushes were covered with cloth and some were left bare. Both lots showed infection, though the uncovered bushes were much more severely attacked. Due to the fact that the cloth used became slightly porous on account of weather conditions, it was not definitely established that the infection came from the inside, but spores may have been beaten through by the rains. All the bushes at this point have now been removed and destroyed.

WHITE POTATO SEED INSPECTION AND CERTIFICATION

This work, conducted jointly by the New Jersey State Department of Agriculture and the New Jersey State Potato Association, was marked by various important changes during the fiscal year 1922-23. A decrease of 38 per cent in the number of acres certified, in spite of an increase of 16 per cent in the number of acres entered, was a result of changes in the standards set for certified seed. Another change required that fields entered for certification must be planted with pedigreed seed; that is, seed that was certified the previous season. Other seed might be entered for approval only, and passing approval (with the same standards as certified seed) might be entered for certification the following year.

The following tables give a resumé of the work:

CERTIFICATION

Variety	Entered		Rejected (acres)	Certified	
	Acres	Growers		Acres	Growers
Irish Cobbler	658.50	81	402.75	255.75	41
American Giant	79.50	12	67.50	12.00	2
Green Mountain	13.00	7	3.50	9.50	7
Norcross	11.00	2	.00	11.00	2
Red Skin	.25	1	.25	.00	0
	762.25	82	474.00	288.25	44

APPROVAL

Variety	Entered		Rejected (acres)	Certified	
	Acres	Growers		Acres	Growers
Irish Cobbler	323.33	41	256.08	67.25	11
American Giant	16.00	2	16.00	.00	0
Mill's Pride	4.00	1	4.00	00	0
Red Skin	.33	1	.33	.00	0
	343.66	43	276.41	67.25	11

The relative importance of the various causes for failure of fields at the various inspections is indicated in the following tables:

FIELDS ENTERED FOR APPROVAL

Cause	First Field Inspection, Per Cent	Second Field Inspection, Per Cent	Tuber Inspection, Per Cent	Per Cent of Total Rejections
Leaf Roll	25	59	..	32
Mixture	75	8	..	55
Mosaic	..	13	..	3.5
Weak Hills	..	20	..	4
Scab	..	..	66	3.5
Rhizoctonia	..	..	34	2
	100	100	100	100

FIELDS ENTERED FOR CERTIFICATION

Cause	First Field Inspection, Per Cent	Second Field Inspection, Per Cent	Tuber Inspection, Per Cent	Per Cent of Total Rejections
Leaf Roll	61	74	..	64.75
Varietal Mixture	27	9	..	13.50
Mosaic	12	17	..	13.50
Scab	..	..	47.5	4.00
Rhizoctonia	..	..	45.0	3.75
Off Type	..	..	7.5	.50
	100	100	100	100

SEED SWEET POTATO INSPECTION AND CERTIFICATION

During the fiscal year ending June 30, 1923, 256 acres of sweet potatoes were entered for certification by 51 growers from Atlantic, Cumberland and Ocean counties. These figures, as compared with those of the previous year, when 24 growers in Atlantic County entered 101 acres, indicate a healthy growth of interest in the work. The following tables summarize the work by county and variety:

SUMMARY OF WORK

Variety	Entered		Rejected (acres)	Certified	
	Acres	Growers		Acres	Growers
Yellow Jersey	202.5	51	22.5	180	32
Big Stem Jersey	45	17	1	44	17
Jersey Red	7	5	3.25	3.75	3
Gold Skin	.575	3	.5	.075	2
Yams	.85	3	.25	.6	2
	255.925	51	27.5	228.425	40

DISTRIBUTION ACCORDING TO COUNTY

Variety	Atlantic		Ocean		Cumberland		Totals	
	Acres	Growers	Acres	Growers	Acres	Growers	Acres	Growers
*Yellow Jersey	122.25	33	54.25	16	26	2	202.5	51
†Yellow Jersey	104.75	15	49.25	15	26	2	180	32
*Big Stem Jersey	33	12	12	4	0	0	45	17
†Big Stem Jersey	32	13	12	4	0	0	44	17
*Jersey Reds	6	4	1	1	0	0	7	5
†Jersey Reds	2.75	3	1	1	0	0	3.75	4
*Gold Skin	.50	1	.075	2	0	0	.575	3
†Gold Skin	0	0	.075	2	0	0	.075	2
*Yams	.50	1	.35	2	0	0	.85	3
†Yams	.25	1	.35	2	0	0	.60	2
Entered	162.25	33	67.675	16	26	2	255.925	51
Certified	139.75	25	62.675	13	26	2	228.425	40

*Entered. †Certified.

Most of the rejections at the field inspections were due to stem rot and varietal mixture, while at the bin inspection black rot and storage rots were the causes of failure.

TOMATO SEED CERTIFICATION

During August 35 fields, totaling 325 acres, were entered for certification and were inspected. Twenty-three fields, with a total of 199½ acres, were certified as follows:

Bonny Best	87 acres,	10 fields
Greater Baltimore	112½ acres,	13 fields
	199½ acres,	23 fields

WORK OF SPECIAL INSPECTION FORCE

This force is engaged mainly in making gipsy moth inspections in various parts of New Jersey, and the following statements summarize its activities during the fiscal year ending June 30, 1923.

All nursery stock consigned to New Jersey from the New England States was inspected, and during the course of this work 13 infestations were intercepted. The details of these findings are given in the following table:

Consignee	*Consignor*	*Date Shipped*	*Date Inspected*	*Infestations*
F. C. Smith, 123 Murry Ave. Ridgewood, N. J.	American Forestry Co., Framingham, Mass.	5/ 2/23	5/25/23	Untreated hatched egg mass on arbor vitæ
C. A. Rucker, 107 E. 39th St., Paterson, N. J.	American Forestry Co., Framingham, Mass.	4/25/23	5/10/23	One untreated egg mass. Numerous larvæ, first stage
G. E. Marshall, Towaco, N. J.	American Forestry Co., Framingham, Mass.	4/25/23	5/23/23	One egg mass, badly broken
F. G. Redmond, 64 Garfield Ave., Madison, N. J.	American Forestry Co., Framingham, Mass.	2/26/23	5/16/23	One egg mass untreated, badly broken

E. Collins, 10 Malone Ave., Belleville, N. J.	American Forestry Co., Framingham, Mass.	4/19/23	5/10/23	One egg mass. Large number of hatching larvæ
Ed. O. Thompson, 61 Maple Ave., Maplewood, N. J.	American Forestry Co., Framingham, Mass.	5/ 1/23	5/ 8/23	One untreated egg mass
Delfred Gardens, Rochelle Pk.,N.J.	Boxford Nurseries, Boxford, Mass.	5/ 1/23	5/25/23	One old hatched but untreated egg mass
K. Keller, 20 Beacon Road, Summit, N. J.	American Forestry Co., Framingham, Mass.	4/18/23	5/15/23	Four treated egg masses. One untreated egg mass
A.E.Storetenburgh, 73 Westville Ave., Caldwell, N. J.	American Forestry Co., Framingham, Mass.	5/ 7/23	5/25/23	One broken egg mass and a number of small larvæ, second stage
Oradell Nursery Co. H.J.Ware, Prop., Oradell, N. J.	American Forestry Co., Framingham, Mass.	4/30/23	5/14/23	One egg mass on spruce
G. E. Fox, 86 WoodsideAve., Ridgewood, N. J.	American Forestry Co., Framingham, Mass.	5/12/23	5/25/23	One small untreated egg mass
E. H. Anderson, 442 N. Eng. Ter., Orange, N. J.	American Forestry Co., Framingham, Mass.	4/23/23	5/22/23	One egg mass, untreated, badly broken in transit
Mr. Rines, 415 Rock Road, Glen Rock, N. J.	American Forestry Co., Framingham, Mass.	4/18/23	5/10/23	One untreated egg mass
W. H. Fleming, 80 High St., WestOrange,N.J.	American Forestry Co., Framingham, Mass.	4/ /23	5/14/23	Eight caterpillars on spruce, first stage.

Unless some satisfactory plan can be worked out by the inspection officials and nurserymen of the New England states whereby such infestations can be prevented, it will be necessary to place a quarantine on all nursery stock from the gipsy moth area of New England.

In addition to the inspection of New England stock, sections of the following towns were scouted for gipsy moth: Cranford, Westfield, Rutherford, West Orange, Newark, Orange, Oradell, Scotch Plains, Bergenfield, Ridgefield, Mountain Lakes and Mount Vernon. Each of these towns had received nursery stock from New England on which the gipsy moth in some form was intercepted last year, and ten city blocks were scouted around each former infestation.

Regular scouting in crew formation was done in the following towns, and in some cases such scouting included very large areas outside of each town: Swedesboro, Salem, Woodstown, Vineland, Millville, Bridgeton, Cape May, Cape May Court House, Wildwood Crest, Bennett, Rio Grande, Ocean City, Somers Point, Pleasantville, Augusta, Branchville, Atlantic City, Lafayette, Netcong, Newton, Andover, Franklin and Sussex. About 30 miles of roadsides were scouted, the width varying from one-fourth to one-half mile on each side. Parks and cemeteries were scouted in Camden, Burlington, Gloucester and Atlantic counties. During a short time in the summer corn borer scouting was done, mainly in Bergen, Burlington and Camden counties, although a few inspections were made in all the counties of the state.

SUMMARY

New England inspections	1059 (including six carload lots)
Foreign inspections	15
Domestic inspections	4
Special inspections	41
White pine blister rust inspections	23
Cemeteries scouted	355 acres
Parks scouted	68 acres
Corn borer scouting	9422 acres

THE GIPSY MOTH*

Gipsy moth extermination work was conducted along lines previously laid down. Scouting was done over the entire territory, with the result that some 98 colonies, consisting of 1,182 egg masses, were found. This indicates encouraging progress.

The results of this year's work, together with figures for previous years, are shown below:

	First Year	Second Year	Third Year
Number of colonies found	855	216	98
Number of egg masses	3,003,039	909	1,182

The main point to be considered is the reduction in the number of colonies. The infestation at present is confined mainly to Somerset County, and the infested area is considerably smaller than that of last year. Spraying was done wherever egg masses were found, and in addition to the eleven state-owned machines, twelve federal machines operated in the territory, making 23 in all. The Pennsylvania Railroad very kindly furnished a barge upon which a sprayer was mounted for work along the Delaware and Raritan Canal between Millstone and South Bound Brook. Excellent spraying weather prevailed, and the arsenate of lead was baked upon the foliage by the high temperatures. About 100 tons of arsenate of lead were used, 20 tons of which were mixed with approximately five tons of 16 per cent gluten flour as a sticking agent. Laboratory experiments made by Doctor Headlee indicated that the addition of a high per cent gluten flour would give just as satisfactory results as the more expensive patented preparations on the market. Owing to the extremely dry season no conclusive field evidence was obtained.

A considerable amount of cutting and chopping work is done in the infested territory each year. Partly dead trees with broken limbs, cavities and loose bark, which afford hiding places for the egg masses, are cut down whenever permission can be secured from the owners, and such permission is usually given. A lot of chopping work was done the past year along the Millstone River and the Delaware and Raritan Canal between Blackwell's Mills and Griggstown. This section contained impenetrable growths of wild hawthorne which could not be scouted, and along the banks of the river were numerous loose-barked, river-birch trees, many of which grew out over the river. All this section was cleaned up during cloudy days and at other times when scouting work was impossible. Owners were glad

*Conducted in cooperation with U. S. Bureau of Entomology.

to cooperate in this work and secure the wood, and the Pennsylvania Railroad kindly gave permission for the work to be done along the canal right-of-way. Trees along the river bank were cut by hand, while a tree-sawing machine was used on the others. In order that there would be no danger of the banks washing, stumps several feet high were left. Much of this territory serves as pasture land for cattle.

In addition to the scouting and creosoting of egg clusters, numerous trees were banded with burlap and tree-banding material. Approximately five tons of tree-banding material and 20,000 yards of burlap were used. The number of gipsy moth larvae killed beneath bands, etc., during the year was 1,666, distributed as follows:

Bridgewater Township:		
July-August, 1922	25	
May-June, 1923.	208	
		233
Franklin Township:		
July, 1922	1	
May-June, 1923	210	
		211
Hillsboro Township:		
July, 1922	11	
May-June, 1923	1162	
		1173
South Brunswick Township:		
July, 1922	8	
		8
Warren Township:		
June, 1923	41	
		41
		1666

The success of the work so far is due mainly to the support which has been given by the Legislature in making sufficient appropriations and to the Governors for approving items for such work. If continued support is given, the outlook for extermination is bright, especially in the level country. The situation in the Watchung Mountains and the territory north of these ranges is giving the Department some concern on account of the large acreage to be scouted and the cost of such work. The infestation is this section appears to be light, but nevertheless the insects are there and capable of multiplying unless enough work is done to prevent it.

If allowed to spread the destruction which took place in the New England States, and especially in Massachusetts, would be repeated in New Jersey. Forest holdings, estates, private and public parks, plantings, shade and orchard trees and even farm crops would be destroyed. While the pest is capable of being killed by poisons and other exterminative measures, the immense numbers of caterpillars which appear at one time, together with the expensive machinery, equipment and organization necessary to fight the moth, make it impossible for individual property owners to work against the pest successfully.

GIPSY MOTH STATISTICS

Number of Men Employed Throughout the Year

July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June
92	76	115	88	153	309	334	423	383	331	374	473

Total number of miles scouted	2,256
Number of apple and other fruit trees scouted	1,012,599
Shade trees scouted	1,240,118
Acres of woodland scouted	22,972
Acres sprayed	4,415
Trees sprayed	10,369
Number of egg masses found	1,182
Number of burlap bands applied	15,056
Number of trees banded with tree-banding material	27,911
Number of larvae killed beneath bands, etc.	1,666
Amount of arsenate of lead used (tons)	100

Quarantine Work

Nothing was found to warrant the continuance of our quarantine on nursery stock in the infested area, as the few nurseries were scouted several times with negative results. All outgoing stock was inspected for several years, also with negative results. In view of this, inspectors were withdrawn and the quarantine lifted. This does not apply to sawmills, lumber yards, etc., in the infested area, nor to shipments of stock from the Duke estate. Such inspection work will be taken care of in the future by the general foreman as occasion demands.

EXPENDITURES DURING FISCAL YEAR 1922-1923

State appropriation		$125,000.00
Labor.	72 per cent	
Supplies, arsenate of lead, flour, etc.	21 per cent	
Office expense, rentals, insurance, etc.	3 per cent	
Travel.	4 per cent	
	100 per cent	
Federal expenditure in New Jersey for labor, supplies, field supervision, etc.		167,255.57
Total amount expended		$292,255.57

REPORT ON JAPANESE BEETLE WORK*

Quarantine Enforcement

The regulations provided by Federal Quarantine No. 48, as well as by Pennsylvania and New Jersey quarantine orders, have been enforced during the past year. This work included the inspection of farm products, particularly corn, cabbage, lettuce and grapes, on the farm before shipment, as well as the inspection and certification of soil, compost, manure, and general nursery ornamental and greenhouse stock. More than 483,000 baskets of corn were inspected and many thousands of beetles removed from the corn before shipping certificates were given. The inspection of nursery, ornamental and greenhouse products has been carried on throughout the year.

*By C. H. Hadley, Entomologist in charge. Work conducted in cooperation with the Federal Government and State of Pennsylvania.

Scouting to determine the limits of infestation has also been carried out by this division. At the beginning of the season of 1922 the infested area covered some 270 square miles, while at the close of the beetle season of 1922 the infested area covered some 770 square miles, an increase in infested territory of about 200 per cent. It is believed that this increase is the result of normal spread of the insect, since in no case was an infestation found at any great distance from the main infested territory, although very careful scouting was carried on for some distance outside the infested and adjacent territory.

Biological Investigations

A great deal of additional data has been accumulated in connection with the life-history studies, including also the status of the reaction of the insect to environmental conditions.

The relationship existing between common farm practices in the community and infestation by the insect has also been carefully studied, with the conclusion that, in general, common farm practices are favorable for the continued well being of the insect. Modification of farm practice in certain respects might have a somewhat unfavorable effect upon the insect, but in general there seems to be no specific change which might be recommended to seriously discommode the pest. Extremely late fall plowing and late spring plowing has some effect in reducing the number of grubs in the ground, but such plowing cannot be done at a time to give the best results in so far as reduction of numbers of grubs is concerned without conflicting quite seriously with established farm practices.

One of the main lines of work of this division has to do with the importation and distribution of foreign parasite material. Several shipments of beneficial parasites have been received during the past fiscal year from Japan, Korea and Hawaii. In the case of several species, colonies have been released in the field with good reason to believe that at least some may be able to survive field conditions, but it is as yet too early to make any statement as to the success of the endeavors.

A detailed study has also been carried on to determine what possible native parasites may be working on the Japanese beetle. Evidence has been secured showing that a number of native species attack the Japanese beetle to a greater or less extent, but as yet the sum total of such native parasitism does not exceed, at the outside, a very small percentage of the total number of beetles. It is obvious that these results are merely indicative of the fact that native parasitic species are now working to a slight extent upon the Japanese beetle, and that it is possible as time goes on that the native parasites may become increasingly effective against the beetle. This should not be taken to mean, however, that they will be able to control the situation; it is the belief of those engaged in the work that native parasites will never be able to come at all close to controlling the situation, but that foreign parasites must be imported and established in large numbers before any appreciable natural control of the insect is secured.

During the past year an intensive investigation has been made of the effect of fungous and bacterial diseases upon the Japanese beetle, particularly in the larval stage. Several bacterial diseases have been isolated from dead or dying Japanese beetle grubs and cultures made. From these cultures, attempts have been made to inoculate healthy grubs, both in the laboratory and in the field, to determine to what extent it may be possible to reduce the grub infestation by the artificial dissemination of spores of fungous or bacterial diseases. In this connection a species of Isaria from France has been cultured, and attempts have been made to artificially disseminate the disease in heavily infested pastures. It is as yet too early to determine the success of any of this work, but we may fairly say that there is some promise of success for the future in the dissemination of bacterial diseases of the grubs.

An intensive study has been made of the effect of replacing the soil-ball of coniferous nursery stock with an artificially made-up ball of soil free from grub infestation. Results so far indicate that a very fair proportion of plants thus handled will come through the second season after treatment quite satisfactorily, and this method gives promise of having a practical application in connection with the shipment of nursery stock of this character from infested nurseries. Additional data are needed, however, before this fact can be established to the satisfaction of all concerned.

Beetle Insecticide Investigations

Substantial progress has been made during the past fiscal year in connection with the study of the effect of insecticides on the beetles. Very good success was obtained during the season of 1922 by the use of arsenate of lead at the rate of 4 pounds of the powder to 50 gallons of water, with 2 pounds of flour or "Kayso" as a spreader and sticker. Usually one or, in some cases, two such applications were sufficient, when applied carefully and thoroughly, to carry the foliage through the beetle season with little or no injury from the beetle. The relative kill resulting from the use of this material at this strength was not so high as was hoped for, however, and during the present season this work has been continued with such modifications as the experience of last season suggested, in the hope that a satisfactorily high kill can be secured, with reasonable protection of the foliage at the same time.

A great many combinations of other materials have been tried out in the hope of finding a substitute for arsenic for use against the beetle, with, however, not very much success. Many materials and combinations of materials have been tested and eliminated from further consideration in connection with this work, and several leads of apparent value are now being followed up. A great deal of information has been secured on the effect of high concentration of arsenic, in the form of arsenate of lead, upon foliage of different types of trees in midsummer, including both fruit and shade trees. Considerable data have also been secured upon the effect of weather conditions upon the spray-coat on foliage.

A great deal of large scale spraying in the field was carried out in connection with the experiments of this division, in cooperation with the field division.

Grub Insecticide Investigations

Substantial progress has been made in the perfection of methods and treatment of infested outdoor-grown nursery stock. Practically all of this class of stock handled by local greenhouses within the infested territory, after having been treated in accordance with methods worked out at the laboratory and under the supervision of members of this staff, has been certified for shipment outside of the quarantined area as being free from infestation. No one treatment of universal application has been worked out, but several methods of treatment have been devised to meet the varying conditions.

Some progress has been made also in the treatment of nursery stock which is commonly shipped with the soil-ball, but there is still room for considerable improvement in these methods.

Methods for the treatment of soil in which infested or non-infested nursery stock may be heeled in have been worked out to a very satisfactory degree. The use of arsenate of lead worked thoroughly into the soil has been tested very thoroughly, with quite satisfactory results. It is now necessary to subject a hundred or more different varieties of stock commonly handled by nurserymen and greenhouse men to this kind of treatment to determine the tolerance of different plant varieties to soil treated with arsenate of lead.

For the treatment of infested grass lands, such as greens and fairways on golf courses and lawns, a method has been devised for use of carbon bisulfide emulsion so as to reduce the grub population from 60 to 75 per cent or more at a reasonable cost. This work requires further testing, however, before it can be generally recommended to the public, and this additional experimenting is now under way. The method seems to be quite practical, and it is believed can be perfected to a point where it can be generally recommended with full assurance that if the directions are followed carefully entirely satisfactory results will be secured.

Field Division

The work of this division covers, in general, the care and maintenance of all of the mechanical equipment used in connection with all phases of the beetle work. The care of the comparatively large number of machines of different types used in the various phases of the work requires the services of several men throughout the entire year. In addition, this division has been responsible for the conduct of the large scale spraying work during the beetle season, working in close cooperation with the beetle insecticide division.

Funds Available

During the past fiscal year funds supporting the beetle work as a whole have come from three sources, as follows:

Available from Federal Government...$100,000.00
Available from State of New Jersey.. 10,000.00
Available from State of Pennsylvania 15,000.00 (for biennium 1921-1922)

Report of the Bee Inspection Service

HARRY B. WEISS, *Chief*
THOMAS J. HEADLEE, *State Entomologist*
ELMER G. CARR, *Deputy to the State Entomologist in Bee Inspection*

The work of bee disease control for the fiscal year has been prosecuted under four heads, viz.: law enforcement, educational, stock improvement and statistical.

I. The law enforcement work consisted of the examination of known or suspected infected apiaries, and supervision of the disease control work of the beekeeper.

II. Since larger returns from beekeeping make owners more willing and anxious to combat disease, no opportunity is lost to educate beekeepers in the principles of profitable bee husbandry. Therefore, lectures were delivered, and exhibits, demonstrations and schools for beekeepers were held.

III. Much of the bee stock of the state is inferior, both in regard to productivity and resistance to European foulbrood. An effort is being made to correct this unfavorable condition by inducing beekeepers to introduce strains of bees known to be good, and also by propagating disease-resistant and highly productive stock in the state apiaries at New Lisbon and Lebanon.

IV. Through the collection of statistics an effort is being made to learn the true value of bee products in the state. The data thus gathered will also serve to show where there is the most need for readjustment of beekeeping practices.

LAW ENFORCEMENT

There are two outstanding encouraging features of the law enforcement part of bee disease control. These are the generally good cooperation of beekeepers having disease in their apiaries, together with the numerous requests for inspection, and the splendid results secured by those who have faithfully carried out the instructions of the Department.

INSPECTIONS

During the year 161 apiaries, containing 2,263 colonies of bees, were examined. Sixty-six of these were in a type of hive which did not admit of detailed examination. All others were in movable comb hives. Two hundred and twenty-one cases of American foulbrood were found, or approximately 10 per cent. There were 119 cases of European foulbrood, or approximately 5 per cent. Twenty-eight cases of sacbrood were found. The percentage of infected colonies may seem high, but it should be borne in mind that inspections were made largely where disease was suspected or known to exist, barring queen-rearing apiaries.

OBSCURE BEE DISEASE

During July and August, 1922, 105 cases of an unknown brood trouble were discovered in the vicinity of Westfield, Sterling, Orange and Allendale. This disease did considerable damage, but eventually disappeared without treatment. No clue to the cause was found.

INFECTED WINDOW DISPLAYS

A honey-distributing concern was found to be making use of window displays of living bees throughout the northeastern part of the state, and it was discovered that these displays were made up of infected material. Steps have been taken to stop this practice of using infected material and thus to check a possible source of spread of bee disease.

QUEEN REARERS' CERTIFICATES

To prevent spread of bee disease through the shipment of queen bees, queen rearers' apiaries were examined, found free of disease and certificated as follows:

July 17, 1922—Robert B. Spicer, Wharton, Morris County.
July 27, 1922—Albert G. Hann, Glen Gardner, Hunterdon County.
August 7, 1922—J. Field Garretson, Bound Brook, Somerset County.
May 15, 1923—R. B. Spicer, Wharton, Morris County.
May 29, 1923—J. Field Garretson, Bound Brook, Somerset County.
June 2, 1923—Albert G. Hann, Glen Gardner, Hunterdon County.

INTERSTATE SHIPMENTS

To comply with the legal requirements, certificates for interstate shipments of bees were issued to Evan Jones, R. F. D. 6, Trenton, Mercer County; Herman Greenwald, Lumberton, Burlington County, and Henry F. Schaar, Roselle, Union County.

STERILIZING FLUIDS

For sterilizing contaminated beekeeping apparatus two fluids have been widely advertised in the apicultural press. One of these has formalin for the sterilizing agent and the other sodium hypochlorite as the active ingredient.

At a conference with Doctor Headlee, State Entomologist, and Mr. Hutson, Assistant Entomologist in Charge of Bee Culture Investigations, it was decided that neither of these fluids could be recommended generally to the beekeepers of New Jersey who have occasion to combat bee disease. Probably only a very small per cent would be sufficiently careful in the use of these fluids to get satisfactory results.

BEE IMPORTATIONS

The deputy bee inspector went to Washington, D. C., to attend a conference of bee disease control officials to take such steps as seemed advisable to guard against the introduction of a very destructive European adult bee disorder caused by the mite *Acarapis Woodii*. Regulations were drafted, which later were put into effect, to prohibit the importation of honey bees into the United States from Europe except under such restrictions as it is hoped will properly safeguard American beekeeping against this mite.

POISONING TESTS

Much damage has been done to adult bees in certain parts of the state, and poisoning was suspected as the possible cause of this loss. In an effort to get a clue to this trouble by causing similar symptoms, if possible, two colonies of bees were taken to the plains in Burlington County, where no natural food was available, and were fed a syrup of granulated sugar and water in which had been placed a known quantity of arsenic. One colony could be induced to take but a small amount of the syrup, while the other took the feed readily. No abnormal symptoms developed.

EDUCATIONAL

Through the cooperation of the State Department of Agriculture, the New Jersey Beekeepers' Association, the Essex County Beekeepers' Society, the county farm bureaus and the Agricultural Experiment Station, the following educational projects have been carried out:

ANNUAL BEEKEEPERS' CONVENTION

During "Agricultural Week," January 15-20, 1923, the annual two-day convention of the New Jersey Beekeepers' Association was held, with an attendance of 170.

SHORT COURSE IN BEE HUSBANDRY

A short course in bee culture was held at New Brunswick, February 26 to March 3, 1923, under the supervision of the Director of Short Courses in Agriculture. Nineteen students were in attendance.

DEMONSTRATIONS AND FIELD MEETINGS

Demonstrations and field meetings for beekeepers were held as follows: July 8, 1922, in Mr. C. C. Calhoun's apiary, at Princeton, Mercer County, attendance 65; August 10, 1922, in the apiary of Mr. George Campbell, Jr., at Newfoundland, Morris County, attendance 100; August 19, 1922, in Mr. Richard D. Barclay's apiary, at Pattenburg, Hunterdon County, attendance 26; September 9, 1922, in Mr. J. Schweitzer's apiary, South Stirling, Union County, attendance 78; September 16, 1922, in Mr. J. Field Garretson's apiary, at Bound Brook, Somerset County, attendance 30; May 22, 1923, in Mr. Richard Van Gelder's apiary, Quarryville, Sussex County, attendance 19; May 22, 1923, in Mr. Arthur Clark's apiary, at Colesville, Sussex County, attendance 20; May 25, 1923, in Mr. Andrew Prall's apiary, at Ringoes, Hunterdon County, attendance 16; June 1, 1923, in Mr. A. S. Lupton's apiary, at Shiloh, Cumberland County, attendance 21.

SCHOOLS

One-day schools for beekeepers were held at Sussex and Newton, Sussex County, with 15 and 17, respectively, in attendance.

PUBLICATIONS

The former edition of "A Manual of Bee Husbandry" had become exhausted and this was rewritten, the subject matter brought up to date both in reference to bee disease control and profitable beekeeping practices, and issued as Circular No. 53 of the Department of Agriculture. This circular was mailed to the 3,000 odd beekeepers of the state now on the mailing list. Many beekeepers have written expressing their appreciation of the helpfulness of this circular.

LECTURES

A lecture was given at the April, 1923, meeting of the Essex County Beekeepers' Society at Kearny, on "Damage to Bees by Poisonous Sprays and Dusts." The attendance was 14. At a Washington Valley Community Meeting (Morris County) a lecture was given on "Preparation of Bees for Outdoor Wintering." The attendance was 53.

EXHIBITS

An educational exhibit of beekeepers' apparatus was set up and maintained at the Sussex County Fair, at Branchville, in September, and an unusually elaborate one at the Armory, Trenton, during "Agricultural Week." A bee float was entered in the parade at Franklin, Sussex County, in May, which was witnessed by 5,000 people. These exhibits do much to bring better beekeeping practices to the attention of bee owners.

The meeting of the Ontario Beekeepers' Association held at Toronto in December was attended by the deputy bee inspector, and some helpful information was gained which will be used for the benefit of New Jersey beekeepers.

IMPROVED STOCK

The satisfactory control of European foulbrood in bees is very largely dependent upon the use of good Italian stock. Italian bees are reputed to show greater resistance to this disease than the bees of the darker races. Beekeepers have been urged to use good Italian stock. The breeders of Italian queens in America are doing the best they can under the circumstances to furnish disease-resistant stock, but the financial reward is quite inadequate to enable them to carry on extensive breeding experiments. To facilitate work in this direction an apiary was established at New Lisbon, Burlington County, to propagate queens from disease-resistant stock, and another at Lebanon, Hunterdon County, in which to test for productivity. Through the activities of the members of the New Jersey Beekeepers' Association an appropriation was secured from the 1922 Legislature to be used under the direction of the New Jersey Agricultural Experiment Station to carry on the work in these two apiaries, as well as to study the value of bees as fruit-blossom pollinators and to study some problems of obscure bee disorders in the state. Mr. Ray Hutson was assigned to this work August 1.

Some well-known strains of bees have been tested at New Lisbon without showing any decided value in resisting disease. Other strains are now being tested.

STATISTICS

Very little reliable information is available regarding the value of bee products of New Jersey. The mailing list of beekeepers is in need of revision. To meet these conditions as fast as is practical and still keep the other lines of bee work well in hand, a survey of the state is being made. Work along this line has been done in Atlantic, Cape May, Cumberland, Gloucester, Mercer, Middlesex, Monmouth, Ocean and Union counties.