

Letter of Transmittal.

To the Hon. Woodrow Wilson, Governor of New Jersey:

SIR—In accordance with the act creating the State Board of Agriculture, adopted April 22d, 1884, and with the provisions of the law approved June 15th, 1895, I have the honor to present the report of said board for the year 1911.

FRANKLIN DYE,

Secretary.

Dated Trenton, December 26th, 1911.

NEW JERSEY STATE LIBRARY

State Board of Agriculture.

OFFICERS AND EXECUTIVE COMMITTEE FOR 1912.

PRESIDENT.

JOS. S. FRELINGHUYSEN,Somerville, N. J.

VICE-PRESIDENT.

JOHN T. COX,Three Bridges, N. J.

SECRETARY.

FRANKLIN DYE,Trenton, N. J.

TREASURER.

A. J. RIDER,Hammonton, N. J.

GEORGE E. DeCAMP,Roseland, N. J.

THEODORE BROWN,Swedesboro, N. J.

J. HARVEY DARNELL,Masonville, N. J.

STATE CHEMIST.

CHAS. S. CATHCART,New Brunswick, N. J.

STATE BOARD OF AGRICULTURE.

NAME.	ADDRESS.	TERM.	COUNTY
PROF. H. W. GELLER,....	Woodbine,	1 year.	Cape May.
ARTHUR SEABROOK,.....	Bridgeton,	2 years.	Cumberland.
JACOB ZIMMERMAN,.....	Millville,	1 year.	"
H. F. HARRISON,.....	Caldwell,	2 years.	Essex.
GEORGE M. CANFIELD,....	Caldwell,	1 year.	"
WM. GLEASON,.....	Swedesboro,	2 years.	Gloucester.
AMOS KIRBY,.....	Mullica Hill,.....	1 year.	"
F. J. TOMLINSON,.....	Pittstown, R. F. D. 1, ..	2 years.	Hunterdon.
ROSCOE DEMOTT,.....	Stanton,	1 year.	"
N. F. WOODWARD,.....	Pennington, R. F. D., ..	2 years.	Mercer.
JOHN W. HENDRICKSON,...	Trenton, R. F. D. 1, ..	1 year.	"
WM. H. CLARK,.....	Stelton,	2 years.	Middlesex.
LEWIS D. WALKER, JR.,..	New Market,	1 year.	"
FRANK P. JONES,.....	Freehold,	2 years.	Monmouth.
JOHN H. DUBOIS,.....	Freehold,	1 year.	"
E. S. YOUNG,.....	Rockaway,	2 years.	Morris.
EDGAR C. HOPPING,.....	Florham Park,.....	1 year.	"
CLINTON F. RORER,.....	Cassville,	2 years.	Ocean.
R. C. GRAHAM,.....	Holmeson,	1 year.	"
FRANK T. TORBET,.....	Paterson, R. F. D. 1, ..	2 years.	Passaic.
EDW. VAN HOUTEN,.....	Paterson, R. F. D. 1, ..	1 year.	"
MAXWELL BUSBY,.....	Woodstown,	2 years.	Salem.
JOHN RIDGEWAY,.....	Hancock's Bridge,	1 year.	"
J. D. QUICK,.....	South Branch,	2 years.	Somerset.
GEO. B. RANDOLPH,.....	Bound Brook, R. F. D., ..	1 year.	"
J. E. DICKERSON,.....	Branchville, R. F. D. 2, ..	2 years.	Sussex.
LINUS CLARK,.....	Branchville, R. F. D. 2, ..	1 year.	"
E. R. COLLINS,.....	Westfield,	2 years.	Union.
HART S. VAN FLEET,....	Roselle,	1 year.	"
CHAS. M. OBERLY,.....	Phillipsburg,	2 years.	Warren.
JAMES I. COOK,.....	Hope,	1 year.	"

OTHER ASSOCIATIONS.

ALFRED DARNELL,.....	Mount Laurel Farmers' Club.
J. D. HOLMAN,.....	Titusville,
EZRA EVANS,.....	Marlton,
J. H. M. COOK,.....	Essex Fells
CHAS. S. VAN NUIS, New Brunswick,	E. B. Voorhees' Agricultural Club.

PROCEEDINGS
OF THE
THIRTY-NINTH ANNUAL MEETING
OF THE
NEW JERSEY STATE BOARD OF AGRICULTURE
HELD AT THE
STATE HOUSE, TRENTON, NEW JERSEY
Wednesday, Thursday and Friday,
January 17, 18, and 19, 1912.

STATE BOARD OF AGRICULTURE

Thirty-Ninth Annual Meeting

FIRST DAY—MORNING SESSION.

Wednesday, January 17th, 1912.

The thirty-ninth annual meeting of the Board was called to order at 10:30 o'clock A. M. by President Frelinghuysen. Rev. Dr. Wight offered prayer.

President Frelinghuysen—The next business before the Board is the calling of the roll by the Secretary.

The Secretary then called the roll and the following delegates were found present: (See list Board of Directors.)

President Frelinghuysen—The Secretary will present the Order of Business.

Secretary Dye—Most of you gentlemen have a copy of the programme. I wish to offer this as the Order of Business, with one amendment, that is, at 2:30 o'clock to-day we will have a short address by Dr. Demarest, of New Brunswick, as a memorial to our late President, Dr. E. B. Voorhees. That has been arranged since the programme was printed. I trust that will meet with the approval of the Board, and with that exception the programme will stand, so far as I know, as printed. I do not know of any speakers who will not be here. I move the adoption of the programme.

President Frelinghuysen—You have heard the motion of the Secretary; is it seconded, that the order of business be adopted as amended?

This motion was adopted.

STATE BOARD OF AGRICULTURE.

ORDER OF BUSINESS.

January 17th, Wednesday.

FIRST SESSION.

- 10:30 A. M.—12:30 P. M.—Prayer.
Calling Roll of Delegates. All delegates are requested to be present at the opening session.
Presenting Order of Business.
Minutes of Last Meeting.
Announcing of Committees Appointed:
 On Credentials.
 On Resolutions.
 On Treasurer's Accounts and any other Committees.
- 11:30 A. M.—Reading of Executive Committee's Report.
Report of State Grange, Hon. G. W. F. Gaunt, W.M.
Report of Treasurer, Prof. A. J. Rider.
Report of Secretary of State Board.
Report of Committee on Transportation and Freight Rates, E. R. Collins, Chairman.

SECOND SESSION.

- 2:00—5:00 P. M.—Calling Roll of Absentees and Report of Committee on Credentials.
Message from the Governor, Hon. Woodrow Wilson.
- 2:30 P. M.—Memorial to Dr. Edward B. Voorhees—Dr. W. H. S. Demarest.
Calling Roll of Delegates and appointment of a Committee consisting of one member from each county duly represented, to nominate officers for the ensuing year (the members present from each county naming their members of this committee). Committee will report when ready.
- 3:00 P. M.—Address of the President of the Board, Hon. Joseph S. Frelinghuysen.
- 4:00 P. M.—New Jersey Agriculture: Its Problems and their Solution. Dr. Jacob G. Lipman, Director State Experiment Station, New Brunswick, N. J.

THIRD SESSION.

- 7:30 P. M.—The Farmer's Share of the Consumer's Dollar. Dr. H. W. Collingwood, Editor *Rural New Yorker*.
- 8:30 P. M.—Farm Management. (Illustrated by stereopticon views.) Prof. G. F. Warren, Cornell University, Ithaca, New York.

January 18th, Thursday.

FOURTH SESSION.

- 9:30 A. M.—12:30 P. M.—Prayer.
Unfinished and New Business.
- 10:00 A. M.—Report of Commission on Tuberculosis in Animals.
Tuberculin and its Value in the Control of Tuberculosis. Dr. J. H. DeVine, Goshen, New York.

ORDER OF BUSINESS.

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11:15 A. M.—Milk Problems: Items in the Cost of Production. Edward Van Alstyne, Kinderhook, N. Y.

FIFTH SESSION.

2:00-5:00 P. M.—Milk Ordinances as Affecting Cost of Production. Dr. Moak, Bacteriologist and Chemist, Brooklyn, New York.

3:30 P. M.—State Road Problems. Hon. J. B. R. Smith, Commissioner of Motor Vehicles.

4:30 P. M.—Report of State Entomologist. Dr. John B. Smith.

SIXTH SESSION.

8:00 P. M.—In Auditorium of State Normal School.

Music by the Philomela Glee Club of the State Schools.

"The Government Introduction of Foreign Plants." (Richly illustrated stereopticon lecture.) Prof. David Fairchild, Agricultural Explorer, in Charge, Office of Foreign Seed and Plant Introduction, Bureau of Plant Industry, U. S. Department of Agriculture, Washington, D. C.

January 19th, Friday.

SEVENTH SESSION.

9:15 A. M.—12:30 P. M.—Prayer.

Unfinished Business.

Report of the E. B. Voorhees' Agricultural Society. Mr. J. H. Hankinson.

10:30 A. M.—Waterways as a Means of Transporting Farm Produce. Hon. J. Hampton Moore, M. C.

12:00 M.—Closing the Business of the Meeting.

The minutes of the last meeting were read and approved.

The following committees were appointed by President Frelinghuysen:

Credentials—J. T. Allinson, Carl Schirmer, F. J. Tomlinson.

Resolutions—John W. Hendrickson, Justus W. Dobbins, Amos Kirby, Geo. B. Randolph, Henry S. Lippincott.

Treasurer's Accounts—George E. DeCamp, Theodore Brown, R. C. Graham.

Reception—John T. Cox, V. P., John M. Lippincott.

Secretary Dye—Mr. President, I will request the Committee on Credentials to come forward and take all these papers. We have the certificates of election and the blanks for making out the accounts of the delegates in duplicate. Delegates must put their post-office address on their bills in order to receive checks for expenses.

President Frelinghuysen—The Committee on Credentials will please come forward. The next business before the Board will be the reading of the Executive Committee's report.

Report of the Executive Committee.

Since the thirty-eighth annual meeting of this Board your Executive Committee have held twelve meetings in its interest. January 20th, the matter of an exhibit by this State at the Land and Irrigation Exposition in New York, in November, was considered. The County Boards were discussed, with the conclusion that some of them at least needed increased vigor and activity in order to be as useful to their counties as their needs demand. The matter of the importation of cattle into New Jersey was discussed and the need of a stricter law favored.

January 30th, a Committee of Appeal was appointed in cases where orchards, nurseries or trees are condemned by the State Entomologist and the parties feel aggrieved. The committee are Franklin Dye, Elias Black, of Little Silver, and Albert T. Repp, of Glassboro. A temporary inspector was appointed for Dr. Smith from March 1st to September 30th, at the request of the Doctor, owing to the invasion of this State by the Brown-tail and Gypsy Moths.

April 11th, a motion was passed that the following bulletins for general distribution be printed, viz.: Asparagus Production, Sweet Potato Production, Potato Culture, Poultry Husbandry and Winter Egg Production. Agricultural Map with text, Corn Production, Small Fruit Culture and Peach Production. The President and Secretary were appointed a Committee on Annual Meeting and Institutes. The Land and Irrigation Exposition was again considered and the committee decided it was not advisable at this time to ask the Legislature for an appropriation for this purpose. The President having invited this Board and the farmers of the State to meet at his place, September 20th, the invitation was unanimously accepted.

May 2d, the selection and appointment of a Plant Pathologist, under Chapter 54, Laws of 1911, was considered, as also possible available men. The matter of Bee Inspector as deputy to Dr. Smith, as provided for in Chapter 60, Laws of 1911, was discussed. As both these positions would be connected with the State Agricultural College and Experiment Station to a limited extent, the Secretary was requested to obtain the opinion of the Attorney-General on mooted points, the Secretary also to ask Secretary Colby to appoint a day for Civil Service examination for these positions.

June 13th, the necessity for more office room for the Board and the Commission was considered with other matters.

August 8th, the further consideration of finding a Plant Pathologist was taken up, inasmuch as the first man chosen had concluded to remain with the U. S. Department of Agriculture. Co-operation with the Bureau of Commerce and Labor at Washington was considered, and the committee decided it was of sufficient importance to us to be represented.

August 28th, Mr. Harry B. Weiss was appointed assistant to the State Entomologist, in place of Mr. E. L. Dickerson, who resigned. Dr. Smith was authorized to make certain purchases for the equipment of his office.

September 20th, the Plant Pathologist, second in the State examination, not having accepted the position at the salary proposed by the Executive Committee, the Secretary was directed to ascertain from him the salary he would require.

September 27, the salary of Mr. Weiss was fixed at \$100 per month. Plant Pathologist Hedgecock having concluded to remain at Washington, the Secretary was requested to ask the Civil Service Commission to allow the selection of a man from the non-competitive class for the position. The Executive Committee also requests the Commissioner of Reports to allow the Annual Reports of this Board to be printed in 11-point type.

October 17th, Messrs. Rider and Brown were appointed Committee to attend the Bureau of Immigration Conference, November 16th and 17th, at Washington, D. C., and Mr. DeCamp and the Secretary to attend the Sixteenth Annual Meeting of the American Association of Farmers' Institute Workers, November 13th, 14th and 15th, at Columbus, Ohio.

REPORT OF EXECUTIVE COMMITTEE.

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At this meeting appropriations were made to the State Horticultural Society and to the County Boards of Agriculture as required by law.

Dr. M. T. Cooke, present Plant Pathologist of the State of Delaware, having been asked to accept the same position in this State, the committee decided upon his salary and other matters relating to the furnishing of his office and the conduct of the work.

December 16th, matters connected with Nursery Inspection and Plant Inspection by the Plant Pathologist were considered with a view of consolidating some of the work in order to reduce expenses. Dr. Lipman, being present, made several suggestions. He referred to new legislation affecting the fertilizer and feed laws, stating also that they have not enough money to publish bulletins as they are demanded. He recommended an increase from \$2,000 to \$5,000. He also referred to extension work. These matters were discussed by the Executive Committee, and a Committee of Conference was appointed to formulate a law for revision of the present Agricultural and Experiment Station laws. Mr. E. G. Carr was appointed Deputy Bee Inspector, subject to Civil Service examination, Mr. Sharp, formerly appointed, having resigned. Messrs. Brown and DeCamp made brief reports of their attendance at the conventions to which they were delegates, and concerning the work done. The stenographer for this meeting was chosen, and His Excellency, Governor Wilson, invited to attend and address the Board.

January 6th, 1912. Committees were appointed for the business of this meeting; reports and other matters of interest to the success of the Board considered. Having with this meeting concluded and completed our work for the year for this organization, we express the hope that this may be a very successful meeting, even better, if that is possible, than its predecessors, and we earnestly wish the farmers of New Jersey increasing success in their work the coming year on their farms, and that organization and co-operation may be extended until all farmers are identified with some one or all of our agricultural organizations.

Respectfully submitted,

FRANKLIN DYE,
Secretary.

By the Committee.

The report of the Executive Committee was adopted.

President Frelinghuysen—The next business is the report of the State Grange by Senator G. W. F. Gaunt, Worthy Master.

Senator Gaunt—Mr. President and members of the Board: It has not been worth while in the past for me to prepare a report, as I have appeared before you and given you a brief account of the work of the State Grange, as I will do to-day.

It is a pleasure for me to report to this Board that the State Grange is, as usual, working along harmoniously and is getting results for the farmers of the State. We are co-operating in every method that we possibly can with the State Board of Agriculture, and the relationship between the two organizations is the most cordial, which it is a great pleasure to report. It is always a pleasure to bring the fraternal greetings of the members of the State Grange to the members of the State Board of Agriculture,

who are working along the same lines for the advancement of agriculture in New Jersey.

There are many propositions and many problems that affect agriculture which no doubt this year will be brought before our attention in a legislative way, and, as we have done in the past, we shall endeavor in the future to be the representative of the agricultural interests on the floor of the Senate, and our voice and vote will be heard voting for agriculture in every line of work, and it is our intention this year if possible to see that the agricultural interests of the State get greater recognition than they ever have before.

It is a pleasure also to report that the National Grange throughout the country is in a more prosperous and a more vigorous condition than it has ever been before. That will aid us in our work in New Jersey to know that the organization throughout the nation is in a prosperous condition.

I do not think it is necessary for me to enter into details as to what the Grange has accomplished during the past year, as the record has already been written. We know that it has been entirely satisfactory and that the membership has increased in numbers and is increasing in influence, and that influence is being felt throughout the State more than it ever has been in the history of the organization. (Applause.)

The report by Senator Gaunt was adopted.

Treasurer's Report.

New Jersey State Board of Agriculture, in account with A. J. Rider,
Treasurer, Dr.

To cash received from State Treasurer, as follows:

Account of General Fund, \$5,472.53

Cr.

By Bills paid on account of expenses of Annual Meeting, Institutes, Lectures, etc.,	\$4,562 53
By Appropriation to County Boards,	610 00
By Appropriation to Horticultural Society,	300 00
Total,	\$5,472 53

TREASURER'S REPORT.

To cash received from State Treasurer on account Entomologist
 and Bee Inspector and assistants, \$1,930 59
 By bills paid on account of same, \$1,930 59

An order from the State Auditor that all bills be filed in the Secretary's office makes it impractical to segregate the items in either department, as the bills are not seen by the Treasurer.

Complicated legislation seems to be responsible for a condition whereby not all of the funds of the Board pass through the Treasurer's hands, hence his report is necessarily incomplete.

Respectfully submitted,
 A. J. RIDER,
Treasurer.

Hammonton, N. J., Jan. 17th, 1912.

President Frelinghuysen—If there is no objection, this report will be referred to the Committee on Treasurer's Accounts, which, I believe, is the usual order. The next business will be the report of the Committee on Transportation and Freight Rates, by E. R. Collins, Chairman.

Report of Transportation and Freight Rates Committee.

Mr. President and Gentlemen of the State Board of Agriculture:

Under the influence of the Public Utilities Commission, transportation conditions have shown a marked improvement during the past year, so far as our people of the farms are concerned. Your Committee considers that there is yet room for improvement from our standpoint, yet as we cannot expect to secure radical changes at once, we are appreciative of what we are getting, and have hope for the future.

No transportation matters of serious import have been submitted to your Committee the past year. In cases where our people consider that they have not been treated fair by the transportation companies, they now find that it is not difficult to get a hearing, and they are given reasonable attention and succeed in adjusting the matters themselves, which is as it should be.

Several instances were called to the attention of your Committee where local freight agents have demanded a deposit to cover possible demurrage before they would place the cars for loading. As there is no authority of law for such a demand, in each case the agents were led to see the error of their way and the demand was withdrawn. If any of our people are confronted with this demand in the future, a complaint to the general freight agent of the line on which it occurs will meet with prompt attention and immediate relief.

An effort has been made to have some of the other railroads follow the lead of the Central Railroad of New Jersey in a reduction of the rates of transportation on lime for agricultural use, but except for promises to consider the matter, no headway has been gained. Officials of the roads with which this has been taken up, grant that the rate on farmers' lime could be made less, but they hesitate to reduce it, fearing that demands would be made for reductions in other quarters that would lead to embarrassment, and until the Public Utilities Commission gets the work of the Commission more in hand, they do not care to take it up. This will, however, be a matter that your Committee could take up again the coming year with a fair prospect of success.

There is a trouble that seems to be growing. That is stealing from shipments while in transit. The fruit shippers are suffering considerable

from this, particularly when the shipments are by express or in less than carload lots. Care in seeing that packages are well secured and properly closed, and that the carrier has proper strength, will go a far way to keep out the petty thief. A petty pilferer who would not hesitate to slyly rip a burlap cover with his pocket knife to get at the contents of a barrel or basket would hesitate to break a wooden cover. The shipper is in duty bound to see that the carrier is reasonably secure and does not offer too much temptation to the light-fingered.

Your Committee would again call your attention to the wisdom of securing rates when a shipment of freight or express is to go over a route with which you are not familiar. Before shipping any important consignment, or before having one start to you, learn what the rate is going to be. Your local freight agent can give you the rate, and if there is not a published rate between the two points to be covered, he can secure a rate for you. When the rate is known, then every one concerned knows what to expect, and the transaction is not followed by a lot of correspondence and hard feeling in which the buyer, seller and the transportation agent become involved. Be sure what you are going to do before you do it, or, at least, be as sure as you can.

For some time our people have been looking to the suburban traction companies for cheap short-haul transportation. Several years ago the Legislature passed an act removing the restrictions from the trolley companies so that they could enter into the suburban carrying trade. Again we are forced to admit that our hope of relief in this quarter has not been realized. At present, about fifty miles of street railway is open to light freight service, but outside of this the condition remains the same and no steps have been taken by the street railways to carry small freight. A short time ago several of the companies operating in the State were interrogated on the matter by your Committee, and the answer received from General E. W. Hine, secretary of the Public Service Corporation is practically the same as that received from all of the companies communicated with. The General says: "Suburban street railways have made no attempt to take advantage of the provisions of the law authorizing the carrying of freight and express matter. I say suburban street railways; of course, I mean so far as the Public Service Railway is concerned, neither do I think they will until such time as the Legislature may remove the objectionable conditions now evident, and we cannot, nor would we attempt to, get municipal franchises through the territory we now occupy, and subject ourselves to the conditions that might be imposed in the various localities, probably no two alike.

"The law should be amended, permitting street railway companies to carry freight and express matter without municipal restrictions. Perhaps there would be no objection to definite hours of the day, or night, that privilege may be exercised, but it should be a general law and apply to all municipalities. If such change is made in the present act, I think our people would be glad to enter the field, but with the laws as they are at present, they have no thought of doing so."

This is the situation as your Committee finds it.

There is no question but that the installation of the service on the street railway lines of the State would be a great convenience, but it would not be wise to secure it if we have to sacrifice other rights.

A plan is being prepared for presentation to the Public Utilities Commission asking for a reduction in the freight charges made for the return of empty fruit carriers to the shipper. As the bulk of this business is carried on covering two or more States, the Interstate Commerce Commission will have to consider it also. This matter will be brought to the attention of both commissions at as early a date as possible.

Respectfully submitted,

E. R. COLLINS,
J. T. ALLINSON,
J. HARVEY DARNELL,

Committee on Transportation and Freight Rates.

TRANSPORTATION AND FREIGHT RATES. 19

President Frelinghuysen—You have heard the report of this committee. It is now open for discussion. Are there any remarks? If not, the question of the adoption of the report and the continuing of the committee will be before you.

Secretary Dye—It seems to me that there are points in the report, Mr. President, which ought to be discussed. Do you want trolleys to carry freight? (Cries of “Yes, of course we do.”)

Secretary Dye—Why don't you say so?

Mr. Brown—Mr. President, we want the trolleys to carry freight, but they cannot do it if the law don't permit them, and that is the point the gentleman brought up. There is another point there, too, that the limited franchise law is also in the way of the trolley carrying freight. Those obstructions will have to be removed before it can be done.

Mr. Gaunt—Mr. President, my first year in the Senate gave me considerable notoriety in reference to this matter. The present trolley freight bill was passed that year. Without going into the details, I want to say that we have not made any progress, because the electric lines throughout the State feel, as Mr. Collins pointed out to you, that it is impossible for them to secure franchises in every municipality through which they run. As an illustration, I will mention one trolley line running through the country from Bordentown to Camden. They attempted to get a franchise so that they might be able to carry freight on that line, and I believe they secured a franchise under which they would be willing to operate from practically all the cities except three or four, and it was absolutely impossible for them to secure a franchise that would do them any good whatever.

Now, so long as the present franchise act is on the statute books of this State, I do not think that we may ever expect to see anything done along the extension of trolley lines throughout this State, which, in my opinion, is needed worse than any other one thing to develop the resources of New Jersey. That is a matter that has always been a sort of a, perhaps, hobby of mine, that we should do everything we possibly could to get extensions out into the rural sections, and as a business proposition it is impos-

sible for any electric lines to build their lines out into the rural sections for passenger traffic alone. They must have the opportunity to carry small freight and express packages, and, much to the satisfaction of we who are living in South Jersey, we do not find, or did not find during that bitter struggle in the Legislature, opposition coming from the roads in the southern parts of the State, but the opposition seemed to be from the northern parts, where, of course, they had trolley lines in some of those large centres; they seemed to think they had all they needed where they could get a trolley car almost every minute of the day in some of those large municipalities. They were not willing for us to have one once a week down in the southern part of the State, and the struggle went on and we were able to pass the law, and if we could now have these obstructions, these objectionable features which seem to be in the way, taken away it would help us very much. As business men, none of you in this audience would buy a bond and help to finance any one of those electric lines under the present municipal regulations that would be placed on the franchises. I think it is a matter that the State Board of Agriculture is greatly interested in.

President Frelinghuysen—We should be very glad to hear from all the delegates on this question. As you all know at the present time, this limited franchise act was placed upon the statute books with seeming tremendous enthusiasm, limiting, I believe, the franchise to twenty years. Was it not, Senator?

Senator Gaunt—Yes, sir.

President Frelinghuysen—And it was then stated that it was feared that very few capitalists would be willing to invest their money in an enterprise whose life might be limited to twenty years. It was generally recognized that the unlimited franchises granted by the State were of immense value and a menace to the public welfare, but it would seem that a longer period, forty or fifty years, might be reasonable.

I do not believe—I do not speak knowingly—but I do not believe that there have been very many trolley lines built since that law went into effect, and I think it created, by reason of its lim-

TRANSPORTATION AND FREIGHT RATES. 21

itations, one of the greatest trolley-line monopolies that the State of New Jersey has ever seen, by reason of the fact that it limited the building of any additional trolley lines, thereby creating competition.

Now, this question is an important one. It is of great interest to the farmers that they should have proper means of transportation for their products. If you want to take any action, if you have any views on it, the Chair would be very glad to hear them. Both the Secretary and Senator Gaunt, who has fought this bill through the Legislature, urge some expression of opinion, and the Chair will be very glad to hear from you.

Mr. Camp—Mr. President, why wouldn't it be common sense for this body to take some action in regard to legislation to abolish the impediments which are now in the law as it exists? Wouldn't it be wise to appoint a committee to draft a bill to straighten this thing out as it stands?

President Frelinghuysen—Does the delegate from Cape May make such a suggestion?

Mr. Camp—I would suggest it. I am here to represent the Cape May Pomona Grange, and I feel that my people on the lower end of the State would like this legislation, and I feel that this body ought to take some action in regard to this. I think it is an important matter, and I am sure that my people in the lower end of the State would be glad to see legislation to reform this so that the trolley lines can carry freight and see their way clear to do so.

Mr. Collins—Mr. President, supplementary to the report I have just read, I want to say that ever since the formation of this Transportation Committee, or ever since I have been on it, I have been working the best I knew how to get to the bottom of this transportation over the suburban street railway lines. I am somewhat familiar with street railway work as a civil engineer; I have built and operated street railways, and I have taken this matter up with the street railway people, and they say, to a man, take Ford, Bacon and Davis, who operate lines in the northern part of the State, and the Public Service Corporation, its letter there

from its secretary which I read in my report, to a man, they will not make extensions, nor will they make any arrangements for carrying freight until there is some change made in the existing laws that will allow them to go into that business with a reasonable expectation of getting some receipts from it. One important point is the hours in the franchises, and then the important thing is the way it is regulated now, that they must go into each municipality and get from that municipality a franchise stating what hours of the day they can carry freight. Now, they will go into one municipality and get a franchise that says they can carry freight from, we will say, two to four in the afternoon, and the very next municipality to it will not let them carry freight except, we will say, from seven to eleven in the evening. Now, they will have to bring a carload of freight to the boundary of one town and that will have to stay there until the time comes that they can go on with it through the other. That is unreasonable, and we cannot expect any improvement in this matter until there is some legislation that will affect all towns alike, and let the railroads run their trolley freight service equally through in all parts of the State.

Mr. Gill—I move, Mr. President, that a committee be appointed consisting of the President and the Secretary and three other members, for the purpose of repealing the present act and drafting a franchise bill extending it to fifty years. I believe it is now twenty years.

Secretary Dye—I suggest that that resolution be amended so that the President appoint the committee.

Mr. Gill—The President is to appoint the committee, but it is to include himself and the Secretary.

Mr. Cox—I second the motion.

President Frelinghuysen—The delegate from Cape May has already moved that a committee be appointed; I presume you second that?

Mr. Gill—Yes, I will second that motion.

Mr. Camp—Mr. President, that was my idea, that this body appoint a committee to see that legislation was passed or pre-

sented to the Legislature now in session to eliminate the errors or things that were in our way in regard to this matter.

President Frelinghuysen—The motion of the gentleman from Cape May is that a committee of three be appointed by the Chair to consider this question and present suitable resolutions to this Board. Is that seconded?

Mr. Gill—I will second that motion, but I should really think it better to have a committee of five, two members of which should be the President and Secretary of the Board, and that was my suggestion; with your approval, I repeat the suggestion.

Mr. Camp—I accept that amendment, Mr. President.

President Frelinghuysen—You have heard the motion as amended; the amendment being accepted, there is no need of putting the previous question. We will therefore vote on the amended resolution.

The motion was carried.

President Frelinghuysen—I will appoint on that committee Mr. Gill, Mr. Collins, and Mr. Camp, from Cape May. That fills the committee.

The next business before the Board is the reading of the Secretary's report.

Secretary Dye then read his report.

Secretary's Report.

The tendency of practical agriculture in the State of New Jersey is to do better work each year. Improvement is the order, in fact this is the trend of agriculture throughout the entire country and herein lies the hope, which we believe will be realized, that production will keep pace with the growing demands of an increasing population. If this were not so, the outlook would be deplorable, indeed. Eminent men have from time to time made gloomy prophecies concerning our future food supply, as they have on many other subjects, but the Almighty Father whose resources are infinite has made provision for all human needs, and at the opportune time His help is made manifest. Thus when agricultural practice was carried on without knowledge of the laws of plant growth and the requirements of plant food, that the crops the farmer attempted to grow needed, and without knowledge of the requirements of different soils to produce such crops, the land became unproductive. With the exhaustion of the superficial plant food provided by nature on new lands, profitable production ceased. At this juncture the star of agricultural science rose in the East and although its light for many years made slow progress, nevertheless it continued to invade and dissipate the darkness of ignorance which was quite general. Now the intelligent agri-

cultural world is seeking its light, desiring to be guided thereby. Therefore with correct agricultural science and rational agricultural practice going hand in hand in our future farming operations it is certain, as proved by present progress, that our agricultural lands will be made to produce more and more of the various crops year after year, until the highest maximum yields are obtained; and maximum yields will be equal to our needs in the way of food supply. But what are maximum yields? No one as yet knows. The extreme possibilities of an acre of land in the production of any crop is yet to be determined. We are going forward. The lands of England, France and other foreign countries farmed, some of them for a thousand years or more are producing larger average crops of the same kinds than are our newer lands of this Western Hemisphere. Let us continue to follow the inviting way to perfect work until we become leaders in the art of agricultural practice. New Jersey farmers, as agriculturists, horticulturists, dairymen and market gardeners should lead the United States. In fact, for a number of years past, the average value per acre for a number of crops has been greater in New Jersey than in any other State. This is due to intensive culture and skill. Let the good work go on until every farm and every crop and every farm animal, including poultry, is managed according to the best available knowledge each succeeding year. To facilitate progress in the direction indicated, farming demonstrations or extension work should be made a leading factor. The value of such work has been proved by the United States Department of Agriculture under the direction of the late Dr. Knapp, in the Southern States; it has passed beyond the questionable stage. In times gone by requests came, "Tell me how"; now it is, "Show me."

The Association of American Agricultural Colleges and Experiment Stations of the United States are considering this question, and my thought is that if our New Jersey Agricultural College and Experiment Station contemplate work in this direction, this State Board should be in full co-operation with it. It is quite possible that some plan could be devised that would include the Farmers' Institute, with Farm Demonstrations; they are both extension work. There should, I believe, be co-operation in every reasonable way between the Agricultural College, and Experiment Station, the State Board of Agriculture, the State Grange and the State Horticultural Society. By this course cost of administration should be reduced and efficiency increased. This work contemplates personal inspection and advice to every farmer needing it. By it this State or any other would be brought to a higher degree of productiveness and cost of production reduced.

WORK OF THE PAST YEAR.

Nineteen hundred and eleven has been remarkable for extremes of untimely weather. The early drought, which was very severe in some sections, came at a time when growing crops were in greatest need of the normal rainfall. Much corn failed to germinate which made replanting necessary, thus reducing the yield.

The drought and extreme heat of July reduced the potato crop fifty per cent. in most cases and market garden crops were seriously injured. The hay crop also was reduced thirty to fifty per cent. by the early and later drought. With the early autumn rain began to come and continued to come up to the close of the year. While therefore during the Spring and Summer months the rainfall was far below the normal yearly average, the later months have received a supply above the annual monthly average. This excess of precipitation above the normal average, though occurring late in the year, will be beneficial to early planted crops, meadows and orchards, next Spring.

The general reduction in the yield of most all farm crops, owing to drought, reduced the general supply to such an extent that prices advanced—it was a case of demand and supply. The increase in the price of farm food-stuffs has not been caused by artificial means or combination. This advance in

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price saved many of our farmers, not all (it depended chiefly on the crops produced), from what would otherwise have been a disastrous year, for the same expense of crop production must be met whether crops are good or poor, whether prices are low or remunerative.

It was a good year to compare different methods of farming and whether there is any general system of green manuring, early and deep plowing and frequent subsequent cultivation that will so conserve moisture as to tide crops over an ordinary drought. While material prosperity is not the only criterion by which to measure the progress and standing of any individual or community, it is nevertheless a satisfaction to your Secretary and must be, I am quite sure, a pleasure to all progressive farmers, that in the value of our annual crops for the past eleven years we have steadily advanced, going from \$24,249,179 in 1900 to \$63,811,520 in 1910.

During the summer of 1911, I feared we would not show any advance in the value of farm crops over previous years, but the advance in prices referred to dissipated every doubt and we are able to report an increase in crop values for 1911 above that of 1910 of over \$3,000,000, a total for the year of \$67,715,872.

In this connection, however, the fact should be kept in mind that our farms and their equipment have advanced in value and a corresponding increase in the annual income should be sought and maintained, whether it be by larger yields at average prices, or by a decreased yield from whatever cause and higher prices, otherwise our farms will fail to yield a sufficient revenue to pay interest on the investment, taxes, cost of production, marketing, wear of implements and machinery, and family support. According to the census of 1910, the total value of our farms and farm property is \$254,832,665. An increase over 1900 of \$65,299,005, and an increase per farm over 1900 of \$2,140, or a total value for each farm for 1910 of \$7,610. Now it is evident that if this sum were placed at 5 per cent. interest free of tax, it would afford a very meagre living for a family of five persons. It is further evident that the farmer must make more than 5 per cent. net annual profit on his farm if he expects to increase his capital, although he may dig out a portion of the living for himself and family, as he goes along. It may be of interest to state that the total value of each farm as stated \$7,610 is made up as follows: \$6,484 represents the value of land and buildings, \$734 the value of live stock, and \$391 the value of implements and machinery.

The encroachment of cities and towns on our farming area has reduced the acreage since the census of 1900, 267,109 acres, equivalent to 2,255 farms at the present average size, 76.9 acres.

Domestic animals and poultry also have increased in value since 1900, as is shown by the following figures taken from the bulletin of the 13th census, 1910:

	<i>Value 1910.</i>	<i>Increase since 1900.</i>	<i>Decrease.</i>
Cattle,	\$8,393,117	\$1,194,010	.....
Horses and colts,	12,012,512	4,430,238	.....
Mules and mule colts,	621,774	267,737	.....
Asses and burros,	5,274	2,819	.....
Swine,	1,127,040	200,861	.....
Sheep,	161,138	.....	\$41,352
Goats and kids,	4,614	1,608	.....
Other animals, .....	.....	3,000	.....
Poultry,	2,221,610	920,757	.....
Bees,	41,560	2,341	.....
Totals,	\$24,588,639	\$7,023,371	\$41,352

FERTILIZERS, LABOR AND FEED.

With but 70.7 per cent. of the farms reporting, the amount expended for fertilizers is \$4,277,504, equivalent to \$182 per farm for those reporting.

Again, the money expended to carry on the work of 70 per cent. of our farms is \$11,097,727. The two items—fertilizer and labor—aggregate \$15,375,331. This is a vast sum to expend on a venture, for no farmer knows at the beginning of the season's work whether his plans will succeed or fail. Another matter reported for the first time in the census of 1899 is the amount expended for feed which is for 66.7 per cent. of the farms, \$5,947,181. This sum no doubt is largely for dairy purposes. While the monthly purchase for the average size dairy may seem to be small, yet when the total is made up it shows what a large sum is to be deducted from the real or imaginary profits of dairy farming at the present price of milk. These figures emphasize very strongly the great importance of growing more protein feeds, alfalfa, etc., on the farm as so often recommended by our late worthy President, Dr. E. B. Voorhees.

POULTRY.

The increase of 70.8 per cent. in the value of the poultry kept on the farms of New Jersey shows that poultry and egg producers have faith in this State as being adapted to this business as well as in the markets existing within talking distance of the farm. The reported value of our poultry is \$2,221,610. This is nearly twice the value of swine and over one-fourth that of cattle. The Legislature of 1911 did a wise thing in establishing a Poultry Department at the State Agricultural College farm. It is already attracting wide attention and bids fair to give added stimulus to the industry throughout the State. It is high time we should be able to refer all citizens of New Jersey seeking information on this as well as other questions connected with the farming industry to our own Agricultural College rather than to that of some other State.

FIFTH SUMMER MEETING.

Owing to the fire at the College farm during the early summer, it was not convenient to hold the Field Meeting there. This being so, President Frelinghuysen gave the Board and the farmers of the entire State a cordial invitation to hold the Fifth Annual Summer Meeting at his home at Raritan. The Executive Committee accepted this invitation and on September 20th several hundred farmers from over the entire State, many of them accompanied by their wives and daughters, assembled at the President's home. The day was fine, the addresses profitable and the entertainment provided for the multitude by Senator and Mrs. Frelinghuysen was a further proof of their well-known hospitality. A cordial welcome, a beautiful day, instructive addresses, a farm and dairy worth inspecting and a bounteous entertainment all contributed to make the day one of profit, pleasure and pleasant memories.

FARMERS' WEEK.

The provision made in 1908 for a week of instruction in farming affairs during the holiday season has met with such a general response by the farmers of the State, its continuance seems to be a necessity. The Fourth Annual program in the series of this character was conducted in the Short Course Building on the College Farm December 26th to 30th, 1911. The attendance was larger than at any previous meeting, being for the week 1,051 and for each session 81. The interest in the subjects discussed was manifest throughout the week. The poultry exhibit at the new Poultry buildings under direction of Mr. H. R. Lewis, Professor of Poultry Husbandry, was a new and popular feature. Women as well as men are studying in this Department as well as in other subjects, and the outlook for increasing interest and more profitable farming as a result of these lectures is highly encouraging.

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FARMERS' INSTITUTES.

As heretofore Farmers' Institutes have been conducted occupying thirty-seven days, five of the meetings covering two days each. These have been held as far north as Montague, Sussex county, and as far south as Germania, Atlantic county. Some new places have been added to the list and a few dropped, owing to lack of interest. There are yet to be held during February, possibly, ten more in localities not yet visited. The Institute as a means of assisting the farmer in developing his farm to a greater degree of productiveness is worthy the hearty support and earnest co-operation of every farmer in the State. It needs just this and when it is thus appreciated it will exert a strong influence in advancing the work of co-operation so much needed by farmers at this time. Some of the subjects discussed were: Alfalfa Production; Swine Production; Essentials in Dairying; Peach Production; Care and Management of Small Fruits; Marketing Farm Produce; The Exchange; Conservation of our Soil Resources; Economic Value of Birds; White Potato Production; Sweet Potato Production; Essentials to Success in Poultry and Egg Production; Horse Manure vs. Crimson Clover; Cow Peas and Vetch; Essentials in Spraying; Horticultural Crops; Seed Breeding and Seed Saving; Home Mixing vs. Commercial Fertilizers; Forms and Functions of Fertilizer Ingredients; Natural Enemies of Insect Pests; The Rational Use of Lime; Essentials to Success in Market Gardening; Kinds and Varieties of Fruit to Plant for Future Market; How to Improve Sandy Soil; Planting and Care of the Orchard; Books for Farmers; Co-operation between Home and School, and numerous others.

COUNTY BOARDS OF AGRICULTURE.

County Boards auxiliary to the State Board exist in twenty counties. Some of these, with progressive men at the head are doing splendid work, a larger number have not acquired that degree of usefulness that is possible under wise management and general co-operation. It is a mistake to expect a few persons to run our agricultural organizations when every one who ought to be interested takes an active, sustaining part, the meetings will be well attended, enthusiastic and useful. Why not make the Directors of the State Board fostering fathers to the County Boards?

RAILROAD TRAIN WORK.

A Farmers' Special, or Railroad Educational Train, was run over the Pennsylvania lines in New Jersey from January 8th to 13th, 1912. The total attendance at the various stops is 2,066, not including the Belvidere Division. A new feature was added this year in one car, that of using the stereopticon, as it was considered certain topics could be more forcibly presented by appealing to the eye as well as the ear. This proved to be a popular innovation. The exhibit car, tried last year for the first time at a few places, was this year extended to the entire trip. Like the stereopticon views, the object lessons in the exhibit car are helpful in showing what can be done and what ought to be done by every farmer in the way of growing perfect crops of fruit, vegetables, etc. There were also on exhibit model poultry houses, typical breeds of fowls, approved carriers for eggs, and fruit, views of crops grown under different conditions, printed formulas for animal and poultry feeding, as also fertilizer formulas for different crops. In connection with the addresses, and before leaving a station, bulletins on the subjects discussed were handed to the farmers. By these combined means it is certain an added impulse to better farming is being and has been given, and we look for corresponding results.

Last year our Railroad Educational Train ran March 10th, 11th, 12th and 22d over the Pennsylvania system, making seventeen stops; and on the

Central Railroad, March 6th and 7th, 1911, there were eleven stops made. The total attendance at the various stops was 3,000.

DIRECTORS' ANSWERS TO THE FOLLOWING QUESTIONS.

In seeking information concerning the yields of the several agricultural crops, and their value per acre, as well as the condition of prosperity of the farmers for the past year, a series of seven questions were submitted to the Directors for their consideration.

Question 1—"Has 1911 been as prosperous as was 1910 to the farmers?" is answered in the affirmative by twelve counties, in the negative by nine.

Question 2—"If it has not been as prosperous, what are the reasons?" Answers are: "Dry weather prevailing during crop-growing season and a consequent smaller yield."

Question 3—"If 1911 has been better than 1910, in what respects?" The answers are, in the main, "Better prices for the crops produced, with some occasional crops a better yield."

Question 4—"Are average good farms being run at a profit," Twelve counties reply "Yes"; one correspondent says: "Yes, when run by average good farmers." This undoubtedly is the case with most farms that are being run at a profit—it requires at least an average good farmer to succeed in farming.

Question 5—"If they are run at a profit, what per cent, above cost of production?" The answers vary from 5 per cent. to 34 per cent. profit, the average being 17 per cent.

NOTE.—Evidently, this includes only the cost of seed, fertilizers and labor, and not interest on the plant, taxes, etc.

Question 6—"What crops have been injured by drought?" is answered in a general way, covering most all crops grown. Hay and white potatoes being especially marked, and all truck crops in the truck-growing regions.

Question 7—"What per cent. of injury?" Hay and potatoes from 25 per cent. to 50 per cent. The average percentage of all crops affected by drought being 40 per cent.

TABLE I.

ACREAGE, YIELD AND VALUE OF GENERAL FARM CROPS IN NEW JERSEY, 1911.

<i>Crops.</i>	<i>Acres.</i>	<i>Yield Per Acre.</i>	<i>Total Yield.</i>	<i>Price Per Bushel.</i>	<i>Total Value.</i>
Corn,	290,000	36	11,310,000	\$0.69½	\$7,850,450
Wheat,	111,000	19¾	2,192,250	1.05	2,301,862
Rye,	85,000	15	1,185,000	.80	1,020,000
Oats,	60,000	28	1,680,000	.52	873,600
Buckwheat,	13,000	19	247,000	.68	167,960
Hay,	437,000	1¼	546,250	22.52*	12,301,550
Potatoes, White,	95,000	89	8,455,000	1.04	8,793,200
Potatoes, Sweet,	21,000	115	2,415,000	.75	1,811,250
Miscellaneous vegetables and fruits,					11,200,000
Milk,					18,396,000
Poultry and eggs,					3,000,000
Total, 1911,					\$67,715,872
Total, 1910,					63,811,520
Excess of 1911 over 1910,					\$3,904,352

* Per ton.

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REPORT OF THE INSPECTION OF CONCENTRATED FEEDING STUFFS.

During the past year, 1911, six hundred and fifty (650) samples of the various feeding stuffs were received and they represented the stock of 149 dealers conducting business in 85 cities and towns; six hundred and thirty (630) of these samples were collected officially and the balance were forwarded by individuals. The State law recognizes two classes of feeds, one of which must carry a guarantee of Protein and Fat, and the second class is exempted from this requirement. Of the total number of samples received, four hundred and ninety-four (494) belonged to the class requiring a guarantee.

Forty-nine, or 9.9 per cent. of the guaranteed class, did not satisfy the requirements of the law by having the guarantee attached. The lack of this information was due, in a large majority of the cases, to the fact that the material had been shipped in bulk and the guarantee accompanying the shipment was not properly taken care of by the dealer. In order to obtain the full benefits of the law, it is necessary that every dealer, as well as every consumer, should be fully acquainted with the State requirements, and to govern their purchases accordingly.

Five hundred and twenty-two (522) samples, representing four hundred and fourteen (414) brands, were analyzed, three hundred and sixty-three (363) of which belonged to the guaranteed class. Two hundred and eighty-five (285), or 78.5 per cent., of the guaranteed samples satisfied their guarantees. This was an improvement over last year, when 75.6 per cent. of the guaranteed samples were in a similar condition.

The character of the mixed feeds was about the same as found in the previous inspection and were prepared according to the general formulas. There was one feeding stuff, however, called the Hederich Oil Cake Meal, of which we were unable to ascertain the feeding value. The manufacturers informed us that the meal "is the result of crushing or pressing Hederich seed, which comes from Russia or Germany. It closely resembles the charlock seed in America, sometimes called wild mustard."

The feed question is becoming more important each year, and the farmers who study the comparative values of the feeding stuffs offered, as shown in the bulletins, will save both in the cost and in the efficiency of the nutrients if the purchases are made in accordance with the facts presented.

Respectfully submitted,

(Signed) CHAS. S. CATHCART,
Chief Chemist.

Jan. 3, 1912.

Let us remember—

That we have over 1,000,000 acres still unoccupied. A large portion of which is capable of producing most crops grown in New Jersey.

That there are thousands of acres connected with our farms not producing nearly as much as they are capable of, owing to neglect of cultivation, poor cultivation, lack of fertility and poor or impure seed.

That our dairy animals of poor ability and low yield are keeping our dairy records far below what they should be, and below what they would be, were the low yielders removed and their places occupied by cows that pay. Our present annual yield per cow is about 4,500 pounds.

That the acreage of some of the crops of former years that were the most prominent is being reduced from year to year, others are assuming prominence, as from 1879 to 1909 there have been crops reduced in acreage for period named—

	<i>Corn.</i>	<i>Oats.</i>	<i>Wheat.</i>	<i>Rye.</i>	<i>Hay and Forage.</i>	<i>Potatoes.</i>
1879,	344,555	137,422	149,760	106,025	412,757	41,609
1909	265,441	72,130	83,637	69,032	401,315	72,991
Decrease, ..	79,114	65,292	66,123	36,993	11,442	31,382*

*Increase.

That sweet potatoes, market garden crops and fruit are increasing, and that this is as it should be. New Jersey is largely a market garden and fruit State, owing to the character of its soil, its climate and quick accessibility to good markets.

That fruit will pay when it is properly grown and properly packed and shipped.

That we should co-operate in advertising our State as to its possibilities and advantages by exhibiting our products at suitable times and places and by printed statements.

That we have a goodly heritage not appreciated by all of us as it should be, and that we can honestly write others to come in with us.

That none of us are better than we ought to be nor as good as we might be.

That we need to know more about the things that concern us most.

That we should teach our children, or have them taught, about the things in which they will be interested when they become men and women.

That the sum of human knowledge is greater than that of any one person. Let us not be vain of that we think we know, nor despise him who knows but little.

The following tables, taken from the Bulletin of the Thirteenth Census of the United States, somewhat abridged, are printed herewith for information and reference to those interested.

Tables 1 and 2 present by counties the more important agricultural data collected at the Thirteenth Census, 1910.

Table 1 shows the population, number of farms, land and farm area, value of farm property and number and value of domestic animals and of poultry and bees, as of April 15th, 1910. Comparative data for June 1st, 1900, are given in italics for certain items.

Table 2 itemizes the statistics of farm expenses, and presents the acreage and yield of the principal crops for the crop year 1909.

TABLE I.—FARMS AND FARM PROPERTY, BY COUNTIES, APRIL 15, 1910.

	THE STATE.	Atlantic.	Bergen.	Burlington.	Camden.	Cape May.
POPULATION,	2,537,167	71,894	138,002	66,565	142,029	19,745
*Population in 1900,	1,883,669	46,402	78,441	58,241	107,643	13,201
NUMBER OF ALL FARMS,	33,487	1,572	1,221	2,389	1,244	632
*Number of all farms in 1900,	34,650	1,295	1,716	2,549	1,133	601
NUMBER OF FARMS, CLASSIFIED BY SIZE:						
Under 3 acres,	541	27	40	25	20	5
3 to 9 acres,	3,256	244	228	153	150	86
10 to 19 acres,	4,276	398	228	231	248	131
20 to 49 acres,	7,607	556	411	421	366	178
50 to 99 acres,	8,194	218	230	606	267	107
100 to 174 acres,	7,207	89	56	688	146	73
175 to 259 acres,	1,659	20	16	160	33	32
260 to 499 acres,	576	7	7	76	11	16
500 to 999 acres,	112	6	2	12	3	2
1,000 acres and over,	59	7	3	17	.....	2
LAND AND FARM AREA.						
Approximate land area,	4,808,960	364,160	151,680	521,600	142,080	169,600
Land in farms,	2,573,857	72,957	52,726	287,816	64,933	42,106
*Land in farms in 1900,	2,840,966	64,419	75,760	343,096	76,535	54,366
Improved land in farms,	1,803,336	34,035	32,083	175,231	50,187	18,388
*Improved land in farms in 1900,	1,977,042	32,954	46,776	190,871	55,370	24,387
Woodland in farms,	538,131	30,903	13,941	91,723	8,096	10,995
Other unimproved land in farms,	232,390	8,019	6,702	20,862	6,650	12,723
Average acres per farm,	76.9	46.4	43.2	120.5	52.2	66.6
Average improved acres per farm,	53.9	21.6	26.3	73.3	40.3	29.1
VALUE OF FARM PROPERTY.						
ALL FARM PROPERTY,	254,832,665	5,688,627	15,834,378	18,946,545	8,484,263	2,190,117
*All farm property in 1900,	189,533,660	3,091,265	14,288,787	15,082,881	6,978,422	1,691,357
Per cent. increase, 1900-1910,	34.5	84.0	10.8	25.6	21.6	29.5
Land,	124,143,167	2,987,253	9,502,100	8,419,967	4,869,325	953,710
*Land in 1900,	93,360,930	1,611,560	8,243,180	6,474,010	3,873,320	784,450

* Comparative data for June 1, 1900.

TABLE I.—FARMS AND FARM PROPERTY, BY COUNTIES, APRIL 15, 1910.—Continued.

	THE STATE.	Atlantic.	Bergen.	Burlington.	Camden.	Cape May.
VALUE OF FARM PROPERTY—Continued.						
ALL FARM PROPERTY—Continued.						
Buildings,	dollars.. 92,991,352	2,100,437	5,119,050	6,857,544	2,566,990	875,030
*Buildings in 1900,	dollars.. 69,230,080	1,124,220	4,838,960	5,845,790	2,258,700	631,520
Implements and machinery,	dollars.. 13,109,507	257,550	558,785	1,269,527	416,270	118,961
*Implements, etc., in 1900,	dollars.. 9,330,030	144,270	524,380	899,120	332,920	92,300
Domestic animals, poultry and bees,	dollars.. 24,588,639	343,387	654,443	2,399,507	631,678	242,416
*Domestic animals, etc., in 1900,	dollars.. 17,612,620	211,215	682,267	1,863,961	513,482	183,087
AVERAGE VALUES:						
All property per farm,	dollars.. 7,610	3,619	12,968	7,931	6,820	3,465
Land and buildings per farm,	dollars.. 6,484	3,236	11,975	6,395	5,978	2,894
Land per acre,	dollars.. 48.23	40.95	180.22	20.25	74.99	22.65
*Land per acre in 1900,	dollars.. 32.86	25.02	108.81	18.87	50.61	14.43
DOMESTIC ANIMALS (FARMS AND RANGES).						
Farms reporting domestic animals,	30,941	1,269	1,068	2,237	1,060	586
Value of domestic animals,	dollars.. 22,325,469	255,277	558,135	2,202,290	577,959	204,713
CATTLE:						
Total number,	222,999	1,377	3,463	24,019	4,076	1,988
Dairy cows,	154,418	1,012	2,445	16,069	2,908	1,337
Other cows,	14,896	77	185	1,487	179	111
Yearling heifers,	17,625	111	371	1,748	333	180
Calves,	27,934	119	278	3,777	511	277
Yearling steers and bulls,	3,904	37	65	296	95	68
Other steers and bulls,	4,222	21	119	642	50	15
Value,	dollars.. 8,393,117	48,677	158,125	833,179	142,748	71,132
HORSES:						
Total number,	88,922	1,570	2,354	7,547	2,542	1,006
Mature horses,	86,032	1,566	2,324	7,402	2,514	994
Yearling colts,	2,207	4	23	117	20	6
Spring colts,	683	7	28	28	8	6
Value,	dollars.. 12,012,512	177,330	375,350	1,048,025	355,476	117,322
MULES:						
Total number,	4,041	63	22	1,108	281	38
Mature mules,	3,960	63	21	1,100	278	38
Yearling colts,	61	1	1	7	3	1
Spring colts,	20	1	1	1	1	1
Value,	dollars.. 621,774	8,455	3,145	211,410	52,308	5,245

* Comparative data for June 1, 1900.

TABLE I.—FARMS AND FARM PROPERTY, BY COUNTIES, APRIL 15, 1910.—Continued.

		THE STATE.	Atlantic.	Bergen.	Burlington.	Camden.	Cape May.
DOMESTIC ANIMALS (FARMS AND RANGES)—Continued.							
3 AG	ASSES AND BURROS:						
	Number,	53	2	.....	1	1	2
	Value, .....dollars..	5,274	70	.....	15	15	30
	SWINE:						
	Total number,	147,005	2,200	2,497	11,923	3,870	1,451
	Mature hogs,	86,699	1,537	1,504	7,528	2,559	1,015
	Spring pigs,	60,306	663	993	4,395	1,311	436
	Value, .....dollars..	1,127,040	20,308	19,903	101,461	26,116	10,962
	SHEEP:						
	Total number,	30,683	4	346	1,695	69	3
	Rams, ewes and wethers,	16,795	4	216	1,011	35	2
	Spring lambs,	13,888	.....	130	684	34	1
	Value, .....dollars..	161,138	55	1,262	8,090	376	22
	GOATS:						
	Number,	574	60	24	22	4	.....
	Value, .....dollars..	4,614	382	350	110	20	.....
POULTRY AND BEES.							
	Number of poultry of all kinds,	2,597,448	101,373	101,818	189,582	62,883	46,109
	Value, .....dollars..	2,221,610	86,943	94,495	194,683	53,709	36,894
	Number of colonies of bees,	10,484	301	276	715	230	258
	Value, .....dollars..	41,560	1,167	1,813	2,534	910	809

* Comparative data for June 1, 1900.

TABLE I.—FARMS AND FARM PROPERTY, BY COUNTIES, APRIL 15, 1910.—Continued.

	Cumberland.	Essex.	Gloucester.	Hudson.	Hunterdon.	Mercer.	Middlesex.	Monmouth.
POPULATION,	55,153	51,886	37,368	537,231	33,569	125,657	114,426	94,734
*Population in 1900,	51,193	359,053	31,905	386,048	34,507	95,365	79,762	82,057
NUMBER OF ALL FARMS,	2,724	633	2,252	215	2,907	1,573	1,542	2,941
*Number of all farms in 1900,	2,223	1,003	2,225	358	2,930	1,573	1,750	2,772
NUMBER OF FARM, CLASSIFIED BY SIZE:								
Under 3 acres,	38	66	15	112	9	19	15	26
3 to 9 acres,	306	116	155	63	189	115	112	301
10 to 19 acres,	519	138	281	23	195	158	165	390
20 to 49 acres,	856	162	642	10	434	263	415	777
50 to 99 acres,	588	106	709	5	990	486	444	680
100 to 174 acres,	291	34	380	2	925	444	307	565
175 to 259 acres,	67	5	49	.....	140	68	63	159
260 to 499 acres,	42	3	18	.....	23	18	17	35
500 to 999 acres,	11	3	3	.....	2	2	4	7
1,000 acres and over,	6	.....	.....	.....	.....	.....	.....	1
LAND AND FARM AREA.								
Approximate land area,	320,000	81,280	212,480	27,520	279,680	144,640	199,680	306,560
Land in farms,	158,553	22,783	139,687	1,595	244,085	123,570	107,874	206,856
*Land in farms in 1900,	143,994	31,169	148,590	2,820	248,733	132,726	129,317	197,481
Improved land in farms,	96,829	13,130	106,812	933	203,862	103,761	82,678	156,583
*Improved land in farms in 1900,	101,830	18,975	117,554	1,928	208,986	108,747	96,782	155,716
Woodland in farms,	37,554	5,983	22,726	135	28,224	12,658	18,147	40,857
Other unimproved land in farms,	24,170	3,670	10,149	525	11,999	7,151	7,049	9,416
Per cent. of land area in farms,	49.5	28.0	65.7	5.8	87.3	85.4	54.0	67.5
Per cent. of farm land improved,	61.1	57.6	76.5	58.6	83.5	84.0	76.6	75.7
Average acres per farm,	58.2	36.0	62.0	7.4	84.0	78.6	70.0	70.3
Average improved acres per farm,	35.5	20.7	47.4	4.3	70.1	66.0	53.6	53.2
VALUE OF FARM PROPERTY.								
ALL FARM PROPERTY,	11,443,596	8,953,504	12,202,382	3,842,026	15,133,161	15,349,204	13,399,662	28,945,120
*All farm property in 1900,	7,790,044	10,446,574	9,345,856	4,151,283	11,729,412	9,786,647	9,412,799	16,911,243
Per cent. increase, 1900-1910,	46.9	71.4	30.6	77.4	29.0	56.8	42.4	71.2

* Comparative data for June 1, 1900. † Decrease.

TABLE I.—FARMS AND FARM PROPERTY, BY COUNTIES, APRIL 15, 1910.—Continued.

	Cumberland.	Essex.	Gloucester.	Hudson.	Hunterdon.	Mercer.	Middlesex.	Monmouth.
VALUE OF FARM PROPERTY—Con.								
ALL FARM PROPERTY—Con.								
Land,	5,481,234	5,806,545	5,661,465	2,364,775	5,167,122	7,087,145	6,786,065	14,803,850
*Land in 1900,	3,864,940	6,978,660	4,429,080	2,901,700	4,313,850	4,518,210	4,631,230	8,508,590
Buildings,	4,132,581	2,344,184	4,302,560	1,029,400	6,212,903	5,922,795	4,902,615	10,530,345
*Buildings in 1900,	2,798,520	2,678,460	3,449,850	915,250	4,908,570	3,641,700	3,519,430	6,101,810
Implements and machinery,	622,521	307,807	857,413	175,800	1,160,454	885,556	700,929	1,376,750
*Implements, etc., in 1900,	381,280	288,150	565,360	175,550	757,990	582,070	511,910	851,050
Domestic animals, poultry and bees,	1,207,260	494,968	1,380,944	272,051	2,592,682	1,453,708	1,010,053	2,234,175
*Domestic animals, etc., in 1900,	745,304	501,304	901,566	158,783	1,749,002	1,044,667	750,229	1,449,793
AVERAGE VALUES:								
All property per farm,	4,201	14,145	5,418	17,870	5,206	9,758	8,690	9,842
Land and buildings per farm,	3,529	12,876	4,425	15,787	3,915	8,271	7,580	8,614
Land per acre	34.57	254.86	40.53	1,482.62	21.17	57.35	62.91	71.57
*Land per acre in 1900,	26.84	223.90	29.81	1,028.97	17.34	34.04	35.81	43.09
DOMESTIC ANIMALS (FARMS AND RANGES).								
Farms reporting domestic animals,	2,374	544	2,132	131	2,778	1,501	1,490	2,788
Value of domestic animals,	1,053,000	460,480	1,254,257	259,172	2,324,222	1,315,606	914,066	2,054,416
CATTLE:								
Total number,	10,059	5,112	8,253	689	24,841	12,367	7,075	14,435
Dairy cows,	7,084	4,253	5,817	450	17,214	8,616	5,109	9,256
Other cows,	636	86	419	73	2,003	644	406	766
Yearling heifers,	878	261	462	10	1,700	1,040	480	1,088
Calves,	976	411	1,306	26	3,275	1,581	954	2,800
Yearling steers and bulls,	218	67	115	.....	373	230	73	268
Other steers and bulls,	267	34	134	130	373	230	73	268
Value,	357,786	240,604	317,072	29,657	905,225	463,373	285,580	527,757
HORSES:								
Total number,	5,200	1,484	5,026	362	8,961	5,359	4,310	8,864
Mature horses,	5,072	1,467	5,846	360	8,471	5,207	4,232	8,579
Yearling colts,	79	15	7	2	490	118	58	205
Spring colts,	49	2	8	.....	2	34	20	80
Value,	614,414	202,650	815,455	80,372	1,196,409	751,150	563,712	1,357,942

* Comparative data for June 1, 1900.

TABLE I.—FARMS AND FARM PROPERTY, BY COUNTIES, APRIL 15, 1910.—Continued.

	Cumberland.	Essex.	Gloucester.	Hudson.	Hunterdon.	Mercer.	Middlesex.	Monmouth.
DOMESTIC ANIMALS (FARMS AND RANGES)—Con.								
MULES:								
Total number,	224	28	313	.....	152	289	205	414
Mature mules,	219	28	310	.....	141	280	198	408
Yearling colts,	5	.....	3	.....	7	7	5	1
Spring colts, .....	.....	.....	.....	.....	4	2	2	5
Value,	dollars. 31,260	3,505	48,225	.....	18,766	36,961	23,780	56,152
ASSES AND BURROS:								
Number,	10	.....	9	.....	4	4	3	5
Value,	dollars. 220	.....	63	.....	600	150	700	600
SWINE:								
Total number,	5,437	1,388	8,694	22,411	20,539	6,817	4,813	14,132
Mature hogs,	3,307	804	6,311	13,361	11,400	3,898	2,532	7,949
Spring pigs,	2,130	584	2,383	9,050	9,139	2,919	2,281	6,183
Value,	dollars. 47,570	13,721	71,360	149,138	153,498	56,994	38,297	103,449
SHEEP:								
Total number,	301	.....	359	3	9,384	1,242	351	1,355
Rams, ewes and wethers,	211	.....	191	1	4,814	683	189	761
Spring lambs,	90	.....	168	2	4,570	559	162	594
Value,	dollars. 1,675	.....	2,002	5	49,691	6,856	1,883	8,169
GOATS:								
Number,	14	.....	22	.....	6	18	19	43
Value,	dollars. 75	.....	80	.....	33	122	114	347
POULTRY AND BEES.								
Number of poultry of all kinds,	183,950	38,408	137,648	17,338	327,729	146,639	109,858	198,418
Value,	dollars. 152,843	33,440	125,243	12,779	261,852	135,547	94,848	177,558
Number of colonies of bees,	456	219	369	5	1,779	624	222	490
Value,	dollars. 1,417	1,048	1,444	100	6,608	2,555	1,139	2,201

* Comparative data for June 1, 1900.

TABLE I.—FARMS AND FARM PROPERTY, BY COUNTIES, APRIL 15, 1910.—Continued.

	Morris.	Ocean.	Passaic.	Salem.	Somerset.	Sussex.	Union.	Warren.
POPULATION,	74,704	21,318	215,902	26,999	38,820	26,781	140,197	43,187
*Population in 1900,	65,156	19,747	155,202	25,530	32,948	24,134	99,353	37,781
NUMBER OF ALL FARMS,	1,949	729	854	2,046	1,947	1,659	647	1,811
*Number of all farms in 1900,	2,305	984	916	2,072	1,958	1,792	700	1,795
NUMBER OF FARMS, CLASSIFIED BY SIZE:								
Under 3 acres,	38	5	11	33	7	.....	25	5
3 to 9 acres,	148	109	185	135	169	53	136	103
10 to 19 acres,	224	142	160	157	192	64	120	112
20 to 49 acres,	425	201	232	373	324	135	206	220
50 to 99 acres,	474	126	151	634	577	240	117	439
100 to 174 acres,	448	82	68	581	543	689	31	765
175 to 259 acres,	136	19	28	103	99	326	8	128
260 to 499 acres,	42	27	11	26	25	135	3	34
500 to 999 acres,	9	14	4	2	7	15	1	3
1,000 acres and over,	5	4	4	2	4	2	.....	2
LAND AND FARM AREA.								
Approximate land area,	304,000	407,680	125,440	219,520	195,200	338,560	65,920	231,680
Land in farms,	168,019	53,648	46,304	168,696	165,966	238,311	23,405	183,967
*Land in farms in 1900,	206,759	84,856	69,820	175,202	167,663	256,896	29,076	201,688
Improved land in farms,	98,375	24,768	23,309	124,703	136,057	161,283	17,490	142,837
*Improved land in farms in 1900,	118,212	40,141	28,721	135,727	140,436	178,431	20,483	154,015
Woodland in farms,	49,292	22,021	17,122	24,494	19,121	51,229	4,414	28,496
Other unimproved land in farms,	20,352	6,859	5,873	19,499	10,788	25,799	1,501	12,634
Average acres per farm,	86.2	73.6	54.2	82.5	85.2	143.6	36.2	101.6
Average improved acres per farm,	50.5	34.0	27.3	60.9	69.9	97.2	27.0	78.9
VALUE OF FARM PROPERTY.								
ALL FARM PROPERTY,	20,587,875	3,101,639	8,167,394	12,044,186	21,704,497	10,861,800	7,999,542	9,953,147
*All farm property in 1900,	15,579,568	3,097,502	5,427,208	9,864,663	12,086,790	8,633,230	5,664,532	8,473,597
Per cent. increase, 1900-1910,	32.1	0.1	50.5	22.1	79.6	25.8	41.2	17.5

* Comparative data for June 1, 1900.

TABLE I.—FARMS AND FARM PROPERTY, BY COUNTIES, APRIL 15, 1910.—Continued.

	Morris.	Ocean.	Passaic.	Salem.	Somerset.	Sussex.	Union.	Warren.
VALUE OF FARM PROPERTY—Con.								
ALL FARM PROPERTY—Con.								
Land,	10,216,163	1,323,218	4,059,495	5,417,418	10,190,252	4,264,353	4,799,625	3,982,087
*Land in 1900,	7,477,170	1,501,760	2,976,860	4,636,570	5,108,230	3,661,480	3,179,870	3,686,210
Buildings,	8,196,365	1,329,550	3,354,825	4,100,755	8,595,855	4,093,737	2,546,500	3,877,331
*Buildings in 1900,	6,483,820	1,189,980	1,908,610	3,509,700	5,073,840	3,172,640	1,904,850	3,273,860
Implements and machinery,	828,081	159,933	297,237	711,366	997,790	553,836	225,715	627,226
*Implements, etc., in 1900,	631,020	139,380	180,160	501,780	644,880	393,010	266,880	466,570
Domestic animals, poultry and bees,	1,347,266	288,938	455,837	1,814,647	1,920,600	1,949,874	427,702	1,466,503
*Domestic animals, etc., in 1900,	987,558	266,382	361,578	1,216,613	1,259,840	1,406,100	312,932	1,046,957
AVERAGE VALUES:								
All property per farm,	10,563	4,255	9,564	5,887	11,148	6,547	12,364	5,496
Land and buildings per farm,	9,447	3,639	8,682	4,652	9,649	5,038	11,354	4,340
Land per acre	6.80	24.66	87.67	32.11	61.40	17.89	205.07	21.65
*Land per acre in 1900,	36.16	17.70	42.64	26.46	30.47	14.25	109.36	18.28
DOMESTIC ANIMALS (FARMS AND RANGES).								
Farms reporting domestic animals,	1,827	668	767	1,967	1,806	1,620	571	1,757
Value of domestic animals,	1,231,325	244,744	405,717	1,669,792	1,739,610	1,848,465	377,285	1,375,838
CATTLE:								
Total number,	13,424	2,554	4,373	18,399	13,301	33,353	3,613	16,228
Dairy cows,	8,574	1,698	3,177	13,095	9,199	22,972	2,924	11,209
Other cows,	1,133	175	272	1,131	1,027	2,581	136	1,369
Yearling heifers,	1,275	191	338	1,260	1,180	3,400	183	1,136
Calves,	1,754	403	382	2,185	1,355	3,407	299	1,858
Yearling steers and bulls,	449	31	67	210	330	547	36	329
Other steers and bulls,	239	56	137	518	210	446	35	327
Value,	482,285	88,700	177,666	694,534	589,891	1,244,109	161,820	573,197
HORSES:								
Total number,	5,141	1,210	1,599	7,062	6,433	4,785	1,464	5,743
Mature horses,	4,969	1,196	1,583	6,714	6,106	4,603	1,458	5,369
Yearling colts,	144	12	15	263	201	157	5	291
Spring colts,	28	2	1	85	126	25	1	83
Value,	675,777	136,665	213,348	859,289	1,043,150	544,289	203,505	680,882

* Comparative data for June 1, 1909.

TABLE I.—FARMS AND FARM PROPERTY, BY COUNTIES, APRIL 15, 1910.—Continued.

	Morris.	Ocean.	Passaic.	Salem.	Somerset.	Sussex.	Union.	Warren.
DOMESTIC ANIMALS (FARMS AND RANGES—Con.)								
MULES:								
Total number,	83	45	24	404	157	57	29	105
Mature mules,	81	45	24	389	153	57	28	99
Yearling colts,	2			11	3		1	5
Spring colts,				4	1			1
Value,	13,480	3,750	3,865	56,570	21,406	6,363	4,565	12,563
ASSES AND BURROS:								
Number,	3	2		1	1	3	1	1
Value,	201	130		30	100	2,300	25	25
SWINE:								
Total number,	6,154	1,424	1,036	7,428	7,409	4,958	1,059	11,365
Mature hogs,	2,903	970	552	4,502	4,083	2,661	666	6,657
Spring pigs,	3,251	454	484	2,926	3,326	2,297	393	4,708
Value,	40,659	15,460	7,957	57,327	67,469	37,406	7,297	80,688
SHEEP:								
Total number,	3,583	9	308	323	2,762	2,960	3	5,623
Rams, ewes, and wethers,	2,060	6	221	214	1,571	1,631	3	2,971
Spring lambs,	1,523	3	87	109	1,191	1,329		2,652
Value,	18,474	39	1,616	2,035	17,516	12,923	21	28,428
GOATS:								
Number,	28		163	2	14	107	8	20
Value,	449		1,265	7	78	1,075	52	55
POULTRY AND BEES.								
Number of poultry of all kinds,	141,352	55,604	58,263	158,802	199,814	136,679	47,369	137,812
Value,	112,115	43,789	48,953	144,323	177,405	97,297	49,904	86,990
Number of colonies of bees,	863	128	241	178	813	994	128	1,195
Value,	3,826	405	1,167	532	3,585	4,112	513	3,675

* Comparative data for June 1, 1900.

TABLE 2.—FARM EXPENSES AND PRINCIPAL CROPS, BY COUNTIES, 1909.

FARM EXPENSES.		THE STATE.	Atlantic.	Bergen.	Burlington.	Camden.	Cape May.
LABOR.....	Farms reporting,	23,448	889	827	1,852	861	344
	Cash expended,	8,633,475	212,724	429,194	1,127,557	346,823	78,623
	Rent and board furnished,	2,464,252	22,245	122,158	254,417	84,123	10,164
FEED.....	Farms reporting,	23,014	1,229	950	1,786	837	439
	Amount expended,	5,947,181	237,094	344,532	495,174	165,830	72,220
FERTILIZER.....	Farms reporting,	23,685	1,181	639	1,810	943	511
	Amount expended,	4,277,604	112,758	128,201	480,814	222,535	43,349
PRINCIPAL CROPS.							
Corn,	acres.....	265,441	4,554	2,128	29,589	7,290	4,090
	bushels.....	10,000,731	140,326	91,452	1,208,591	260,952	127,252
Oats,	acres.....	72,130	.....	185	715	196	24
	bushels.....	1,376,752	.....	5,093	14,086	3,460	393
Wheat,	acres.....	83,637	19	158	5,280	827	.....
	bushels.....	1,489,233	120	3,399	106,100	17,014	.....
Buckwheat,	acres.....	13,155	9	143	17	.....	.....
	bushels.....	212,548	128	2,671	147	.....	.....
Rye,	acres.....	69,032	55	840	15,818	1,252	1
	bushels.....	951,271	761	12,578	211,603	16,970	12
Potatoes,	acres.....	72,991	838	1,297	9,115	3,004	847
	bushels.....	8,057,424	65,561	84,018	1,073,371	323,372	73,932
Sweet potatoes and yams,	bushels.....	3,186,499	232,520	54	292,794	214,045	60,429
HAY AND FORAGE, total	acres.....	401,315	4,892	6,589	34,375	7,545	3,894
	tons.....	569,442	7,034	9,227	57,959	11,963	7,084
Timothy alone,	acres.....	117,008	.....	128	2,406	2,799	416
	tons.....	146,700	.....	166	3,978	4,241	733
Timothy and clover mixed,	acres.....	183,752	494	3,978	23,847	3,668	310
	tons.....	236,490	632	2,774	34,017	5,585	558
Clover alone,	acres.....	6,893	231	23	461	381	126
	tons.....	9,475	314	36	749	661	182
Other tame or cultivated grasses (exclusive of alfalfa),	acres.....	31,169	35	1,373	522	88	214
	tons.....	36,226	51	1,298	692	101	242
Wild, salt, or prairie grasses,	acres.....	33,146	3,537	241	1,308	81	2,406
	tons.....	47,742	5,190	247	1,753	95	3,629
Grains cut green,	acres.....	16,491	249	281	451	80	109
	tons.....	29,533	328	492	480	88	302
Coarse forage,	acres.....	9,868	91	117	1,071	330	198
	tons.....	56,828	157	361	10,685	918	1,254
All other hay and forage,	acres.....	2,988	127	18	155	118	115
	tons.....	6,448	196	41	400	274	184

TABLE 2.—FARM EXPENSES AND PRINCIPAL CROPS, BY COUNTIES, 1909.—Continued.

FARM EXPENSES.	Cumberland.	Essex.	Gloucester.	Hudson.	Hunterdon.	Mercer.	Middlesex.	Monmouth.
LABOR.....Farms reporting,	1,660	451	1,578	176	2,018	1,187	1,042	2,160
Cash expended,	375,734	322,115	547,969	255,638	358,429	402,966	357,464	912,267
Rent and board furnished,	71,070	77,902	153,757	71,712	146,742	161,764	120,071	270,716
FEED.....Farms reporting,	2,012	473	1,598	127	1,703	1,047	772	1,634
Amount expended,	385,828	358,979	308,595	98,333	228,744	201,533	188,274	337,207
FERTILIZER.....Farms reporting,	2,159	268	1,926	119	2,169	1,295	1,162	2,410
Amount expended,	366,718	40,445	626,244	38,588	152,230	277,742	252,949	542,742
PRINCIPAL CROPS								
Corn,	18,778	709	17,226	3	32,156	17,831	13,211	24,699
.....bushels..	657,515	34,445	598,205	220	1,083,816	740,348	504,157	1,099,656
Oats,	688	56	336	2	22,772	4,459	1,622	393
.....bushels..	13,972	1,504	7,015	80	459,418	86,639	25,262	11,105
Wheat,	4,319	28	1,257	.....	19,693	7,199	4,568	4,050
.....bushels..	76,987	688	20,289	.....	305,918	139,187	99,084	90,048
Buckwheat,	7	8	22	.....	4,367	41	105	30
.....bushels..	141	146	292	.....	78,679	907	1,607	454
Rye,	152	112	1,345	.....	6,832	4,494	4,651	10,770
.....bushels..	1,966	2,208	15,873	.....	80,679	75,165	82,865	162,323
Potatoes,	5,739	316	7,149	.....	950	5,479	4,845	14,784
.....bushels..	647,415	24,056	876,274	20	66,663	556,729	475,807	1,893,523
Sweet potatoes and yams,	411,611	.....	1,414,953	.....	185	26,197	6,951	51,862
HAY AND FORAGE, total,	21,374	7,231	15,966	325	40,974	26,450	25,899	27,673
.....tons.....	32,798	12,060	24,355	1,173	47,639	40,549	37,360	38,117
Timothy alone,	1,673	2,600	2,874	64	17,499	8,847	10,150	6,585
Timothy and clover mixed,	2,274	3,982	4,023	237	19,784	11,544	12,781	8,381
.....tons.....	7,267	697	10,509	48	21,781	11,513	8,618	16,731
Clover alone,	10,570	1,110	15,121	114	24,307	16,123	11,430	22,515
.....tons.....	662	.....	432	.....	953	224	138	293
Other tame or cultivated grasses {	892	.....	685	.....	1,022	320	148	435
(exclusive of alfalfa),	937	1,705	470	10	205	357	571	172
Wild, salt, or prairie grasses,	1,524	1,895	644	181	181	355	444	212
.....tons.....	9,694	1,340	771	188	38	72	1,434	274
Grains cut green,	13,077	1,891	881	540	39	60	2,107	409
.....tons.....	469	373	335	8	113	4,707	4,293	3,098
Coarse forage,	712	1,042	415	133	469	7,508	7,097	4,327
.....tons.....	411	502	454	6	240	564	387	170
All other hay and forage,	2,909	2,109	2,409	138	1,592	4,307	2,921	978
.....tons.....	261	14	121	1	145	166	308	350
.....tons.....	840	31	177	3	245	323	432	860

TABLE 2.—FARM EXPENSES AND PRINCIPAL CROPS, BY COUNTIES, 1909.—Continued.

FARM EXPENSES.		Morris.	Ocean.	Passaic.	Salem.	Somerset.	Sussex.	Union.	Warren.
LABOR.....	Farms reporting,	1,433	510	554	1,488	1,340	1,333	443	1,302
	Cash expended,	722,808	118,640	291,353	377,283	560,516	290,984	308,655	235,733
	Rent and board furnished,	143,141	42,236	113,929	160,267	164,964	105,054	62,766	105,054
FEED.....	Farms reporting,	1,389	498	746	1,529	1,096	1,453	474	1,222
	Amount expended,	385,678	97,328	259,880	375,837	232,375	753,234	236,432	184,074
FERTILIZER.....	Farms reporting,	1,214	492	343	1,779	1,423	394	326	1,122
	Amount expended,	106,393	29,122	49,276	524,778	148,154	19,803	47,988	66,775
PRINCIPAL CROPS									
Corn,	acres.....	11,020	4,043	1,363	24,940	18,748	10,616	1,947	20,500
	bushels.....	422,804	149,531	62,356	939,775	637,517	486,825	91,762	663,226
Oats,	acres.....	6,663	101	151	1,111	12,547	7,050	159	12,900
	bushels.....	131,697	2,817	2,690	21,319	214,532	134,224	3,821	237,625
Wheat,	acres.....	2,985	38	54	8,538	11,496	1,139	99	11,890
	bushels.....	48,820	713	1,204	166,538	195,798	16,815	1,973	198,538
Buckwheat,	acres.....	1,479	13	263	6	260	3,392	18	2,975
	bushels.....	25,295	193	5,260	90	4,902	48,695	375	42,566
Rye,	acres.....	3,119	1,420	399	163	5,792	4,606	137	7,074
	bushels.....	41,702	14,320	6,959	2,222	90,237	53,286	2,148	77,394
Potatoes,	acres.....	1,910	758	743	10,111	833	1,222	438	2,613
	bushels.....	117,225	59,875	46,198	1,303,088	58,372	96,913	17,748	197,264
Sweet potatoes and yams,	bushels.....	141	14,896	42	459,592	149	4	4	65
HAY AND FORAGE, total,	acres.....	27,442	6,912	8,087	26,486	38,694	41,191	6,209	23,107
	tons.....	33,629	11,956	10,486	41,067	42,227	62,093	11,291	29,375
Timothy alone,	acres.....	10,115	533	2,925	2,354	17,058	13,243	3,276	4,903
	tons.....	12,641	682	4,287	3,217	18,060	15,747	5,161	5,598
Timothy and clover mixed,	acres.....	10,267	2,269	1,742	16,347	19,297	9,735	1,886	14,596
	tons.....	11,124	2,745	2,234	24,895	19,199	12,476	2,303	16,657
Clover alone,	acres.....	406	113	48	452	714	651	10	575
	tons.....	476	176	71	734	794	1,025	18	728
Other tame or cultivated grasses {	acres.....	3,338	485	2,537	1,153	550	14,073	321	2,053
(exclusive of alfalfa),	tons.....	3,414	600	2,387	1,637	705	17,248	260	2,328
Wild, salt, or prairie grasses,	acres.....	2,065	3,375	267	46,39	242	755	124	295
	tons.....	2,221	7,573	261	6,411	234	784	75	265
Grains cut green,	acres.....	511	118	167	393	207	191	263	75
	tons.....	1,897	140	331	1,270	509	497	1,215	281
Coarse forage,	acres.....	547	6	334	1,096	339	2,226	283	496
	tons.....	1,436	18	845	2,804	2,211	13,390	2,168	3,218
All other hay and forage,	acres.....	193	13	67	52	287	317	46	114
	tons.....	420	21	70	99	515	926	91	300

TABLE 2.—FARM EXPENSES AND PRINCIPAL CROPS, BY COUNTIES, 1909.—Continued.

FARM EXPENSES.	Morris.	Ocean.	Passaic.	Salem.	Somerset.	Sussex.	Union.	Warren.
LABOR.....								
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Cash expended,	722,808	118,640	291,353	377,283	560,516	290,984	308,655	235,733
Rent and board furnished,	143,141	42,236	113,929	160,267	164,964	105,054	62,766	105,054
FEED.....								
Farms reporting,	1,389	498	746	1,529	1,096	1,453	474	1,222
Amount expended,	385,678	97,328	259,880	375,837	232,375	753,234	236,432	184,074
FERTILIZER.....								
Farms reporting,	1,214	492	343	1,779	1,423	394	326	1,122
Amount expended,	106,393	29,122	49,276	524,778	148,154	19,803	47,988	66,775
PRINCIPAL CROPS								
Corn,	11,020	4,043	1,363	24,940	18,748	10,616	1,947	20,500
bushels.....	422,804	149,531	62,356	939,775	637,517	486,825	91,762	663,226
Oats,	6,663	101	151	1,111	12,547	7,050	159	12,900
bushels.....	131,697	2,817	2,690	21,319	214,532	134,224	3,821	237,625
Wheat,	2,985	38	54	8,538	11,496	1,139	99	11,890
bushels.....	48,820	713	1,204	166,538	195,798	16,815	1,973	198,538
Buckwheat,	1,479	13	263	6	260	3,392	18	2,975
bushels.....	25,295	193	5,260	90	4,902	48,695	375	42,566
Rye,	3,119	1,420	399	163	5,792	4,606	137	7,074
bushels.....	41,702	14,320	6,959	2,222	90,237	53,266	2,148	77,394
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bushels.....	117,225	59,875	46,198	1,303,088	58,372	96,913	17,748	197,264
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tons.....	33,629	11,956	10,486	41,067	42,227	62,093	11,291	29,375
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tons.....	2,065	3,375	267	4,639	242	755	124	295
Grains cut green,	2,221	7,573	261	6,411	234	784	75	265
tons.....	511	118	167	393	207	191	263	75
Coarse forage,	1,897	140	331	1,270	509	497	1,215	281
tons.....	547	6	334	1,096	339	2,226	283	496
All other hay and forage,	1,436	18	845	2,804	2,211	13,390	2,168	3,218
acres.....	193	13	67	52	287	317	46	114
tonf.....	420	21	70	99	515	926	91	300

Vice-President Cox was in the chair during the reading of the Secretary's report.

Vice-President Cox—We have listened, I am sure, with a great deal of interest to the report of our Secretary, and it is now open for discussion. If any member present has anything to say on the report we will be glad to hear it.

Prof. Rider—Mr. Chairman, there are some things that occurred to me since listening to the report of the Secretary which it seems to me would be proper and profitable to consider.

We used to think when we employed specialists, and the State fostered different branches of agriculture, that the crops would be increased so largely the prices would be diminished. Here we find that the more help the State gives to these different departments of agriculture and horticulture, etc., the more they prosper, the better the prices they get.

Now, it is a problem that has not occurred to me directly until this morning in connection with the Secretary's report; my mind was directed to another industry in New Jersey that is not mentioned in the least, although most every other industry, including eggs and chickens, etc., is mentioned in that report and classified as deserving of the State being interested in, and there is one industry in which I am personally interested that has some six millions of dollars invested in it, that is not mentioned in our Secretary's report, that is not mentioned in the President's report, that is not mentioned anywhere, that produces a revenue in New Jersey of about a million dollars each year, and that is the cranberry industry.

Now, a great many of our cranberry growers are like some farmers; they have an idea that if we encourage it, extend the knowledge of cranberry culture, teach people how to grow cranberries, prices will get so low they won't have a market, it won't be worth while growing them. But my observation here this morning, from what I have heard and what I have concluded, would seem to show that the more we help along these industries, and the more they are benefited, the higher prices they will bring. Now, I do not see why cranberry growers should be in any different class from the rest.

Now, I would call your attention to the fact that the American Cranberry Growers' Association, of which I am secretary, and have been for about forty years, has always gone it alone; they have never asked the State for a dollar appropriation of any kind; they have gone into their pockets and made discoveries that have redeemed cranberry culture in New Jersey from its fallen condition.

It may be interesting for you to know that forty years ago New Jersey had the lead in the cranberry production in the country. It then led Massachusetts. It led Wisconsin. We had a blight, or what they called at that time, a scald struck us in New Jersey, and that practically knocked the business of cranberry growing into a cocked hat. The American Cranberry Growers' Association undertook an investigation as to the cause of that disease. After years and years of struggle, calling to their assistance probably all the scientific knowledge they could get, they discovered that it was a fungus disease, and we finally found a way to reach it. Under the present and existing circumstances, after what has been done, New Jersey is coming back to its place as the leader in the cranberry industry in the country. Cape Cod went beyond us during this period of our affliction.

Now, Massachusetts and Wisconsin both have made State appropriations, realizing the importance of this industry; they have made State appropriations, and they have established plants for the testing out of varieties of cranberries and the study of the diseases and insects which affect them, and New Jersey has done nothing.

Now, I believe that the cranberry industry of New Jersey has the facilities, it has the land, to lead the whole country in the cranberry industry. We have more land available in New Jersey than all the rest of the United States put together for cranberry culture, and I do not think it will hurt the cranberry grower if we study the business and develop it and make New Jersey the leader in that industry.

It may be interesting for you to know—you have heard the Secretary say that our land could be made to produce large amounts, the lands in New Jersey. Now, it has generally been

conceded that the land in the cranberry-growing sections of Ocean, Atlantic and Burlington counties are good for nothing else. That is the reason why it should particularly interest the State. We know the land in those localities where cranberries are grown will not produce corn, wheat, etc. But it will produce cranberries, and become quite as valuable as any of the best farming lands in Gloucester, Hunterdon or Mercer counties. That is another reason why I think the State should take a hand in developing the cranberry interests and placing it where it belongs, at the head of the cranberry-growing industry of the country.

Secretary Dye—Mr. President, so far as the cranberry report is concerned, in the last two years or more I have had something in my report about it, and sometimes the figures have been disputed by Brother Rider. Now, I want to get figures from him exactly as they should be and put them in the report in the proper place. This report has to be rounded out yet, and if he puts the value of the cranberry crop at a million dollars it ought to go in.

Prof. Rider—There is six million dollars, at least, invested in the cranberry business in New Jersey, and it may be much more.

Secretary Dye—I suppose you have all heard about some of the Western fellows who attended a conference here in the East who had never eaten an oyster and had never seen the shell; so I suppose there are many farmers here right in New Jersey who have never seen a cranberry bog nor a cranberry growing. What a godsend it is that those bogs there will produce such a valuable crop.

President Frelinghuysen—And we all eat them.

Secretary Dye—Yes. Oh, how good they are with turkey. That is what the early settlers said. I go a little farther than Brother Rider, though; I have more faith in those southern sandy lands than he seems to think I have. I have already spoken to the Road Commissioner, Col. Stevens, to open up at least two State roads through that vast pine belt, so that people as they go about the country can ride through there. They won't run over so many people, anyway, and they will see what we have got,

and perhaps we will be able to open up these lands for settlement. If we can get the trolleys fixed for carrying freight and develop this great cranberry industry that the brother has spoken of, what a State we will have.

Vice-President Cox—I do not think there will be any objection on the part of the Board to allowing the Secretary to supplement his report in regard to this cranberry question.

Prof. John B. Smith—Mr. Chairman, I agree with everything that Mr. Rider has said in regard to the great interests of the cranberry industry in New Jersey. As a matter of fact, the State has not aided the cranberry interests in this State directly; nevertheless—

Mr. Rider—Indirectly it has.

Mr. Smith—nevertheless there has been more work done in the State of New Jersey in the cranberry industry, so far as the insect side of it is concerned, than there has been anywhere else in the United States, from the Experiment Station. All the work that has been done in the Experiment Station is the basis of all the work that has been done in the United States on the cranberry insects, and on the methods of dealing with them, so that we have not been entirely idle in this State, and the crop has not been entirely neglected.

I think that, strictly speaking, the statement that has been made is subject to misconstruction, but I do not think for a moment that Mr. Rider meant to make a misstatement in the matter.

Mr. Rider—No. I am very glad that Prof. Smith called my attention to that. It is liable to be misconstrued. We ought to remember that we owe to Dr. Halstead of the State Experiment Station the discovery of that enemy which caused such destruction of our cranberry crops. We owe that to Dr. Halstead of our Experiment Station. He is the first man who discovered this fungus disease, and we know that Dr. Smith has helped us to find out how to fight the bugs and the worms, and all that we appreciate, and credit should be given for the good that has been done by Dr. Halstead in having discovered that enemy, and to

Dr. Smith in the work he did, in the other things, discovering that disease and how to fight it. The Government had the money at its command and they put men on the job, and he had the facilities and the means wherewith to work, and he traced it out and found out how he could attack it. We must give credit to those to whom it is due.

The Secretary's report was accepted and made a part of the annual report.

Vice-President Cox—I believe we have present with us this morning a gentleman representing the American Land and Irrigation Association, who wishes to occupy a little of your time. I feel quite sure that he can interest you, and, looking at the President's watch, we have some fifteen or twenty minutes that he might use to our profit and pleasure. Is Mr. McClurg present in the room? I take pleasure in presenting to you, gentlemen of the State Board, Mr. McClurg, representing the National Land Irrigation Association.

Mr. McClurg—Mr. President and members of the State Board of Agriculture of New Jersey: Someone asked me this morning: what was the American Land and Irrigation Exposition, and it came to my thought this morning that it was a New Jersey affair.

My summer residence is at Morristown, although I vote in Colorado; my office is in the Singer Building, New York, and I am Vice-President and General Manager of that Exposition. Mr. Franklin Dye, your Secretary, and Dr. Lipman, of the Experiment Station, are on our Advisory Committee, and Mr. Putnam A. Bates, whose home is at Madison, New Jersey, is the Director of the Agricultural and Implement Engineering Department of the Exposition.

When I took up my office in the Singer Building two years ago and noted the great vessels coming into that port from time to time, bringing three hundred thousand persons from Europe annually, many of them emigrants who came into New York, it occurred to me that it would be well if the progress of the soil of this country could be annually shown in the metropolis of America, the metropolis of finance and of traffic, that city which distributes several hundred thousand emigrants who come over to

the agricultural and different sections and cities of our country every year. That city whose newspapers reach eight million people is not only the metropolis of traffic and the distribution of emigrants, of finance and of population of our country, but also the centre of publicity of our country.

And I called upon a railroad president to ask him what he thought of the idea, and he said he would immediately direct his road to make an exhibit there, and I met with the Commissioner of Agriculture of New York State, and he at once said that he would endeavor to secure from the Legislature of New York an appropriation of ten thousand dollars to make an exhibit at this exposition. By invitation I met in Boston at the State House the Commissioners of Agriculture of the New England States and they showed me some apples, not so handsome as these that I see before me to-day, and they told me, jokingly, that those apples were grown in Oregon, in the Hood River Valley, and I said at once, "What is apple land selling for in Vermont and in Massachusetts and in Connecticut to-day?" and they told me that good apple land could be had at thirty-five or forty dollars an acre, and I said at once, "But these apples were grown, you say, in Hood River Valley, Oregon, and they are selling their apple land there at from five hundred to one thousand dollars per acre, when planted with apples. Why is it, gentlemen, that your land is selling at thirty-five to forty dollars an acre, except that you have not secured publicity for your land and its products?" And they decided to secure appropriations to make an exhibit, and there were at our Exposition in New York last year fine exhibits of the apples and the vegetables grown in Massachusetts and the potatoes grown in Maine and of the Vermont maple sugar and the tobacco grown in Connecticut, and land is selling at a thousand dollars an acre near Hartford, Connecticut, for the planting of tobacco, I am told.

Do you know that New England imported some of her food products for several years because they had given too much attention to industrials, and not yet have the railroads of New Jersey appointed an Agricultural Commissioner, and it is only recently

that the New York Central Railroad appointed an Agricultural Commissioner?

Yesterday at Albany, at the State Agricultural meeting, a gentleman said that a knowledge of agriculture was the best legacy we could leave posterity. And I thought of that when I listened to the most able and informing report of your Secretary to-day, and I was struck by the statement made by Mr. Rider, that cranberries should be grown more extensively in this State. Why, we have had millions of emigrants from Europe who never have seen a cranberry nor a turkey, and they are doing the work in your State and in Connecticut very largely, and those people must be shown the cranberries as well as the turkeys.

And why not show the products of this State in New York city? Why not establish that precedent? Everything has a beginning. Perhaps along the Atlantic seaboard we have been over-modest in showing our products.

A gentleman in Morristown said to me recently, when I asked him why New Jersey did not make an exhibit at our Exposition in New York of the land products of the State, "Why, New Jersey hasn't anything to show." I think that that gentleman should be admitted to the Ananias Club. (Laughter and applause.)

Do you know that they are selling this year wheat at eight dollars a bushel in Saskatchewan, Canada? James J. Hill, one of the great men of America, an empire builder, who has added three hundred billions of dollars to the wealth of our country by the extension of his railroads, gave me a thousand-dollar prize for the best wheat grown in the United States, which should be shown at our Exposition. And when James Edmund Chauncey, Superintendent of the Canadian Pacific, heard that, he went still one better and said, "I will give you a thousand dollars in gold for the best wheat grown in the two Americas."

A farmer in Risdon, Saskatchewan, started out growing wheat on a block of a quarter-acre. He sat up all night selecting his seed for best color and best weight. That farmer won the prize at our Exposition, and to-day is selling his product from a very much larger acreage for eight dollars a bushel for seed purposes.

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A man in Virginia won a thousand-dollar prize we gave for the best corn produced in the United States, for the largest yield per acre. His yield was examined by three witnesses who endorsed the certificate, and the field produced one hundred and thirty-seven bushels per acre, and he won the one-thousand-dollar prize given us by the International Harvester Company of America.

Mr. Horace Havemayer, of New York, the day before yesterday, gave me a thousand-dollar prize for our Exposition this year for the best sugar beets grown in the United States, and a hundred-dollar prize for the best sugar beets grown in this territory. Yet Howard Gould's gardener sent mangel-wurzels to our Exposition, competing for the sugar beet prize.

I believe all of you could learn lessons at our Exposition of the soil products of America.

Do you know that they grow nine crops of alfalfa a year in Texas, and that tea and camphor are grown commercially there?

There is a movement on foot, I believe, to remove the tariff from sugar, but Mr. Havemayer hopes that it will build up into a greater American industry than it is to-day.

I believe that the offering of prizes at our Exposition last year has increased the value of the agricultural products of America to the extent of billions of dollars. In one county in Maine, Aroostook, they have shipped thirty-two thousand carloads of potatoes, most of them coming to New York, a great many of them going farther south to the Southern States, and they endeavored to win our prize of a thousand dollars for potatoes last year, and they came to me with blood in their eyes, the representatives from Maine, because the prize was not awarded to Maine, but it went to British Columbia, and they told me that the judge of potatoes had not even taken the wires from the boxes of potatoes to examine them; and when I spoke to the judge about it—and he was recommended by Secretary Wilson to judge the potatoes, and had gone abroad to make a report on potatoes for our Government—he said, "I did not have to take the wires off the boxes." He said, "I will take the men from Maine and show them why I gave the prize to British Columbia

for potatoes." And the gentlemen from Maine afterwards apologized to me when they learned the lesson the expert taught them regarding potatoes.

The British Government in British Columbia is co-operating with the farmers there. They set aside one hundred and twenty-five acres there and planted each acre to its true potato type. Potatoes that would reproduce for years without losing their strength of type, and they selected the potato so that each potato was like another, as would be a pea in a pod like a brother or sister pea. They exhibited a hundred different varieties of potatoes and you could not tell one potato from another. Every potato was smooth; they had no protuberances; it was such a potato that the housewife could peel without losing any strength, without taking off a quarter-inch of peel, and the maximum strength of the potato was there. Now the British Columbia men are selling their potato seed at high prices this year; and the man who won the corn prize has sold his corn at ten dollars an ear. Now, I understand that we are to request that the tax on European potatoes shall be removed, because there is a shortage in this country of potatoes, in spite of the fact that New Jersey increased her acreage something like seventy thousand acres last year. Last November fifteen thousand bushels of potatoes came in one shipment from Scotland to this country, which would seem like carrying coals to Newcastle, for we know the potato originated in South America, in the Andes, and was brought from there to Spain and then to Switzerland and Scotland, and now comes back to our country. Perhaps we will be exporting potatoes before long.

I am afraid that I am taking too much of your time, gentlemen; there are so many things to speak of when one speaks of the great exhibition of the soil products of this country that one does not know where to begin or where to stop. But we had in New York, in Madison Square Garden, from November third to the twelfth, last year, two hundred and thirteen thousand visitors, and there were only one hundred and eighty-seven thousand visitors to the State Fair of New York, at Syracuse, last year.

I went to that State Fair with Samuel Brower, Secretary of the President of the New York Central, Mr. Brown, and he told me he had never been to a State Fair before in New York, and he was amazed at the showing there; and the gentleman to whom I referred a moment ago in Morristown would be amazed to know that you have six million dollars invested in cranberries in this State and that you grow those magnificent sweet potatoes; and Mr. Blake, of the Experimental Station at New Brunswick—who arranged our apple exhibits at the Exposition last year, and I would say we were very much indebted to him for his scientific arrangement—sent me some Jonathan apples the superior of which I have never seen.

Gentlemen, I am a New York city farmer; I am planting peaches in New Jersey, and I believe next year we will be able to show you here the best peach of the world. We have, through my agency, established the largest nut orchard in the world, near Tallahassee, Florida; we have seven hundred thousand dollars invested in that enterprise. And perhaps because I am a nut-grower and a peach-grower you will bear with me for the long time I have taken in addressing you to-day, but I do hope that it will be the sense of this Society that New Jersey should be represented at this Exposition.

Surely you can afford to bring a million people, peasant farmers, from Europe into your lands to cultivate them during the next few years. And how can you do it unless you show them what you have? How can you do it unless you can tell them that cranberry land can be had at fifteen or twenty dollars an acre?

I was told yesterday at Albany that the average cost of producing apples in New York State, where they are planted thirty feet apart and where they have been growing some years, the average cost of producing apples per barrel was \$1.53, and during the last three or four years the average profit per acre in apple orchards there was \$126; I believe it was approximately that.

Now, I understand, too, that you can produce such records here in this State. And I know some gentlemen in New York

who want to engage in starting a commercial apple orchard in this vicinity.

I believe that corporate farming will reduce the cost of living. I believe that there are many men in New York city, for instance, who would rather be growing apples than cutting off coupons. Certainly they can grow the apples in the sunshine and under the blue skies, and it is better to produce in the earth than to rob your Wall Street brother.

Now, our prizes at our Exposition last year amounted to something like ninety-five thousand dollars, and I want to say to you that we will give the handsomest prizes this next year ever in the history of American agriculture. We shall give a thousand-dollar prize for the best potatoes, a thousand dollars for wheat, and a thousand dollars for the best exhibit of apples, etc., etc.

Senator Gaunt has said to-day he believed that a larger appropriation would be made by your Legislature to advance the agricultural interests of this State, and I believe that the holding of the Land Show in New York has its philanthropic, its altruistic, benefits, and that in speaking of it I am in a measure not selfish alone in wishing to have this great State represented, as will be the other great States of our Union. In fact, yesterday the State Board of Agriculture of New York reserved a very large space in the Exposition, and I was assured by those who have charge of legislative matters there that New York again will be represented with us. I was told by the Secretary of Agriculture that, through the advertisement of the farms for sale in New York State through that Board, and their exhibit at the Land Show last year, they had sold something like twenty-three per cent. of the farms listed, which brought \$1,450,000, I believe.

I am one of the farmers who believe in publicity and advertising, and I trust, gentlemen, if you will, for the first time, I believe, make an exhibit in the metropolis of this country next year and show the products of your soil that you will greatly benefit the State and gratify yourselves.

I thank you, Mr. President and gentlemen, for your kindness. (Applause.)

President Frelinghuysen—Mr. Chairman, I am sure that we

are all deeply grateful to Mr. McClurg for his entertaining address and instructive remarks.

A word of explanation is possibly due to the members of the State Board as to why we did not take advantage of the opportunity last year and exhibit in Madison Square Garden.

A communication from a member of this Board came to the Executive Committee some time in February, or later. At that time the Legislature had already increased the appropriation for the State Board of Agriculture, the Farmers' Institutes and for other agricultural work. We felt that they had been very liberal; we were not informed as to the advantages of this Exposition as we have been to-day, and we believed that to go back to the Legislature and ask them for three thousand more was heaping it on just a little bit, and we decided not to take advantage at that time of the opportunity.

Later came a friend of mine, an old friend, Mr. Bates, who represented the Exposition and explained it to me. It was then, however, too late to retrace our steps, and the Executive Committee stood by their original determination.

But it was not an opportunity lost, possibly an opportunity postponed; and I hope that a full and free discussion of this matter will be had by the delegates and that the Board will afford the New Jersey farmers the opportunity of cleaning up every State in the Union, and taking all those prizes. (Applause.) I know that Senator Gaunt already feels that he has that potato prize won. (Applause.)

But I want to say in explanation as to why we postponed it last year; I want to say that I now am heartily in favor of it, and I believe the other members of the Executive Committee are, and, personally, I will do all in my power to promote it. (Applause.)

Vice-President Cox—Is there any further business to come before the Board at this time?

Secretary Dye—Mr. Chairman, here will be an opportunity to exhibit that much-talked-of cranberry. I suggested to Brother Rider a few days ago that if he could have such an exhibit of cranberries at the Land Irrigation Exposition in New York as he had at Atlantic City during the meeting of the National

Grange—cranberries in the berry, in the original form, in the crate, and then ices and wine and cranberry ice cream, and all that sort of thing—that it would be of the greatest benefit to the industry and a great attraction.

Prof. Rider—I was wondering whether there was a thousand dollars in it. (Applause.)

Secretary Dye—And, Mr. President, we want to advertise the fact that we are doing things in New Jersey. I dare not give any names here, and the farmers are very modest about telling things, where they have made great sums of money; but there is one farmer not so far away from Senator Gaunt's place who last year took seventeen thousand dollars off of a sixty-acre piece of potatoes. That is the way they are coming along. There are lots of them all over the State doing the same thing in the same proportion. Of course, the prices were high, but the farmers are growing potatoes, and growing them nice, and learning how to do it.

Now, I am heartily in favor of making an effort to show our products at this Exposition next Fall, and I think that we should undertake it early and grow crops especially for that purpose. Then let Brother Rider send down a little bit of that Jersey sand alongside of those crops, and show what is grown in that lighter soil. And people will say, "Well, I guess I will go over in New Jersey and get some of that twenty-five-dollar-an-acre land."

Mr. Rider—Mr. Chairman, I just want to say a word in connection with that. For many years New Jersey had been raising cranberries that had been sold in the market as Cape Cod cranberries, because they were the best cranberries then in the market, and always when you have seen the market reports you will have seen that the Cape Cod cranberries were ten to eleven dollars a barrel, while the New Jersey cranberries were seven and eight.

Well, recently the newspapers, as well as other people, have gotten onto it and the market reports to-day show that the New Jersey cranberries are quoted at the head of the list, the highest market price. So that New Jersey is gaining in her reputation.

Senator Gaunt—Mr. Chairman, I do not want to prolong this discussion, but I do want to say that if the New Jersey farmers

start out to make an exhibit I am quite sure that the other fellows will know that New Jersey is alive.

We know very well that on two different occasions when the National Grange met in this State, just a little local organization we had here amongst ourselves put up an exhibit at Atlantic City that has never been put down in any other exhibit that has been set in any part of the country. There was in that case no financial benefit to be derived; that is, in the way of prizes; that was State pride; it was because the farmers in our State realized that we wanted to do things and we wanted to show other people that it could be done.

Last year you will all remember who were present in Atlantic City at the exhibit that was held there for the benefit of the National Grange that a gentleman who had had thirty years' experience in attending exhibitions of that kind in various parts of the world said to me that he never yet had seen one that equalled the exhibit that was placed there by the farmers, the patrons and their wives of New Jersey. You will remember we had the Steel Pier and the reception room underneath. There were several carloads of Jersey products placed there, and there was not a dollar awarded in premiums or prizes to the farmers of New Jersey. The patrons who were members of the organization desired to show that they were able to accomplish results, and I am quite sure if they take hold of this matter that all the States will know that New Jersey is on the map, which they hardly know at the present time, because we have been so modest that we were afraid to let other people know what we were doing. (Applause.)

Vice-President Cox—There will be further opportunity to discuss this question and other remarks touching upon it and discussions pertaining to it later on, and if there is no objection the Board will now rise until two o'clock this afternoon.

The Board then took a recess until two o'clock.

FIRST DAY—SECOND SESSION.

The meeting was called to order by the President.

The roll was called, but disclosed no new delegates since the morning session.

President Frelinghuysen—The Secretary has an announcement to make.

Secretary Dye—The announcement is with reference to the next topic on the programme, "Communication from the Governor." A committee of the Executive Committee, composed of the President, the Secretary and the Treasurer, waited on His Excellency two or three weeks ago, when we were appointed, and asked him to be present at this meeting and address the farmers. The Governor had made a previous engagement in the State of Michigan—he is away now, I believe, on a three-day tour of speech making there—and he seemed to regret the fact that he was called away at this time. Then I said to him, "Governor, we will expect you to address the Summer meeting of the Board next Summer." And he said, "I shall be glad to do it." He said, "However, I will send you a communication or a letter at this meeting." I suggested I would give him the figures of our work of the year, which I did, but we have not received the letter. Perhaps with the incoming of the Legislature he has had so much other business that it has escaped his mind; so that will explain why we have to dispense with the Governor's message.

President Frelinghuysen—The next matter in order on the programme is an address by Dr. Demarest, President of Rutgers College, in memory of Dr. Voorhees.

Dr. Demarest—Mr. President and members of the State Board of Agriculture: It seems eminently proper that a few minutes should be given to the thought of one who was so close to you and so useful to your society and to the interests that you represent, and so recently your President.

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I appreciate the opportunity of standing before you to say that word, as a long-time personal friend of his, as a colleague of his in educational work, and as one more or less familiar with his work in your field of activity. So much of our esteem for him was the esteem of the personal friend that it does seem a little cold to simply speak of him as a man and as a worker in the world's work, and yet it has seemed to me as if that might be the best way for me to proceed; in very clear and simple and brief language to give the word to him which might be proper.

Memorial to Dr. E. B. Voorhees

BY DR. W. H. S. DEMAREST, PRESIDENT RUTGERS COLLEGE, NEW BRUNSWICK, N. J.

Edward Burnett Voorhees was born June 22d, 1856; he died June 6th, 1911. He was graduated from Rutgers College with the degree of Bachelor of Arts in 1881 and in 1900 he received the degree of Doctor of Science from the University of Vermont. He became Professor of Agriculture in Rutgers College in 1890 and Director of the State and College Experiment Stations respectively in 1893 and 1896, which offices he held until his death.

Let me speak of him briefly in three or four of the especial relations or circles of his life. First the College. He began relation with it as an undergraduate. A singular number of those with him in later relation of instruction or administration were with him in his student days. He was a classical student, as we have familiarly used the term through the years: he took the Arts degree, which demanded for its conferring Latin and Greek; and from such classical training he passed speedily into the research field of scientific agriculture and so to his eminent place in agricultural education: standing thus as one of the many high examples of great distinction in scientific and technical profession built from the broad foundations of a classical culture. As a graduate, through thirty years he gave to his college a loyal and energetic love. After but a single year's service elsewhere, in 1882 he came back to take up life and work within the walls where he had studied, and there his home and his work remained to the end. It was inevitable that out of his marked ability and success in his chosen line of study and service he should become Professor of Agriculture in the college where his experiment research and direction were maintained. Thus he entered the Faculty in 1890, succeeding the lamented Dr. George H. Cook who had so notably inaugurated the work of agricultural experiment and instruction in New Jersey and at Rutgers College. Though the Federal Act of 1862 had established agricultural education in each State of the Union, many States, including New Jersey, had practically advanced but very little in the matter when the last decade of the last century opened. From that time, with the founding of College Experiment Stations, also by Federal Act, the advance has been in many States swift and astonishing. During these twenty years Dr. Voorhees, as Professor of Agriculture, fulfilled and advanced in Rutgers College this line of instruction with a power and aptness commanding wide recognition. And especially in the last half dozen years did he, as head of the department, with the administration of the college, successfully promote large things for this field of learning, chiefly perhaps in leading the State to the establishment of the Short Courses in Agriculture. With all his zeal and success in his specific field of work, he always carried the standard of his Alma Mater, and by manifold efforts in her behalf as well as by the honors which came to him, her son, exalted her in the college world.

Second, the State. Out from the College and Station centre his work and his personality pervaded the State and even played their part in the life and progress of the nation. In the most material way the resources of the State were in far degree developed by that which came forth from his brain and hand. To Dr. George H. Cook are often and truly attributed the discovery and outbringing of the natural wealth of the State, its minerals, its underlying waters, its soil fertilities. In this way of material but vastly important service of the people, Dr. Voorhees was a worthy successor. Under his leadership, potent in the varied sections of the State, such ideas have prevailed and such methods obtained that the fruits of men's labor have been vastly increased and the homes and industries, and the commonwealth itself, distinctly enriched. Such result was born of the work done by him and his associates here, and the word sent forth as to it, and as well of the education of the people by him and his associates in their home places by public address and personal conference. It was his custom to go ceaselessly about the State, and his visits to communities and clubs were a vigorous campaign of scientific truth. Thus not only were great and continuous material results achieved, but, as well, a singular personal influence was created and wrought widely for good. Like Dr. Cook, he became widely known throughout the State, and throughout his wide acquaintance his character and word were a strong influence for the general good. It is difficult to measure the reach of such a life, but it is safe to say that there are few men in the life of the State who have been more warmly regarded, more surely trusted and more plainly followed than he. This singular hold upon the people and service of them was recognized in many appointments by the State itself and by organizations within its bounds. Such official places were not only the consequence of his unusual activities and acceptance, but the vantage point for still more effective work for the public good. Thus he was president of the State Board of Agriculture for many years, and frequently served on boards and commissions charged with the care of related interests. His counsel was always sought and respected; he it was who largely shaped policies, formulated plans and guided the movements of such enterprise.

Third, The World of Science. It is plain that in all this distinguished relation to the State he was standing in high connection with general scientific movements and with the welfare of the world at large. He was a student, and the products of his scholarly thought and research were the enrichment of the world-wide field of learning. He was the author of books which became conspicuous promoters of the cause he represented and authorities in their especial lines. In 1902 he received the Nichols Research Medal for the best paper containing results of chemical research submitted to the American Chemical Society Journal. He was a member of various learned societies, and read papers before them both in this land and abroad, and abroad as well as here, was accorded the honors due an eminent scholar and scientist. From 1897 to 1904 he was secretary-treasurer of the American Association of Agricultural Colleges and Experiment Stations, and in 1904-5 he was president of it. In the rapid movement of agricultural science from an unknown, and then but lowly, place to its present lofty place among the sciences of the schools and of the national life, he thus bore his worthy and far from inconspicuous part. And in our midst, in our college and State life, he has nobly represented the claim, long denied and now undisputed, of agricultural education to a place coequal with other academic studies.

Fourth, The Church. In the midst of engrossing work, surrounded by constant public demands, and challenged by the material problems of science, he found the time and had the spirit to enter steadily and strongly into the life and oversight of the church. By membership he shared its great undertaking. By choice of his fellow members and official ordination he twice filled the office of deacon and four times the office of elder, retiring from his last active term in the latter office just as his final illness first came upon him. To the business of the church he gave his generous attention and her spiritual interests he bore upon his heart. All this, then, is to say

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that he was a man of the fear of God and of faith. Born in a Christian home, trained in the nurture and admonition of the Lord, confessing his Lord in his maturity, he treasured through life the gospel of Christ and honored His church as the pillar and ground of the truth.

Dr. Voorhees was diligent in business, fervent in spirit. A supreme characteristic was his devotion to work, his incessantness in the affairs of his vocation. His interests were many and wide. His chosen calling brought him into manifold relations, many communities of men, many places of responsibility. Any of them, as an exclusive work, might have commanded his energy of all the days and years. Each of them commanded its place, and its degree of his care and effort; and the record of any week or month showed his versatile and unremitting zeal. The world's work was his work, and he cast in all his living. Some have said that he overworked; perhaps that is so; perhaps that is not quite the right way to put it. In any case he did the day's full work without measure, was diligent in business. Nor was this a work without the fervor of spirit, the warmth of heart, which makes the work twice worth while and every action fine. His was a rare enthusiasm. He burned with devotion to the cause to which he gave his life. An ardent belief in the resources and opportunities with which he had to do urged him on, inspired his far-reaching efforts, and became the prophecy of great accomplishments. He was ambitious and confident and courageous. His heart, we say, was in his work; the joy of the pioneer and of the conqueror was his; the mastery of the earth beneath his feet was a thing of the spirit as of the brain and hand. His was not a long life, but it was crowded full. He served his generation and his works do follow him.

Secretary Dye—I move the acceptance of the paper read by Dr. Demarest, and that it become a part of our report, and also move a vote of thanks to Dr. Demarest for his kindness in the preparation and the delivery of that address here to-day.

The motion was carried.

President Frelinghuysen—The Secretary will call the roll of delegates for the appointment of a committee to nominate officers for the ensuing year; the members present from each county nominating the members of this committee; and the committee will report when ready. The Secretary will call the roll.

The following nominations were made, viz:

Atlantic County—Mr. J. L. Purzner.
 Bergen County—Mr. Arthur Lozier.
 Burlington County—Mr. Amor J. Gaunt.
 Camden County—Mr. Harry Hurff.
 Cape May County—Mr. Ralph Schellinger.
 Cumberland County—Mr. Arthur Seabrook.
 Essex County—Mr. H. F. Harrison.
 Gloucester County—Senator Gaunt.
 Hunterdon County—Mr. Roscoe DeMott.
 Mercer County—Mr. Walter S. Haines.
 Middlesex County—Mr. George W. Mount.
 Monmouth County—Mr. John H. DeBois.
 Morris County—Mr. E. C. Hopping.
 Ocean County—Mr. R. C. Graham.
 Passaic County—Mr. Frank T. Torbet.

Salem County—Mr. Maxwell Busby.
Somerset County—Mr. G. B. Randolph.
Sussex County—Mr. George W. Van Horn.
Union County—Mr. Hart S. Van Fleet.
Warren County—Mr. Charles M. Oberly.

During the nomination of this committee President Frelinghuysen called Vice-President Cox to the chair.

The President's Address.

As President of the State Board of Agriculture I am expected to address you and give a report of the work done by your officers and Executive Committee.

Each year this annual convention of delegates from the County Societies is held, officers are elected, and an Executive Committee appointed, this Committee acting in an advisory capacity, a sort of a cabinet to the president and secretary of the State Board, who with them carry on the work of the Board for the year until another convention is held.

One year has passed since you honored me. I came to you a comparative stranger to the work, but the secretary and the Executive Committee and I have worked shoulder to shoulder, and this co-operation has been. I hope for the improvement of the agricultural interests and welfare of the State.

In reciting to you the progress made during the year, and giving a report of our stewardship, whatever merit you find in the work, the greater credit must be given to the secretary and your Executive Committee.

In all human progress in the advance of civilization, there are hidden forces and figures that are the units that make for such advancement. men who silently, yet effectively, do the work, men who are seldom rewarded, men upon whom the searchlight is never thrown, men who do their duty, their only reward being their satisfaction at results achieved. There is such a man who has labored effectively for many years for the development and progress of the State. I mean Franklin Dye, secretary of this State Board. Early and late at his post, never leaving anything undone, no longer a young man yet outstripping men younger than he, a service that extended over twenty-five years. Fighting the farmers' battles year in and year out. When the tide set heavily against the agricultural interests, we find him spurring the county societies to greater activity, now running the institutes, now issuing bulletins, always courteous, always alert. Many farmers of this State discouraged and ready to give up, through the encouraging words of this man have kept their hand on the plow until success came.

Mr. Dye has done more than this. He has raised his voice time and again for higher standards and has set an example by his life, which is a sermon in itself. True as steel and solid as gold. I take occasion to pay this tribute to him, because I have during the year past observed his great services to the State and to mankind, which he so modestly tries to hide.

New Jersey has had in the past strong and forceful men promoting agricultural interests, Dr. Voorhees, Dr. Cook, Ward, and many others. The development and progress of the past are due largely to their efforts. We have no cause to be discouraged as to the future. With Vice-President Cox and the remainder of the Executive Committee of last year, these determined, thoughtful men by their wise counsel have guided your affairs wisely and well. In active co-operation has been Dr. Lipman, so splendidly equipped by a knowledge of New Jersey and its needs and conditions. Since our last meeting made director of the New Jersey Experiment Station, he brings to the service of the State business methods and practical ideas of great value.

We are thankful that Senator George F. Gaunt was returned to the Senate, where he will continue to represent the farming interests in the future as he has so ably done in the past. As his colleague for three years past, I can say no servant of the State so richly deserved re-election as he, and it is a source of great encouragement that our interests will be represented again by him for three years to come.

The officers and Executive Committee have met periodically. Secretary Dye will tell you of the Institute work and the report of the committee will in detail tell you about its proceedings. By reason of the laws relating to plant pathology, bees and poultry, and cow tuberculosis, it was necessary to meet frequently. The men for the positions which these laws created were according to the Attorney-General's opinion, subject to Civil Service approval. The bee and poultry and cow tuberculosis men were easily found, but finding the plant pathologist was more difficult. Certain scientists in Washington who took the examination, seemed to think New Jersey was an agency to compel the Federal Government to increase their salaries. The Committee finally procured Dr. Melville T. Cooke from Delaware. Dr. Cook is an acknowledged authority in this science, and will at once take up the great fight against the tree, potato and plant blights that are so troublesome and dangerous.

The selection of these men, together with other men, and the duties of the Executive Committee, has led me later in this address to venture a suggestion for certain reforms, which I think will improve our system and make it less cumbersome.

That unfortunate occurrence, the fire at the State farm, seemed an insurmountable obstacle to the holding of the mid-summer field meeting. After the disaster I suggested the Raritan Valley Farms, as a good place, but a slight but tedious illness of mine postponed it. The thoughtful gentlemen of the Committee urged, owing to circumstances, against my taking the trouble to hold it. I felt, however, to let the interest lag was worse, and we decided to hold it, and did so on September 20th. The addresses were most instructive and beneficial. I appreciated so many coming. I know I enjoyed it and hope you did, and that those of you who did not come will come next time. Shortly after the beginning of the year, the Committee were approached and asked to conduct an exhibit of the American Land and Irrigation Association to be held at Madison Square Garden. We felt that the legislature had been very generous and to ask them for \$2,500 or \$3,000 more at that time was asking too much. Some expressed the opinion that New Jersey should give an exposition of her own. Others that the money expended would not return its value to the State. We decided against it. This fall this exposition will be repeated, and it might be well to discuss the question and advisability of New Jersey making an exhibit at the exposition this year.

The rapid increase in population in New Jersey has made the promotion of agriculture one of the great problems of the day. Your officers and Executive Committee feel greatly encouraged at the way the County Societies have actively carried on the work. And yet there are several counties, one the most important and largest in the State, that absolutely ignore all our efforts to induce them to organize active societies and improve the conditions. How to create more interest in these sections might be a profitable subject of discussion at this meeting.

An Englishman has said there are two words which indicate the great obstacles to the future progress and development of the United States of America. They are *haste* and *waste*. But have we not recently become alive to this condition in the country. Even the humblest schoolboy is taught about the conservation of natural resources. It has become the spirit of State and Federal Governments.

The preservation of our forests in order that the land may retain its moisture. Conservation of potable waters in order that this great element of human existence may be maintained without stint to future generations.

We are establishing a sanitation policy in compelling the building of trunk

sewers and modern disposal fields to keep our streams pure and protect the health of the people. We are by a system of inspection protecting the farmers against the menace of diseased cattle being imported into the State, so that tuberculosis may be minimized, and in many other ways we are curbing waste and extravagance through legislation and missionary and educational work.

But the great question of the hour in conservation is the necessity of keeping and enlarging the tillage areas of State and nation. This is the most important problem of the hour. The spirit of this government has been toward the encouragement of the people, and a return to the soil. This rapid increase in our population and how to feed them is not the problem of the future but of to-day. We find England, France, Germany and other nations in Europe wrestling with the great question of colonizing and endeavoring to find an outlet for their increased population.

We find agencies in the West sending their missionaries to the uncultivated areas of this country promoting an interest in soil production. At the Inter-State Fair held in Trenton last year representatives from the Live Stock Association of America were present, and I was urged to bring to the attention of this Board the advantages of the Eastern farmers raising beef cattle, the statement being directly made that the grazing areas of the middle west and south would be insufficient in a few years to raise enough beef for human consumption.

This condition seems to make almost prophetic the words of Lord Beaconsfield, the great English Commoner, afterwards Premier of England, uttered over eighty years ago:

"Protection for native industry has been established for centuries. It had prevailed, and still prevails, in spite of the arguments of freetraders all the world over, and under all forms of government. The principle of it has been and is that no country is in a sound or safe condition which cannot feed its own population independent of the foreigner."

How has New Jersey fared in the last decade in comparative growth? New Jersey ranks forty-fifth in area and eleventh in population among the States and Territories of Continental United States.

According to the census of 1910, 53.5 per cent. of the total land area of New Jersey was in farms. The average value of farm land in the State was \$48.23 per acre. On making a more detailed examination of the distribution of arable land, and the value of farm land in the State, we find that less than 20 per cent. of the total area of Hudson and Ocean counties is farm land, and that but 13.2 per cent. of the total land area of Ocean county is farm land. We find, likewise, that in the counties of Passaic, Bergen, Essex, Union, Atlantic and Cape May, the proportion of farm land is from 20 to 40 per cent. of the total land area.

The relatively small areas of farm land in the northern counties of the State are due to the important urban interests and the rapid growth of towns, boroughs and villages, inhabited by men whose business interests lie in cities like New York, Newark, Brooklyn, Jersey City, Paterson, etc. On the other hand, the relatively small areas of arable land in Ocean, Atlantic and Cape May counties are due to the natural poverty of the soil itself, and to the relatively great cost of improving these poor soils. The proportion of land areas in farms in the counties of Morris, Middlesex, Burlington, Camden and Cumberland is between 40 and 60 per cent. On the other hand, Sussex, Warren, Monmouth, Gloucester and Salem counties have an area of farm land which is equivalent to 60 per cent. or more, of a total land area. In other words, of the 4,892,018 acres of the total land surface of the State, the counties of Ocean, Atlantic and Cape May contain 937,857 acres. Of these 47,903 acres, representing the land area of Ocean county, are arable to the extent of less than 20 per cent., and 533,954 acres, representing the total land surface of Atlantic and Cape May counties, are arable to the extent of between 20 and 40 per cent. If we consider, in addition to the facts noted above, that the eastern portion of Burlington county corresponds very closely to the land of Ocean county, we find that

probably more than a million acres, or more than one-fifth of the total land area of the State is arable to the extent of less than 30 per cent.

As to land values, we note that the counties of Ocean, Cape May, Hunterdon, Warren and Sussex, containing in all 1,427,799 acres of land, were worth between \$10 and \$25 per acre in 1910, or on an average of less than \$20 per acre. In addition to these areas, the counties of Burlington, Atlantic, Cumberland, Salem and Gloucester (containing in all 1,638,243 acres) are worth between \$25 and \$30 per acre, or an average of less than \$40 per acre. It seems, therefore, that about 3,000,000 acres, or considerably more than three-fifths of the total land area of New Jersey, were worth, in 1910, less than \$40 per acre. This is the more striking if we remember that this land area includes some of the finest potato and trucking soils of South Jersey, located in the counties of Salem, Gloucester and Burlington, and that this area includes also as fine fruit land as exists anywhere in the east, and located in the counties of Hunterdon, Warren and Sussex, also fine pasture land as may be found anywhere along the Atlantic seaboard, and located in the limestone valleys of Sussex, Warren and Hunterdon counties, we are all the more surprised that the true value of farm lands in New Jersey is not receiving due recognition. Furthermore, the farm lands in the counties of Mercer, Monmouth, Middlesex, Somerset and Morris, located within fifty miles of New York city, or less, were worth, in 1910, between \$50 and \$75 per acre, or, on the average, less than \$65 per acre. This average value includes much land at present in a high state of cultivation, yielding large returns and more accessible for the finest markets in America than any land in the east.

There are only three counties in the State, relatively small in area, whose farm land has an average value of more than \$100 per acre; these are the counties of Union, Essex and Bergen. However, in other cases, land values are affected by factors other than those of agricultural value. Considering the land values in the State, as a whole, we find that between 1900 and 1910 the population of the State increased by 653,498, or 34.7 per cent. On the other hand, the total number of farms decreased by 1,163 or 3.4 per cent., and the area of cultivated land decreased by 267,109, or 9.4 per cent.

Contrary to these figures, farm property, including land, buildings, implements, machinery and live stock, increased in value by more than \$65,000,000, or 34.5 per cent. In spite of the decrease in the number of farms and in the decreased acreage of cultivated land, the value of buildings increased in the ten years by \$23,761,000, and the value of the land itself increased by \$30,782,000. In other words, the average acre of land in New Jersey increased in value about \$15.37, or 46.87 per cent. Also the farm equipment, including implements, machinery and live stock, increased about \$10,755,000. The average value of land rose in the same period from \$32.86 per acre to \$48.23 per acre. Taking these figures as they stand we find that the total number of farms in the State has shown a decrease, and that the total number of cultivated acres in the State has also shown a decrease, since the cultivated area is now less than it was in 1850, and considerably less than it was in 1870. The census returns of 1880 show that there was in the State at that time more than 2,000,000 acres of improved land, or 71.5 per cent. of the total farm area. In 1910 the area of improved land was only 1,803,336, or 70.1 per cent. of the total farm area. The population of New Jersey in 1880 was 1,131,116; in 1910 it was 2,537,167. The number of farms was 34,307 in 1880 and 33,487 in 1910. The area of farm land in 1880 was 2,929,773, and in 1910 it was 2,573,857. Thus there was a decrease in both the number of farms and in the total farm area as well as in the area of improved land, whereas the population of the State more than doubled in these thirty years. In 1880 the total value of the farm property was more than \$212,000,000; in 1910 the total value of farm property was more than \$254,000,000, and that in spite of the decreased number of farms and the smaller farm area. Prior to 1910 the greatest value for farm property is shown by the census of 1870. That was the period after the

Civil War, when farm properties were at their highest, and before the westward movement of our rural population had reached its maximum. After that there was a steady decline in the value of farm property in New Jersey, from 229,000,000 in 1870 to 182,000,000 in 1890. After that the natural advantages of New Jersey lands as to location, markets, and the more intensive and intelligent methods of farming followed by the farmers of New Jersey brought back a measure of prosperity to agricultural lands. Within the past ten years progress in agriculture has been most marked, as shown by the increased value of farm land and the increased returns per acre. The more intensive methods of farming are shown by the fact that there was a relatively large increase in investment in buildings, live stock and implements. The increased value of land and buildings in the last decade was 33.5 per cent. The increased value of implements and machinery was 40.5 per cent., and the increased value in domestic animals, poultry and bees was 39.6 per cent. The average size of the New Jersey farm decreased from 82 acres in 1900 to 76.9 acres in 1910, showing a decrease in area of 38.3 per cent. On the other hand, the value of the average farm increased from \$5,470 to \$7,610.

We find, comparing the values of the various kinds of domestic animals and of poultry and bees, the following increases during this period of ten years:

Cattle—1900, \$7,199,107; 1910, \$8,393,117. Not a very great increase.
 Horses and Colts—1900, \$7,592,274; 1910, \$12,012,512. An increase of over \$4,000,000 in value.

Swine—1900, \$926,179; 1910, \$1,127,040. Not such a great increase.

Sheep and lambs—1900, \$202,590; 1910, \$161,138. A decrease.

Poultry—1900, \$1,300,853; 1910, \$2,221,610. About \$900,000 increase.

Bees—1900, \$39,219; 1910, \$41,560. An increase of about \$2,000.

I cite the latter comparison in view of the fact that the State has recently appointed a Department of Bee Industry, an industry that years ago was flourishing when buckwheat was largely raised in the State.

What results have been attained during the past year. Promoting any industry requires money and proper laws to regulate its expenditure. Our Legislature has done much in passing laws for the development of agriculture. The farmers have had a stalwart champion in the Legislature in the person of Senator Gaunt, who with several others have secured many beneficial laws. No one can realize the immense work of these men, who have induced the Legislature to favorably consider the promotion of this branch of the State's commerce.

New Jersey in comparison with New York State, Wisconsin, Ohio, and at least ten other States, received a very small proportion for the development of agriculture. For maintenance New Jersey received \$29,625 last year.

California appropriated,	\$738,000
Wisconsin appropriated,	806,000
Illinois appropriated,	525,000
New York appropriated,	230,000

It would seem reasonable that New Jersey by this comparison should receive more.

By reason of the laws of last year additional work was placed on the Executive Committee, the President and the Secretary. The law which organized the State and County Boards is a very old one. It was enacted when the State was much smaller. Since that time the growth in population has been great, and other commissions and departments have been created relating solely to agriculture. The Experiment Station, Poultry Department, Bee Inspection, Plant Pathology, Entomology, several commissions under authority of separate boards of managers, viz., Commission on Tuberculosis in Cattle, State Forestry, Live Stock and others. Under laws passed last year, it became the duty of the officers and Executive Committee to select men to execute these laws. With so many commissions and depart-

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ments the system has become complicated, confusing and cumbersome. What is everybody's business is nobody's business. Up to the present time the agricultural laws have been excellently administered. But as time goes on the system is bound to be conflicting. It is not reasonable to expect men to voluntarily neglect their own affairs, sacrificing their time to work that should be done by paid employes of the State.

Would not better results be obtained by the formation of a Department of Agriculture with a commissioner and deputies appointed by the State Board, having as an advisory board the officers and executive committee of the State Board? Many States now have their departments of agriculture. Such a department could administer all laws relating to agriculture now being managed by separate commissions, such as Tuberculosis in Cattle, Live Stock Inspection, Nursery Inspection, Forestry Laws, and Dairy Inspection, and could keep all records and accounts. Better results would be obtained and the present appropriations for the various objects mentioned above would undoubtedly support such a department. To this could be added the inspection of nurseries, bees, and several other duties belonging to the State now performed by the Experiment Station.

The functions of the Experiment Station and its relation to the State must be maintained. What is their function? Education, research and experimental work! Is it their duty to do the State's police work? The function of the State Board of Agriculture must be preserved and its relation to the State must be maintained. What is their function? Supervision and the promotion of agriculture. The State Board of Agriculture of New Jersey by a most singular series of traditional influences which generations have cherished and preserved, by such influences custom has been embalmed and law represented, and with this we have created the strongest organization of agricultural interests, an organization that cannot be destroyed or impaired in any way. We cannot begin again, but we can revise and improve.

A better method and system of administering these laws must be devised or the cause of agriculture will suffer. Action is imperative. I submit the question to you for discussion.

Let me briefly allude to the laws which have been accomplished during the past year.

First—Increased appropriations to the State Board for Farmers' Institutes, so that this Board through the medium of scientific and experienced men can bring directly to the farmer knowledge of improved methods.

Second—Liberal appropriations for free scholarships in the State College and the development of short courses, increased and liberal, so that the boys in the State in wintertime when the work on the farm is light, can obtain knowledge which will benefit them in their work.

Third—The creation of a Department of Plant Pathology under the direction of Dr. Cooke, who has come to us from Delaware, and is a recognized authority in this science. A department to wipe out the insect enemies as well as the diseases which attack our trees, shrubbery, potatoes and other growths.

Fourth—The creation of a Department of Bee Industry to promote modern methods in this failing industry where right knowledge is so much needed to combat the foul broods which are such a detriment to profitable bee raising. There was a time in the State when this was a magnificent industry, but it has declined, and it was the mission of the Legislature through the agency of this Board to improve and increase this failing industry.

Fifth—A revision of the school laws, and the creation of a policy that children should be promoted for merit after a test examination held in essentials, practically bringing back to the children of this State a thorough training in what is known as the "three r's." Ninety-five per cent. of the children of this State never go beyond the seventh grade in the grammar school and it is felt by the new State Board of Education that the State owes a duty to its citizens, to establish a policy and rule that the child of the farmer and the laborer and the poor man shall at least be equipped for

the battle of life by having a thorough knowledge of reading, writing and arithmetic, English, geography and spelling. This in itself will be a great step in advance.

Sixth—The establishment of a Poultry Department at the Experiment Station with sufficient appropriation to give the farmer the advantages of instruction in poultry-raising and develop this great industry of the State.

Seventh—Appropriations to purchase abroad pure-bred stallions and send them through the State that the farmer may have the advantage of better breeding facilities. Much has been accomplished, and in several counties in the State a splendid lot of young horses have been raised. We cannot expect to cope with the Western States where this is the most important industry, and where they have thousands of stallions on their lists. Nor can New Jersey always continue these breeding stations, but we can inspire the raising of high quality horses for home use, and probably a limited amount for nearby markets, and restore the State thereby to the proud position once occupied as the breeding ground and emporium of the finest horses in the world. This law should, therefore, stand until it has accomplished its purpose.

Eighth—A law written by Dr. Voorhees which provided that all stallions for service in the State should be free from hereditary diseases. Such a law abroad and in seventeen stock-raising States at home, experience has shown is the foundation of a sturdy race of horses.

Ninth—We were successful in defeating certain legislation detrimental to the interests of farmers. An effort was made last winter to admit to this State free non-resident automobilists under the guise of reciprocity and hospitality. From every section of this State comes a cry for more stone roads. Heretofore a license has always been charged all automobilists, and has resulted in an annual income of \$300,000. These funds have been used only for the maintenance and repair and improvement of the roads of the State. Over \$1,000,000 from this fund has been expended to keep in good condition our roads, and the taxpayers in every county have been relieved to that extent. The building of stone roads is expensive and we most certainly are burning the candle at both ends when we are building these roads, and allowing them to be destroyed without keeping them in repair, nor having adequate means to do so.

This campaign has been fought for six years, and rather than reduce the income from automobile fees, I believe it is of interest to all taxpayers that the automobilists who damage the roads to the extent of 80 per cent. of the cost of repair should be assessed this amount to maintain them by increased license tolls.

Legislation for special interests should be defeated. It is unfair to place upon the taxpayers of the State the burden of maintaining the roads used by others who do not pay anything towards their repair and support.

I have recited thus briefly what we have accomplished in the Legislature, and through the State Board in the past few months. I cannot close this address without referring to an institution which is practically an institution of the State of New Jersey. I refer to Rutgers College and the Experiment Station connected with it. I might take your time to speak of the noble band of men who through this college are assisting and promoting the cause of agriculture. The benefit to this State through the improvement of agriculture culture. The benefit to this State through the improvement of agriculture achieved by the Experiment Station, through the learning dispensed at the State College, through the missionary work in the Farmers' Institutes, is already apparent, in the increased values of our farm lands, and the development of southern and eastern sections of the State.

In bringing to the farmer through its various channels this practical assistance and knowledge, the State necessarily ends its duty. If the work is not to be futile, and the money wasted, the farmer must do his share and put in practice the help given. In no way can the leading farmers in each community be of more benefit to the State than in the successful application

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of State help to their own business and local conditions, for their example will do more to win over the doubting Thomases and spread enlightened agricultural knowledge than all the institutes or farmer's courses.

And now, in conclusion, I want to speak of another law about which I feel deeply. When you elected me President of the State Board of Agriculture, I became, by reason of another law, President of the Commission on Tuberculosis in Cattle. This position was also held by Dr. Voorhees, my predecessor. The conditions of health in cattle in the State were chaotic. The law was incomplete; the appropriation insufficient to properly police the State. The State was the dumping-ground for diseased cattle from every shipping point in the country. No one can ever estimate the loss to the farmers of the State by this laxity of laws, and no one can ever estimate the menace to human life by such laxity.

You will hear more of the work in the report of the Commission and from Inspector McNabb, who has so faithfully administered the new laws, but I hope that Legislatures to come will never repeal this law, and will arm with greater authority whatever department of government shall have control of it. To-day this disease is rife in the State. No one can estimate its extent, and the burden must naturally fall on the shoulders of the farming class. This condition has come from inattention to the importation of the cattle and the lack of a proper quarantine. It has also come by reason of the fact that consumption and tuberculosis in cattle is caused by unhealthful and unsanitary stables, lack of care, proper food and infection.

We have learned much in the last ten years about keeping our cattle healthy and clean, and producing milk under decent conditions. But there are still many farmers who neglect these important sanitary rules.

In my speech of acceptance last year, I said that New Jersey farmers were unprotected against tuberculosis, while other States protected themselves against New Jersey. From July 1st, 1911, to August 10th, when the new law went into effect, there were 7,247 imported cattle tested, and 108 condemned, while only 37 were slaughtered. From August 10th, 1911, to December 15th, 1911, about four months under the new law, and administration of 3,065 imported cattle, all tested after entering the State; 180 have been condemned and slaughtered. No condemned cow has been allowed to live.

The new law has been so rigidly enforced in this State that 102 cows have been condemned and slaughtered in the States of New York and Pennsylvania on tuberculin test prior to shipment, after being bought by New Jersey buyers. Adding this to the 180 slaughtered on tuberculin test in this State gives us 282 dairy animals kept from polluting our dairies with tuberculosis since August 10th, 1911. This refers to IMPORTED cattle only.

Last year the Tuberculosis Commission in Cattle was headed by Dr. Voorhees, and had been the subject of attack in the newspapers and by the State Board of Veterinarians. The veterinarians of the State always believed that they should be part of this commission. During my six years in the Senate, I vigorously opposed their having this authority. They cannot act in a dual capacity. They have their clients who call upon them to treat their cows. They examine them for tuberculosis. The State, however, employs them in a professional capacity to examine cows for them, and anyone employed in this capacity should not be the agency to execute the laws in another capacity. How can they serve the State and the individual at the same time? This authority belongs and rests in the State Department of Agriculture.

A new law was enacted increasing the authority of the commission and increasing the appropriation. Under the new law the State has been divided into districts, and these districts are under the supervision of inspectors. These district inspectors have been under the supervision of a chief inspector, Mr. Charles McNabb.

The State is endeavoring, and I believe succeeding, in enforcing the law. It is employing veterinarians who we believe to be honest and who can be trusted to make reliable tests.

There are some veterinarians who have questioned the authority of the State, and are antagonistic to the law. I will not detail these cases to you. We are not concerned, nor do we care for their opposition. We are employing for the State honest veterinarians to make this test, and it has been authentic and reliable, as our records show. The commission is empowered to enforce this law, and I believe it has done it effectively, as results prove. It is the best known test, and after this experience of four months, I do not hesitate to say it is absolutely reliable, and if there is any percentage of failure, it is exceptionally small.

In some of these post-mortem examinations the conditions are horrifying. I have one in mind: Two cattle were to be killed, which the cattle dealers violently opposed. Under authority of the law, the cattle were taken to a nearby slaughter-house. Surrounded by cattle dealers who opposed the State's authority, veterinarians declared the cows had no tuberculosis, and were anxious to see the State fail. There were present reporters, representatives of the State Consumer's League, and others. The result was that both cattle were found to be infected to such a degree that when opened the pus scattered out all over the spectators, and the inspectors lost no time in ordering the immediate destruction of the animals.

The result of these methods in the State shows that of the cattle that have been killed there were no failures.

The men who are administering this law feel gratified that they have been successful in enforcing it, and wish no reward except the satisfaction as public-spirited citizens who have done their duty in the protection of human life. They have been and are confronted with violent and selfish opposition and ignorant prejudice.

First—The veterinarians and cattle dealers who have long plied their dishonest trade in this State. I do not mean all, because there are some honest dealers and some honest veterinarians, and some of these veterinarians are in the employ of the State, but I do say that in years past, thousands of cattle have been passed in the State through collusion between the veterinarian and dealer. The farmer has been cheated and the standard of health in the live stock in the State has been lowered. A veterinarian or dealer, or anyone, who will falsify or wilfully and knowingly sell a tuberculous cow to an innocent and unsuspecting buyer, sending him down to spread this infectious disease to other cattle, imperils the lives of children and others, is an undesirable citizen, and worthy only of the utmost contempt.

Second—Of equal danger is the ignorant man who says he does not believe in the test; that tuberculin and tuberculosis was never known when he was a boy; and what was good enough for him is good enough for the present generation. Pity such. In the years past no one can ever estimate the number of deaths by colic, dysentery, weak lungs and infant mortality, which was so great years ago, all of which was probably due to infected milk. Such a man might say that what was called peritonitis and bowel trouble in the past, and is now known as appendicitis, which is now cured by a simple operation, is a useless cure. We know that diseases are transmitted through infected milk, and it is our duty to the State as humane and honest citizens not only to protect the farmer in the imported stock he buys, but to protect the weak and innocent and unsuspecting, who consume the milk.

We know the importation of diseased cattle into the State is a menace to the dairyman farmer. We know we cannot stamp it out immediately, but we can minimize it, and this is our duty. We can make the herds of the State healthier. We know that there are many breeders who never have a case of tuberculosis and they do it by raising their own calves.

If a law could be passed which would make it to the interest of every farmer to raise one heifer a year to milk from a tested cow, it would be a fine provision of law and would undoubtedly solve the problem of keeping up the maximum supply of milk, and having the herds of the State healthier by reason of such action.

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Such a law would promote the raising of healthy cattle, and we won't have to import them from other States. In addition to that laws should be enacted compelling every cow that is brought into the State to be quarantined for at least a month, and then tested by the State, as a protection against the mistakes of the veterinarians and officials of other States.

There is one point that I want to bring to your attention as forcibly as words can do it, and that is that the total amount of acreage under cultivation in the State of New Jersey has decreased over 267,000 acres in the past ten years, this, in the face of the work of this Board, and the Experiment Station, which have undoubtedly, brought a great amount of acreage under cultivation in south and northwestern New Jersey. Why is this?

Is it not due largely to the absorption of land by those who disqualify it, and make the areas unproductive. Who are they? The first of these have been the land development companies that have come from New York and Philadelphia and bought large tracts of farm land. Their method of procedure is calculated to deceive the unwary buyer. With great placards announcing the fact that you can own your own home on the payment of a small installment monthly. The running of Sunday excursions to the locality, furnishing free transportation, stages and automobiles, and luncheon, accompanied, of course, by the inspiring airs of a brass band. They take the unwary buyer over the tract of land which has been laid out in building lots with plowed streets, and "stinging" him a good price for a lot. These lots are sold and a deed is given, and they have for all time disqualified this land as productive property.

Of course, some of these land development companies succeed and towns spring up, but in most cases they are simply fake real-estate men who know nothing whatever of developing or improving the property. I have heard it estimated that 150,000 acres of land in the State of New Jersey, which have been cultivated as farm property, have been disqualified in this manner and now lie idle. I made an effort to enact a law to prevent this devastation, but the Attorney-General informed me there was no way to resist it. In addition to this, I might mention the acquisition of the land in New Jersey by wealthy men. I have no resentment toward any man who desires to purchase a large tract of property and beautify it and improve it. It undoubtedly adds to the taxable value of the locality and beautifies the land, but is it not well to consider whether the acquiring of thousands of acres in this manner and making them unproductive as farms is of any benefit to the State.

I know of one county in this State where 10,000 acres have been absorbed in this manner in the past fifteen years and over sixty farms practically put out of business. This land is not cultivated to-day. The farmers have left, taking the magnificent price they have for their land, and who can blame them, and are living in the towns upon the interest of the exceptional amount which they procured for their farm land.

Churches have been depleted and a countryside known for their splendid rural population have been dealt a blow which can never be healed. I have in mind now ten men who own approximately 30,000 acres, and none of these acres are tilled, and it is estimated that nearly 150,000 acres have been absorbed in this manner in the past ten years. While no criticism can be made of these men, nevertheless if they properly understood the setback that agriculture was receiving by reason of this absorption of land, undoubtedly, being public-spirited citizens, they would make the farms which they buy tenant farms, and bring them under active cultivation.

New Jersey is fortunately situated and is not compelled to rely on other States for her produce, but the time may come when the problem will confront us, and the country, and the State must prepare for that time. This is the mission of the State and County Boards of Agriculture to encourage the cultivation of the land.

And the State of New Jersey can undertake no more practical enterprise than developing her resources, and in encouraging the farmer in the successful tillage of the soil.

Daniel Webster, while a great statesman, was also a devoted tiller of the soil. In speaking to an English audience on American farming, he once said:

"Agriculture feeds us. To a great degree it clothes us. Without it we could not have manufacture, and we should not have commerce. They all stand together, but they stand together like pillars in a cluster. The largest in the centre and the largest one is agriculture. Let us remember too that we live in a country of small farms, and freehold tenements. Let us remember that many of us live in counties in which men cultivate with their own hands their own fee-simple acres, deriving not only their substance, but also their spirit of independence, and manly freedom from the ground they plow. They are at once its owners, its cultivators, its defenders, and whatever else may be undervalued or overlooked, let us never forget that the cultivation of the earth is the most important labor of man. When tillage begins other arts follow. The farmers, therefore, are the founders of human civilization."

Secretary Dye—Mr. Chairman, it is customary in the State Grange to refer the head officer's address to a committee. It seems to me this address of our President is of so much importance and so comprehensive that we cannot discuss it fully now, and that it ought to be referred to a committee.

Vice-President Cox—Gentlemen, you have heard the remarks of the Secretary in reference to this valuable address presented by our President.

Secretary Dye—I move you, sir, that it be referred to a committee to be appointed by the Vice-President later at this meeting, who shall make a report and bring to our attention more fully those important portions requiring attention.

Prof. Rider—I thought the reason of referring it to a committee was because there was something in it that could not possibly be endorsed. I do not think there is anything in this address which we cannot all endorse.

Vice-President Cox—The question is on the motion to refer the address. Would the Board rather discuss the question now? My judgment is that the members of the Board are not yet prepared to discuss this question now, and if it was referred to a committee who could make a report later and who could emphasize and bring closer still to your attention some of the vital points of this address it would be of great benefit to the Society.

The motion was carried.

Vice-President Cox—The address will be referred to a committee. I will defer the appointment of this committee at the present time.

Secretary Dye—We did not get through with the Land and Irrigation Exposition business before dinner. I think that was left over.

Vice-President Cox—We have a few minutes now left to be devoted to a discussion of the Land and Irrigation Exposition question if the Board desires to do it.

Mr. Collins—In order to bring this matter up, Mr. Chairman, I will move that it be the sense of this meeting that New Jersey be represented at the next Land and Irrigation Exposition in New York.

This motion was seconded.

Vice-President Cox—Under what conditions?

Mr. Collins—That brings the matter up for discussion, and I will let the conditions develop in the discussion.

Vice-President Cox—The motion is, then, as I understand it, that it is the sense of the meeting that New Jersey be represented and join in the National Land and Irrigation Exhibition. Are there any remarks on that motion? The motion was carried.

Vice-President Cox—The motion is that this Board put forth some effort to secure representation in the next exhibition.

Secretary Dye—Mr. Chairman and friends, I am glad you have passed a resolution endorsing this matter. If we go into it, let us go into it whole-heartedly. We are emphasizing co-operation in all our work and we will need to co-operate in this, and my thought is that we should grow crops this next summer especially for that Exposition next fall, on these poor lands that have been referred to by the President and that I called attention to this morning. We are advertising the fact that we have got a million acres open for cultivation; we should grow crops on those lands and take them to the Exposition, with a glass jar, if you please, of the soil, and say that these crops were grown in this soil. Then the people from any other part

of the country can see that the sands of South Jersey produce something more than mosquitoes; that we do grow sweet potatoes and cranberries and everything else that grows out of the ground in this latitude, in New Jersey. Dr. Voorhees demonstrated by experiments that we can grow alfalfa on the light soils of New Jersey. He did it down at Hammonton. I am doing it now in Ocean county.

I suggest, Mr. Chairman, that we have a committee of one from each county who can co-operate with the head committee or central committee, whoever it may be, and so collect, assemble, prepare, by growing and getting ready for fall, an exhibit which will be, as Senator Gaunt said this morning, a credit to New Jersey; we can do it.

Vice-President Cox—I will appoint on the Committee on the President's Address, the Hon. E. T. Gill, John T. Borton and George L. Gillingham.

We will now take up the motion of the Secretary to appoint a Committee on the Irrigation Exposition.

This motion was carried.

Vice-President Cox—The committee will be appointed by the President later.

We will now listen to Dr. Lipman, of the Experiment Station, in his presentation of New Jersey Agriculture, its Problems and their Solution. Dr. Lipman, Director of the Experiment Station. (Applause.)

Problems of New Jersey Agriculture.

BY DR. J. G. LIPMAN.

There was a time when New Jersey was a new country. After the colonists of New England had cleared their forests and had made arable many thousands of acres, the hillsides of North Jersey were still covered with virgin forest. Years passed on; the volume of immigration from the Old Country increased, and some of the arrivals to the New World, as well as the sons of the early settlers in New England, turned their eyes toward the valleys of North and Middle Jersey. Gradually the large holdings were cut into smaller estates. The farming population increased decade by decade, until the agricultural population of the State attained an important social and economic position.

Green sand marl, discovered before the beginning of the nineteenth century, and used in enormous quantities during the first three-quarters of that century, stimulated still further the agricultural development of our

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State. Vast areas of poorer land were made fertile because of the marl, and the clover which followed its application. To-day these areas include some of the finest potato land of Monmouth, Mercer and Burlington counties. As the productiveness of these and other soil areas increased, land values rose from year to year, until the period marking the close of our Civil War. At that time the area of farm land in New Jersey was practically at its maximum, for values were high, and it was not uncommon, in those days, to pay as much as \$200 per acre for productive land. Then came the opening of the Middle West and of the Farther West. The sons of New Jersey farmers joined the tide of emigration to the newer lands, and land values began to shrink. In the following two decades farm values were at their lowest. Splendid farms were bought at a price much below that of the cost of the buildings. Farming as a vocation seemed to be less remunerative than other lines of endeavor. The sons of farmers became imbued more and more with the belief that farm-life was a life of drudgery, and that the city offered far better opportunity to young and aggressive men than did the country. Thus the very best portion of our rural population left the country, effectively stopping thereby the normal development of our agricultural resources.

Then came the last decade of the nineteenth century. It brought with it changed conditions and changed ideals. The very men who in their youth had turned their faces toward the city remembered the charms of the country and sought to buy back the acres that had passed out of their hands. The growing interest in country life, the expanding cities and towns, the creation of local and more distant markets, and the improved method of transportation all served to bring out in bold relief the peculiar advantages possessed by a large portion of our State. Thousands of men and women engaged in gainful occupations in the large cities of our neighboring States established homes in New Jersey. Rich people came and bought up hundreds of acres for the creation of country estates. Land speculators came and purchased farm after farm, for future partition into city lots. All these factors helped to increase land values as manifested by a rise of thirty-eight per cent. between the years 1900 and 1910. The areas of very considerable magnitude withdrawn from what might be termed circulation by the gentleman farmer, land speculators and commuter caused a shrinkage in the area of cultivated land. Nevertheless, crop production in New Jersey increased by leaps and bounds. Fertilizer consumption has practically doubled in a single decade, and the value of the agricultural produce attained a level never before reached in New Jersey. In a word, then, our State entered a period of transition from extensive to intensive methods— from low land values to high land values; from small profits to larger profits. In this transition new problems have arisen, and it behooves us to consider them and their solution.

THE PROBLEM OF FARM VALUES.

Notwithstanding the recent influx of strangers into our State, but few realize the attractions and advantages offered by New Jersey for the establishment of country homes. Most of them are strangers to the resources of our soils and climate. They know nothing of the level stretches of land where potatoes and truck crops flourish, of the rich valleys where cattle may find food aplenty, of the almost innumerable sites of potential orchards. They know scarcely anything of the quality of our crop products, of the methods and practices that we follow and of the results that we secure.

But we should not blame strangers for their ignorance of our agricultural resources; the sons of New Jersey (by birth or adoption) are often as ignorant as the stranger of the wonderful possibilities that lie within our acres and of that degree of realization that has already been attained. We have been content in the past to hide our light under a bushel; we have given but little thought to our undeveloped resources; we have not gone out

of our gates to meet the stranger, and we have not encouraged him to make arable the many thousands of acres that are now idle and unproductive. Let us turn over a new leaf. Let us resolve to create values, that the taxable wealth of the State may be increased. Let us organize an aggressive campaign of publicity and advertising. Let us attract outside capital to our rural districts, and, by the infusion of new blood and new enterprise, let us bring to them the prosperity that should be theirs by virtue of soil, climate and location. Indeed, it is high time that we borrow a leaf from the notebook of our neighbors in the West, and pay our respects to the power that lies in publicity and organization.

As the first step in this campaign we must establish what I would call an agricultural museum. We must set aside a building, or a portion of a building, for a permanent exhibit of maps showing the different soil types of New Jersey; of typical samples of soil and corresponding subsoil, and of tables showing the composition of these soils. We must include in our exhibit samples of fertilizer and lime required by different soils; of crops best adapted to them, and must illustrate methods of rotation, tillage, drainage and irrigation that would best meet the needs of each soil type. We must collect specimens of corn, small grains, forage crops, fruit, berries, grapes, dairy and poultry products, and should mount them or otherwise preserve them for educational purposes. Permanent exhibits of this character could be shown at agricultural fairs and at expositions within and without the State. They would serve as sources of information to our farmers and would stimulate an intelligent interest in most progressive methods. At the same time they would be a convincing argument to would-be investors as to the opportunities offered by New Jersey.

As the next step in stimulating agricultural progress, we should establish a more thorough system of popular instruction in rural communities. Means should be found to bring to the farmer the results of investigation and study in all countries; in other words, some organization should be perfected that would act as the intermediary between the scientific investigator and the farmer. An organization of this character could be best secured by establishing an extension department at our Experiment Station.

EXTENSION TEACHING.

The Experiment Station is, primarily, a research institution. It is also charged with certain police duties, pertaining to protection of farmers in the purchase of fertilizers, feeding stuffs, insecticides, nursery stock, etc. Apart from exercising these functions the Experiment Station serves as a bureau of information. It is expected to furnish landowners in the State, and others interested in agricultural matters, timely information on a great variety of topics. Twenty-five or thirty thousand letters, annually, are received at the Station. They contain questions about soils, crops, fertilizers, fruit trees, various domestic animals, farm buildings, farm machinery, drainage and irrigation, green manures, and a variety of other topics of direct or remote interest. Requests are, likewise, received for popular bulletins on different subjects. These requests are complied with insofar as the resources of the Station will permit. Unfortunately, however, the editions of our bulletins are rapidly exhausted and neither the Station force nor the publication funds are adequate for meeting the constantly growing clamor for agricultural literature. The work of the Station should be strengthened by the providing of a larger appropriation for printing and of additional men fitted by training and experience to give helpful and reliable advice by means of popular bulletins and circulars.

Another feature of extension teaching pertains to the personal inspection of individual farms by agricultural experts. Such men qualified to speak authoritatively on their chosen subjects would, in a few years, accomplish an untold amount of good. The service rendered by them would correspond to that rendered by the expert accountant in business and industrial estab-

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lishments. By making a study of each farm as an individual problem these experts would search out the weak spots and the leaks in farm management. They would suggest better methods of fertilization, of cropping or feeding. They would urge the elimination of unprofitable crops or animals. They would give advice as to the more economical use of farm labor and farm machinery. They would be instrumental in the introduction of new crops. They would teach farmers the value of co-operative effort, and would, in a general way, become the missionaries of rural prosperity. In a few years the work of such men when properly correlated, would serve to raise the level of agricultural production, and would add vastly to the wealth of the rural communities and of the State as a whole.

These experts would, also, be charged with the duty of carrying on demonstration and co-operative experiments in various places in the State. To them should fall the task to show farmers how to spray or prune, how to mix and use commercial fertilizers, how to plan farm buildings, how to prepare land for certain crops, how to pack and market agricultural products. To these men should fall the task of forming associations of boys and girls by enlisting their interest in and sympathy for every effort that is being made to hasten agricultural progress in the United States.

To the same men should be assigned the work of arranging exhibits for our county and State. Fairs, for providing lectures for Granges and various agricultural organizations; for contributing toward the success of farmers' institutes and demonstration trains, and for promoting in every possible way, the legitimate interest of farm life.

If these suggestions be followed and competent extension-teaching force be organized, tangible results would be forthcoming in a short time. This conclusion is justifiable if we are to judge by the wonderful stimulus given by similar methods to the agriculture of Scandinavia and other European countries. In Denmark alone, extension teaching and co-operation have transformed a country poor in natural resources, and located under unfavorable climatic conditions, into a region marked for its agricultural prosperity. In the last twenty years the productive power of Danish soils has increased to a striking extent. New agricultural industries have been established, new markets have been developed and the income of the average Danish farmer has been, in many instances, doubled.

The same may be said of Belgium, where extension teaching and the resulting co-operation have raised the level of production, and have transformed poor farms into fertile and profitable farms.

Further testimony as to the value of extension teaching and of demonstration and co-operative experiments may be found in the growth of co-operation and agricultural progress in sections of Germany. Indeed, local instruction and local co-operation have been responsible more than any other factors for developing the agricultural resources of much of continental Europe, and for checking emigration to other countries.

THE PROBLEM OF CONTROL AND INSPECTION WORK.

The law providing for the founding of the New Jersey State Experiment Station was passed in 1880. In this law we find the following statements: "For the benefit of practical and scientific agriculture and for the development of our unimproved lands the New Jersey Agricultural Experiment Station, with suitable branches, is hereby established." We are told further that "the Board of Directors shall locate said Experiment Station and branches, and shall appoint a Director, who shall have the general management and oversight of the experiments and investigations necessary to carry out the objects of said institution, and shall employ competent chemists and other assistants necessary to analyze soils, fertilizers, and objects of agricultural interest, so as to properly carry on the work of the Station." You will note that among the tasks assigned to the Experiment Station there was included that of collecting and analyzing samples of fertilizers sold in

the State. Indeed, from the very beginning a large portion of the resources of the Experiment Station was devoted to fertilizer-control work. The analysis of fertilizers and the study of fertilizers continued to be, for some years, the chief problem of the Station. I need not discuss here, at any length, the splendid service rendered to the farmers of New Jersey by Dr. Cook, Dr. Voorhees and their associates; suffice it to say that they protected our farmers as efficiently as they are protected to-day against fraud, in the purchase of plantfood. More than that, they taught them how to use commercial fertilizers. Through their efforts, the consumption of fertilizer in the State increased year by year, and with the increased use of purchased plantfood there came more intensive methods of farming, and a greater measure of prosperity. But with the increased demand for commercial fertilizer there came a greater number of brands—greater variety of fertilizer materials, and a series of complex problems in the control work. Thirty years ago, but a few brands were sold in our State; now there are many hundreds of them. Many samples must be collected by the Experiment Station and analyzed and several chemists must be kept at work to make the necessary analysis.

The Feeding-stuffs Law passed in 1900 has imposed similar obligations in relation to the collection and analysis of feeds sold in the State. But the Feeding-stuffs Law, like the Fertilizer Law, has ceased to be adequate for meeting changed conditions. The trade in mixed feeds has increased, new by-products are being utilized in feed mixtures, and there is greater need now for more careful inspection and for the better protection of the purchaser of feeding stuffs. There have been attempts to sell, in our State, weed seeds and other undesirable materials simply because they contain certain quantities of protein and of other food constituents. Moreover, a feed law has been passed by the Federal government, and it is desirable that State legislation be in keeping with progressive Federal legislation.

THE PROBLEM OF SOUTH JERSEY.

Eight counties in South Jersey, namely, Ocean, Burlington, Atlantic, Camden, Gloucester, Salem, Cumberland and Cape May, comprise a total area of more than 2,300,000 acres. Considerably less than 1,000,000 acres of this area is in farms and only 630,000 acres consists of improved land. In other words, less than thirty per cent. of this vast domain is given over to productive farming. There is evidently much room here for expansion and the problem that confronts us is that of converting many square miles of stunted oak and pine forests into fertile fields. That this transformation is possible is taught us, not only by the experience of European countries, but also by that of the pioneers in Gloucester, Salem and Cumberland counties.

The making arable of uncultivated land in Southern New Jersey presents problems that are in many respects local. Most of the land in question has an elevation of less than one hundred feet. The soil material consists of sand, gravel, clay and marl. The rainfall conditions are good and the growing season is longer than it is in Middle or North Jersey. The physical structure of the soil, taken together with the climatic conditions, make it evident that South Jersey is some day destined to be the leading market garden section of the eastern United States.

While recognizing the natural advantages possessed by this section of the State, we cannot overlook the fact that the clearing and improving of these soils is a costly process. Nevertheless, the rise in land values and the growth of new and distant markets, demand even now a careful study of the agricultural problems of South Jersey. These problems are numerous and pertain to the cost of clearing and improving new land, and methods of fertilization by irrigation, of green-manuring, and of co-operative production and distribution. We are now sufficiently familiar with the principles of soil fertility to be ready to apply them under conditions more or less local in character. Now, because the conditions in South Jersey are unlike

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those in North or Middle Jersey, it is desirable that we make a systematic effort to find the best application of well-known principles to soil and crop problems of South Jersey. We know that the soils of this section are notoriously deficient in plantfood and in organic matter. Both of these defects can be corrected by the use of commercial fertilizers, green manures and lime. However, there is still much to learn concerning the best and most profitable use of these materials. The same may be said of irrigation systems and of the introduction of crops that are not grown at present, but are likely to become of great economic importance. In a word, then, the progress of scientific research and the changed economic conditions as to markets and land values both warrant the establishment of experiments that would deal with these local problems, under local conditions of soil and climate. Many of you are no doubt aware that for some years past there has been agitation for the establishment of a sub-station in South Jersey. But, while there was general agreement as to the probable usefulness of such a sub-station, there was lacking in the State as a whole a true appreciation of the problems and needs of South Jersey. A change of sentiment has occurred of late years. It is now recognized more widely that the future prosperity of New Jersey demands the development of its southern portion. The interests of Middle and North Jersey are becoming more and more city interests. From year to year they grow less rural and more urban. It is not so with South Jersey. This section must remain, for decades to come, a strictly agricultural section. Its interests will be largely farming interests and its growth and prosperity will depend on the furtherance of these interests by experiments, extension teaching and co-operation. Let us, then, have a local research institution dealing with local problems, so that the countless acres now lying waste and unproductive be made arable and that the plantfood and water problems be solved economically, and effectively. We should have a right to expect much from an institution of this character. Among other things, it will add many millions to the taxable values of the State.

Let me say a few words as to the problems that would need to be considered by this sub-station. In the first place, it would study the production of truck crops. Potatoes, sweet potatoes, tomatoes, melons, and other crops have their own peculiar needs as to amounts and character of fertilizers, tillage methods, and protection against fungus and insect enemies. In the second place, the sub-station would inquire into methods of producing fruit, grapes and berries, best suited to the soils and climate of Southern New Jersey. In the third place, the sub-station would test out new crops of possible value for this territory.

It is scarcely necessary to add that a sub-station of this character would increase the profits of the farmers, not only by introducing better methods and better crops, but by encouraging co-operative effort and better knowledge of markets and by making possible better transportation facilities.

All of South Jersey would be benefited by the rise in land values. The social conditions would be improved fully as much as the economic conditions, for the sons and daughters of the farmers would take greater pride in farm work, and farm life, and would cease to be attracted by city life and city interests.

THE PROBLEMS OF NORTH AND MIDDLE JERSEY.

Portions of South and Middle Jersey have ceased to be agricultural land. The cities, towns and boroughs are encroaching on the outlying farms and are absorbing them. The story of absorption and assimilation of agricultural land is being repeated in Bergen, Hudson, Essex and Union counties. Indeed, the land in these counties has become too high-priced for general farming and dairying, and even the market gardener is beginning to feel that it would be wiser to sell his land at \$1,000 or \$1,500 per acre, than to pay taxes and attempt to realize a profit by raising crops on high-priced land. Eliminating, then, the counties just mentioned from the strictly agricultural

portion of North and Middle Jersey, we find that the remaining counties (including Sussex, Warren, Passaic, Morris, Hunterdon, Somerset, Middlesex, Mercer and Monmouth) comprise an area of somewhat more than 2,000,000 of acres, about one-half of which is improved farm land. In view of the fact that this portion of the State consists in part of land that is too steep and stony for cultivation, it is apparent that North and Middle Jersey have been made arable to a greater extent than South Jersey. A further comparison of the two sections of the State will show us that the northern counties consist of soils much richer in plantfood than those of South Jersey. On the other hand, the topography and climate are less satisfactory in the North than they are in the South. Barring limited areas, North Jersey is not a trucking section. The soils are too heavy and too late for the best production of market garden crops. It is otherwise with fruit and dairying. North and Middle Jersey are capable of producing apples and peaches of the finest quality. In the case of apples, particularly, this section of the State should see marked progress within the next ten years. The counties of Sussex, Warren, Passaic, Morris, and Hunterdon offer splendid opportunities to men of intelligence interested in fruit production. In the same way the dairy industry of this territory must remain an important industry. But, because of the manifestly unsatisfactory conditions that prevail at present in the dairy sections of North Jersey, it is desirable that experiments be instituted for the study of meadows and their improvement, for the study of feeding problems, for the study of alfalfa and soy beans in their relation to the dairy industry, and for the study of the production and transportation of market milk.

In its way, the moisture problem in North and Middle Jersey is as important as it is in South Jersey. In this section, however, the water problem is to be solved less by irrigation and more by tillage methods. Heavy land retains its moisture more tenaciously than light, open soils. It becomes saturated and favorable changes of its plantfood are discouraged. Moreover, irrigation in the East is profitable only on crops of high commercial value. Lettuce, celery, cabbage, and other truck crops, capable of yielding a gross revenue of several hundred dollars per acre, might make irrigation profitable, whereas wheat or corn would fail to yield a profit, even under conditions most favorable for irrigation. Hence, deeper plowing, more thorough cultivation and a generous use of lime and green manures will be resorted to for storing a greater quantity of water in cultivated land. In fact, the water problem in North Jersey is closely bound up with the humus problem, and the latter is in its turn dependent, to a great extent, on an adequate supply of lime. Generally speaking, the farmers of Sussex, Warren and Hunterdon counties are in greater need than those of other counties in the State of competent advice. Only such advice will help to raise the level of production which is much lower than it should be. Indeed, one thinks with regret of the fact that the entire area of these three splendid counties, comprising, approximately, 850,000 acres, can be bought for less than \$20 per acre. Something is evidently radically wrong in this territory. Men from the West would scarcely believe if they knew that the fine grazing land of these counties and the almost unrivalled facilities for producing fruit of the highest quality, at a profit, should be held in so low esteem. Fortunately, the time is ripe for a better appreciation of this section of the State, with its rich soils and its attractive topography. To the agricultural organizations of the State, including the Granges, the Experiment Station, and the Agricultural College is reserved the task of urging such changes and improvements in the agriculture of North Jersey as would assure for it the full measure of success that it surely deserves.

Something should be said here of the important drainage problems that exist in this portion of our State. The Pequest, or Great Meadows, in Warren county are utilized even now for the growing of certain truck crops. They contain in all about 3,000 acres, of which a considerable portion needs reclaiming by a proper system of drainage. Other areas of rich alluvial soils, abundantly provided with plantfood and vegetable matter, but over-

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supplied with moisture, exist in the other northern counties. When such land is properly drained it becomes extremely productive; for this reason, a systematic study should be made of drainage problems in North Jersey.

These, in brief, are some of the problems that demand careful consideration. We are now at the threshold of agricultural expansion, and it is the duty not only of the agricultural organizations in the State, but of all individuals interested in the future welfare of the State, to contribute insofar as they can to the improvement of economic and social conditions of our rural communities. We have the task before us of improving forest and waste land, and of raising the production of land that has already been made arable. We have the task before us of developing a higher standard of skill and intelligence among the young generation of farmers. We have the task before us of stimulating co-operative effort so that agricultural production may gain a much greater efficiency than it has in the past. By accomplishing these tasks, and solving these problems, we shall contribute not only to the material prosperity of our State, but shall do much toward raising ethical standards.

Secretary Dye—Mr. Chairman, the President in his address referred to tuberculosis. If we kept our cows as closely packed as are the people in this room, we would have them all dead with tuberculosis in a short time. (Laughter and applause.) One of the great lacks of our public halls to-day, and of our churches, is a proper system of ventilation. We are putting the architects all out of business in our State. This room for us to meet in is one of the worst that could be conceived of. You cannot open a window but the draft will strike somebody, and that keeps us all closed in tight. The Horticultural Society this year was driven to Freehold because they had no place here to meet in and make their exhibit. The Poultry Association of Camden got the use of the armory there at the small sum of one thousand dollars. Now, I want to ask you to endorse the proposition to get legislation, if it is necessary, that such bodies as the State Board, the State Grange, the State Horticultural Society, etc., may have the use of our armory here in Trenton when they meet in Trenton, and not have to pay for it. Now, if you approve that, let us have a committee appointed to secure that legislation. To-morrow, if all is well, Mr. Chairman, we won't have room here; we were sandwiched in here last year, and we are suffering now. We have not room. There is not a room in the State House that is large enough. The armory seems to be the only place if we can get the legislation necessary, and we ought to have it.

Another thing, Mr. Chairman, Dr. Lipman referred to the

alfalfa question. I have said this in some of our Institutes, at our Institute in Vineland in a dairy barn, when we were holding our dairy meeting, at the other end of the building there came in a bale of alfalfa hay, which I supposed had just been cut in the field, it was so beautiful and green. I asked the manager where that came from and he said it came from California. They were bringing alfalfa hay across the continent from California to feed the cows of New Jersey, put down in Philadelphia at twenty-five dollars a ton. That is a reproach to us farmers of New Jersey. We have thousands of acres which can produce alfalfa, let us do it.

Vice-President Cox—There is a motion to the effect that a committee of three be appointed by the Chair to consider the procuring of proper facilities for a meeting place next year. Is that supported?

This motion was carried.

Vice-President Cox—I will appoint on that committee Messrs. Allinson, Van Fleet and Ford.

Vice-President Cox—There was a suggestion that a committee be appointed to prepare and draft a bill to have introduced in the Legislature calling for an appropriation for an exhibit at the Land and Irrigation Exposition in New York, to be held next November; a committee of three to be appointed by the Chair. Will someone make such a motion?

Mr. Collins—I make that motion, Mr. Chairman.

This motion was carried.

Vice-President Cox—The Chair will announce the committee later.

Secretary Dye—It seems to me in this connection that, anticipating favorable legislation, you want to give the President power to appoint a special committee of one in every county in the State, to confer with the central committee, as I suggested awhile ago, to take this matter up. Pretty soon we will be in our homes, and now is the time to do the work.

Vice-President Cox—You have heard the suggestion of the

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Secretary that the President appoint such a Committee, and I would suggest that the Executive Committee be empowered to act as the Central Committee and that the President select one man from each county from the County Boards as a Committee to promote and encourage this exposition, is such a motion made?

Dr. Lipman—I make that motion.

This motion was carried.

Vice-President Cox—There is other unfinished business, that is, the adoption of Mr. Collins' report as the Chairman of the Transportation Committee, the Committee on Transportation and Freight Rates, the suggestion was made that the report be adopted and the committee continued. That question was not put; the motion was not made. Will someone make the motion?

A Delegate—I make the motion.

This motion was carried.

Secretary Dye—Mr. Chairman, we ought to elect here a chemist to the State Board. Dr. Lipman, have you any suggestion to make?

Dr. Lipman—Mr. President, the fertilizer trial work has been in charge of Mr. Charles E. Cathcart for some time past, who is Chief Chemist of the State Experiment Station. Mr. Cathcart has been conducting the work of inspection in a very acceptable manner, and since Mr. Cathcart has been State Chemist *de facto*, I would suggest that he be nominated and elected as State Chemist.

Vice-President Cox—Gentlemen, you have heard the nomination and suggestion that Mr. Charles E. Cathcart be appointed or elected State Chemist.

Mr. DeCamp—Mr. Chairman, would not that be proper to be allowed to be reported on by the Committee on the Election of Officers of the Board?

Vice-President Cox—Mr. DeCamp moves an amendment that it be referred to the Committee on Nominations, is that seconded?

This motion was duly seconded, and, on a vote, carried.

Vice-President Cox—Before we adjourn, I want to call attention to the program for this evening at 7:30 P. M. Is there any other business. I think it would be in order now to receive any resolutions, if there are any; they might be presented now and acted upon or referred. If there is no other business—the report of the Committee on Credentials?

Mr. Allinson—We would like to have the credentials, if there are any more delegates who have not reported.

Vice-President Cox—Will you kindly turn your credentials in to the committee? There being no other business, this meeting will stand adjourned until 7:30 this evening.

FIRST DAY—THIRD SESSION.

The meeting was called to order by Vice-President Cox.

Vice-President Cox—The Board will please be in order. We have first on the program for this evening an address upon “The Farmers’ Share of the Consumers’ Dollar,” by Dr. H. W. Collingwood, editor of the *Rural New Yorker*. Dr. Collingwood will now address you. (Applause.)

Dr. Collingwood’s Address.

MR. PRESIDENT AND FRIENDS—I understand that Ralph Waldo Emerson was at one time a minister, and he said that the first sermon that he ever tried to preach was divided into three heads: First, All Men Pray; second, All Prayers are Answered; third, We Must Be Very Careful What We Pray For.

Now, I have sometimes thought that what I may call the other interests, the Transportation People, and the Handlers of Farm Products, would certainly appreciate that sermon, because I think if they had their way, they would tell the farmer that he ought to be very careful what he asks for. That is, if all his prayers were to be granted, as they would be, I believe, if the farmers of the country would get together through an enduring combination, and all the things they prayed for and they asked for, should come to pass, there would be a great many people in this country who would be obliged to go to work for their living.

I want to get at the truth, if I can, to-night, in regard to this farmer’s share. Now, the truth is what I call a relative term. Strange as it may seem, we do not agree between us as to just what the truth is. I sent my little boy out to describe a house, and the little girl out unknown to the boy, to also describe the house. They came back and said they had absolutely told the truth, and yet they apparently described entirely different houses, and I found that the boy took the back of the house, and the girl

took the front of it. It was the point of view from which they looked at the house that determined the truth as they saw it, and sometimes the raw unvarnished truth, the real article, with barbs on it, goes into a man almost like a dose of bad medicine, and yet it is the thing that he ought to have.

I am told that in a prohibition county in Georgia they held a picnic. The county had gone dry, I am happy to say, and yet there were a few jovial spirits in the county who, in spite of the local dryness, still wanted some of the real goat. They were not quite satisfied with the coffee and the tea which was served up at that picnic, and so when noon came they were very much pleased to see a man come riding over the hills and through the meadow, with great big bulging saddle-bags. That man drove up on the side of a tree, held up his finger, and about a dozen of these gentlemen sauntered out where he was, and they said, "Howdy, stranger?" "Howdy," he says. "Ain't you gentlemen fond of cold tea?" (Laughter.) "Oh, we are; we are very fond of cold tea." "Well," he says, "I have got some of the real cold tea article in my saddle-bags." "Oh, you have?" "What do you charge for it?" "A dollar a bottle." And he pulled out some bottles about as large as that inkstand. And he kept telling about that cold tea. He was very careful not to say anything but "cold tea." The result was that, after some dickering, he sold fifteen bottles at a dollar apiece. Then he gathered up his lines and started off, and they said, "Now, stranger, stop and have a little cold tea with us." "Oh, no, I could not do that, because I have got to get away." "All right; good-bye." Well, they took off the tops of the bottles and—"Happy days," and "Here is how," and all this, and held up a bottle, and what do you think it was? Cold tea, and nothing else. That is all it was. (Laughter.)

Now, that man told the truth. There was a sample of what I call the real, raw, unadulterated truth. They could not accuse the man of selling whiskey, because he offered cold tea, and they could not accuse him of deceiving anybody, because he told the truth about what he had. But, do you know, that if those men had caught him, the truth would also have been told I think.

Now, I bring that up to show that the farmer's share as looked at by a farmer is one thing. That same farmer's share, or what the farmer is said to deserve, looked at through the spectacles of the grocer or the railroad man, or the commission man or any other middleman, is a very different proposition. The farmer's share, from the farmer's standpoint, is one thing. The farmer's share, as we look at it from an other point of view, is quite another thing.

I have been told that in a southern community, a man in authority told me, that the colored people had a song which ran about like this: "Give me my religion, and you may have the rest." And the colored man told me that the only trouble with it was that the white man took him right at his word. He took him just exactly for what he sang. He gave him religion, and would take the rest. Just exactly what the colored man sang the white man was in favor of giving him.

Now, gentlemen, I want to say that I am not in favor, as a farmer, of sitting down and having the farmers sing, "Give me my farm education, and you may have the rest."

The United States Government is spending some six to seven million dollars for farm education, scientific education. Many of the States are spending more. I should say at a rough guess that nine million dollars are spent annually in educating the farmer, telling him how to produce more goods. Telling him how to take care of the tree. Telling him how to raise the larger crop of potatoes. And that is all. But who tells the farmer how to get more money for what he now produces? Shall we go on as farmers, simply producing more and more, more and more, larger crops, on a larger area of land, and selling them at the same proportion which the farmers now receive as their share of what I call the consumer's dollar?

Now, I will not for a moment say that I would decry one word of the scientific education which makes a man a better farmer, because the experi-

ment stations and the colleges, in my judgment, have dug far deeper into the farmer's mind than they ever had any idea they were doing.

When a man has taught you to analyze and value a fertilizer, when a man has taught you how to dig into the soil and learn how to make that soil better, and find out what that soil needs, the same man who has brain to do that thing has also brain to take hold of great affairs and public questions, and analyze them and get to the bottom of them, and my judgment is that one reason why the farmers of the country to-day are, after twenty or twenty-five years, taking a larger interest and a greater share in public affairs, is because of the scientific drill which the Stations and the Colleges have given them, and from one thing there grows another.

Now, I would say, what is the farmer's share? Let us get down and see if we can analyze and find out just what it is. Well, now, we will see; what is the railroad's share? Probably if I could sit down in the office of a railroad president, if I were privileged to do so, and say to him, "I understand that the railroad, the transportation companies are getting from twelve to fifteen cents out of every dollar that is spent in the towns and cities for food and fare." You would say probably that is a fair estimate. He would probably make it less, but I think twelve per cent. would not be far wrong. "Well," I would say to him, "how do you figure that you deserve that? How do you figure that you should have your twelve cents out of the consumer's dollar as a railroad?" "Well," he would probably say, "this way. We have to pay interest on our bonds and our stocks. My railroad, we will say, is capitalized at thirty million dollars. Now, it is no more than fair that that should be paid five and six per cent. on that capital of the stockholder." Well, we agree to that. "Then we have got to spend a certain sum of money for equipment and for repairs, for our rails, they wear out and we have got to have new ones, we have got to build new railroad stations." We agree to that. That is fair. "We have got to pay salaries, fair salaries." I would not like to ask the man how much he was getting himself, that might be what you might call an impertinent question, wouldn't it? Fifty or seventy-five thousand dollars. But it is fair to say that we are bound to pay the men who do the work on the railroad; they have all got to be paid something. That is fair.

I am not trying to make any trouble for him, but I am trying to analyze this thing. That is what he tells us. "We have got to pay interest on a fair valuation of our property, we have got to pay good salaries, and got to keep up the rails and got to do those little things, and got to lay aside a surplus every year." Consequently, when people come and want them to cut down their price for carrying a ton of freight, we object to that, because there are the figures which prove it cannot be done.

Well, I pass that. Now, I go to the commission man and I say, "Here, I understand you are getting some twenty-five or thirty cents out of this dollar which the woman pays for a dollar's worth of food. How do you claim that is a fair share for you?" Well, the man would say: "Here, look at this store in this big city, the rent I have to pay here is three or four thousand dollars for a small store. Look at the risk I have to take. Look at all these expenses I have for handling, carrying, and I have my money invested here, and I have got to pay myself a fair valuation, a fair rate of interest on that valuation, and this money which I have got invested here, and so on." And I agree with him. That is fair. And he says: There will be a lot of bad debts and a lot of times I cannot collect them and I have got to allow for that. I have got to make all these allowances in order to clear myself and give myself a fair five or six per cent. of interest."

And I go to the grocer next and I say: "You are getting twenty cents or twenty-five cents out of this thing—" You see, I am not going to have a great deal left for the farmer. Well, I go to the grocer and I say, "How about you?" Well, the same as the commission man on a smaller scale: "Here, on a little corner in New York city, I have to pay twenty-five hundred dollars rent. I have to sell a great many apples and a great many potatoes and a great many pounds of sugar to get twenty-five hundred dollars. Then I have to pay my clerks. Here I have got five thousand dollars in-

vested on which I have got to pay interest." They all get that interest that they are going to pay on the capital invested.

That is all I learn, and I say: "All right, I think I have got down to a point where I know what the farmer's share ought to be." Here is a farm on that same basis as the railroad and the commission man and the grocer. Take my farm at home, we will say, I call my farm worth, say, eight thousand dollars. I go home to my wife one day and I say: "Come, my girl, we are living on a pretty small basis here; let us make our farm worth twenty-five thousand dollars—let us say it is worth twenty-five thousand dollars." She don't see quite what I am up to, but she agrees to anything, you know. All right. Twenty-five thousand dollars we will call our valuation. That is good. "Now, I ought to be worth, don't you think, I ought to be worth three thousand dollars as manager of this farm?" Well, now, she is kind of dubious about that, until I say that "I think for the work you are doing inside the house you ought to be worth two thousand dollars." So she agrees right off. (Laughter.) That's all right. And then, "I have this boy up here, we ought to call him worth five hundred dollars, and the girl five hundred dollars more." And she certainly agrees to that. "And we have got to spend at least a thousand dollars every year keeping up these repairs." "Yes," she says, "and I need a woodshed, I have to use green wood all the time." I say, "Yes." So we put in five hundred dollars for that, and then I look it all over, and I find I have got down something like thirty-five thousand dollars.

Now, she wants to know: "What are you figuring this for, anyway?" "Why, I find that my friend the railroad man, and I find that my friend the commission man, and my friend the grocer, first of all, say that they have got to have six per cent. on all this money that is invested in all those concerns. Now, six per cent., let us see, I am not very good at figuring, but, as I make it, six per cent. on thirty-five thousand dollars is twenty-one hundred dollars. Now, we have got to get twenty-one hundred dollars out of this place anyway before we pay out any profit at all." That seems right, and she agrees to that right off.

Well, how are you going to get it? Then I go to my friend the commission man and the railroad man for another example, and I find that unless they are dead sure of getting their five and six per cent. on that they won't do any business at all. They won't sell you a ticket except on the basis of making six per cent., and the commission man won't handle your goods short of ten per cent., and something besides, and the grocer has got to make his twenty per cent., and you are very modest indeed when you say you will only making five per cent. on that valuation.

I say, "All right, we won't sell a bushel of potatoes; won't let a pound of butter go off this farm; won't sell a barrel of apples; won't sell a bushel of wheat, except at a price that will pay us our six and ten per cent."

Suppose the farmer took his share that way? He is following exactly the example of the railroad man and the commission man and the grocer. Suppose the farmers got together and said they would stand by such a proposition as that? They are just exactly imitating their friends the railroad and the commission house. Where would they come out?

Why every man in the city would cry anarchy right off. "Here are these miserable farmers out on the farms and in their homes holding up the trades people, won't let them live." Forgetting that we are just carrying out exactly what we have learned from the railroad man, the commission man and the grocer.

Now, I think that is what is meant when I say, "What is the farmer's share?" If you go by history; if you go by analogy; if you go by a fair comparison, that is what a farmer would say his share is.

Now, what does a farmer get?

One of the very first things I do when I come into a town now is to go and buy a half peck of apples and a half peck of potatoes, if I can find a store open. Every time I have talked about this farmer's share, some gentleman has gotten up and said, "You are not fair; you don't give the fair thing."

Now, I am coming loaded hereafter, and I go in a store in the town where I speak and I am going to buy, just like any other citizen, potatoes and apples and a pound of beefsteak, and a pound of pork chops, and bring them right in and give you the price so that you can see how much you are getting out of that. I don't know of any fairer way of doing than that. I could not find any grocery store open to-night, but I looked around and I bought these six apples up here at a store where they are said to sell fine fruit. I paid twenty-five cents for these six apples. (Mr. Collingswood here produces six apples which he puts on the table before him ranged in a row in sight of the Board.)

I figure, as near as I can figure, estimating how my apples run in a barrel, that that amounts to \$12.50 a barrel for apples. And I went to the man, and I said, "Of course, these are Jersey apples?" "Aw, naw." He was an Italian. I said, "What do you mean? You pay taxes in New Jersey, you are a Jerseyman." "Yes, I pay my tax." "You live here?" "I live here." "You are a citizen?" "I am a citizen, yes." "And yet you won't sell Jersey fruit?" "Aw, naw, no Jersey apples." "Where do these come from?" Well, I could not quite understand him, but I think he said the Philippines. (Laughter.) Well, that's a good ways off, and perhaps that is as close to geography as he could get; but those are Western apples, either Oregon or Washington. They come here in a box and there they are. Selling in Trenton to-day at the rate of \$12.50 a barrel. I tried to buy a half peck of Jersey apples, and I could not get them. The store was closed where they had them, but they told me they were selling at twenty-five cents a half peck. That I took to amount to fifty cents a peck, if my arithmetic is right. That is two dollars a bushel, and that is six dollars a barrel.

At another place they had apples that were selling at that same price, at the rate of six dollars a barrel, that were brought in here from Western New York. As nearly as I can figure the average line of those apples in Western New York netted the grower this year \$1.75. That same crop of \$1.75 apple is selling here in Trenton to-day for six dollars.

Now, that is one side of the farmer's share.

Potatoes I am told were selling here at the same price as apples—that is, twenty-five cents a half peck, fifty cents a peck, two dollars a bushel.

I have been through this thousands and thousands of times in records of actual goods sent to the commission man and actual goods sold, and I tell you, my friends, in all candor, in all fairness, that if the farmer, the average farmer of this country gets thirty-five to thirty-eight cents of the dollar which is finally spent by the housewife he is doing very well.

Now, those things don't trouble me at all. Where I live I sell practically everything I have either directly, from the wagon, or people come to the door and get it. It does not affect me in the least. I get the full hundred cents of the dollar, taking out what it costs to deliver the goods. But this other side of it hits me, too. Now, we will say, in Paterson, or Hackensack, where I market most of my goods; many a time have we taken onions over there for example and run upon a carload or two of onions that have been brought in there from outside and sold at extravagantly low prices. They seemed almost to give those onions away. They are shipped in that way. I don't know how they get them, but at times they get hold of onions and cabbage, and, in some cars, potatoes. And they determine the price. Those cheap goods which are thrown upon the market determine the price and bring it down.

I feel it. There are plenty of men right before me to-day who are getting the one hundred cents on the dollar. I have no doubt of it whatever. I have no doubt if I would call upon those men who handle or those men who sell their product to hold up their hands, I should find twelve or fifteen of them right in this house, who are getting the whole dollar out of the consumer.

And I want to be perfectly fair about this thing and put it straight. Here is the other side. I have here an actual letter written by a neighbor who lived out in Passaic county. He is a lawyer and a good one, and if there were any remedy at law for that condition of affairs shown in this letter, that man would have it. Let me just read what he says:

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This is a story of the three-cent dollar, a story of how I sold thirty-seven bushels of one-dollar apples for three cents a bushel.

In the latter part of October I threw a half dozen apples in my grip and brought them to New York. I showed them to Mr. Blank (I won't give the name). He said that red apples like that, that looked as good as that, were in good demand at one dollar a bushel. We talked the matter over, and I shipped him thirty-seven bushels, packed in bushel hampers. They were rigorously culled, and the wormy, misshapen or uncolored ones were thrown out, so that the average fruit shipped was much better than the samples shown.

Now, here are the returns I got :

October 3d, 37 baskets of apples at 35 cents a basket,	\$12 95	
Commission,	\$1 30	
Cartage,	1 85	
Express and freight,	3 33	
		6 48
Our check to balance,	\$6 47	

It cost him one cent more to handle the goods than he got. The baskets cost him \$5.20 delivered at his station, and deducting that from \$6.47, leaves him \$1.27 for his thirty-seven bushels of selected red apples.

And \$1.27 is what he got as interest on his investment for cultivating, for spraying, for picking, for packing and hauling two and a half miles to market.

Now, I expressed surprise to Mr. Blank that he should have sold them so cheap, when I saw that they had much inferior apples retailing at fifty cents a peck. He said that was the way the retailers did, they held up their prices, no matter how cheaply they bought. I then remarked to Mr. Blank I would like to just trace this lot of apples and see what the dealer is actually selling them for. Give me his name and address. Mr. Blank hesitated. Well, he might. He then said he did not know the man's name. I asked him to look it up. He looked over his books and said that he could not find the name. It was a cash sale and that he kept no record whatever of cash sales, and that is all I could get. I now have my three cents a bushel for the apples.

Now, there is absolutely an exact case of just what happens.

If there are fifteen men here who are fortunate enough to get the full hundred cents of the consumer's dollar, I could easily bring the record down to far below thirty cents, by sitting here, hour after hour, if you wanted to see the records, just exactly like that. For I am not speaking for that one fortunate individual who has the good fortune and is blessed in the fact that he is close to the consumer and has the ability to get that whole dollar. I am talking for the poor unfortunate and discouraged man back in the little town or back among the hills who sees the transportation and the commission man literally squeezing the last drop of blood out of his life and out of the joy of his family.

Now, don't think that I have come down here to utter any tirade against the commission men in general. I have not. We have got to have middlemen. As it is now made up we have got to have middlemen between our farms and the consumer. The trouble is that we have got too many middlemen to-day. We are top heavy in that respect.

Year after year the rural population has been growing smaller and smaller in proportion, and more and more people are moving into the town, and we were told that it would be good because there would be that many more people to eat our food that we were producing. The trouble has been that these men who go to town, again and again, form the middlemen, standing between the man who produces the goods and the man who finally consumes them. That is the position that we are getting in, and the great trouble with the farmers in a business way, as I see it to-day, is to get right in and get rid not of all the middlemen, that is not only an impossibility and an injustice, but to get rid of what I may call the useless middlemen, and make those

who are left content with taking a fair share from a fair price for what they handle.

Now, if you want me to, I can give you a lot more instances right here in the State of New Jersey. Here is one that comes to mind. A man in South Jersey sent to one of the largest commission men in Newark thirty bushels of sweet potatoes, and they were good potatoes. The man went down and picked them over himself and packed them himself, where his potatoes were stored, and he had thirteen hundred bushels left, and at the same time he took out an extra peck and did not pack it, but his wife simply took it and put it out in his woodshed, and right on through the long six weeks after that basket of sweet potatoes which his wife put there were still good and they ate them.

Now, he sent the thirty bushels of sweet potatoes to Newark, as I have said. Two days later they were received. The following day he received word that they had rotted so that they had to be thrown away, and that he was expected to pay \$2.57 for freight and cartage, etc., which was short on the bill. And the basket of potatoes which the man took out of his cellar and placed there under the most trying conditions were good to eat six weeks later, but in some mysterious way those potatoes went down and rotted, and it was recorded that they were dumped.

Now, I went into that affair enough to find that the man had absolutely no redress whatever. I spent a lot of time trying to see if we could not make that commission man pay the farmer something for the goods. The commission man offered to come forward with a dozen men, if need be, one man after another, who would swear that those potatoes were decayed and rotten and that they dumped them with their own hands. And, when you come to think that he was handling in the meantime three or four or five thousand barrels of sweets, they must have had most remarkable minds, the most remarkable men in the world. Just think of the memory of the men who could swear right up and down that they knew that every one of the thirty-three barrels out of four or five thousand and that they knew that those thirty-three barrels were dumped and no other. It is a wonderful memory that that man has got. But, had we gone into court, had we pressed the claim, we would have had absolutely no case at all. I don't think the man paid the \$2.47 yet. I hope not. But, at any rate, he was expected to pay the \$2.47.

I went into the case well enough to believe that I could see the way it happened. I wonder if any of you have ever heard of such a case as this? I think it is true that a lot of sweet potatoes came up there and were dumped because they were decayed, but I don't believe the man's potatoes ever went into the dump at all. I do think that some farmer with a great big chest, and a fist pretty near as big as that ice pitcher, I believe that if that man walked right into that office one day and said, "Here, you tell me my potatoes have gone rotten, and if I cannot get the price I am going to take it right out of you." I think they would have paid him for his sweet potatoes, and they looked around for something on which to get that back. Now, I think, as nearly as I can make out from the talk around the office, that this gentleman down in South Jersey with thirty-three barrels of sweet potatoes, was looked upon as rather an easy man to frighten, and he was not up there and did not have a fist quite as big as that ice pitcher, that was about the way that went.

We are trying to get all the world to go in with us on these peace arbitration treaties, and we are trying to preach the gospel of getting down and not saying a word, turning over the other cheek, but still it is a fact that a good display of courage, and a good display of bluff, and a good display of power, after all, has a wonderful effect upon the people who are trying to get our goods away from us.

When I was in Michigan last summer I met a German who gave me a new idea that I had not met before. He said that in his younger days he went around the country putting organs in the German churches. He found a place where the people were keen on having an organ, and he went up one day and he sold an organ to the church and he had the contract signed by

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the deacons and the elders or whoever their governing board might be, and he was to be paid in a certain manner, and he went off and bought the organ, because he felt that he had made a contract with the church and that was as good as gold, and he put up the cash or borrowed it and got the organ.

So he came back with the organ on his wagon as proud as could be, and then he found that while he was gone trouble had occurred in the church and they had disbanded, and the deacons and elders refused to pay him on their contract. Well, he was not going to be bluffed that way, and he went around with a paper getting the people to put down ten dollars or fifty dollars or whatever he could get out of them. The last man he went to was the sexton of the church, and he said to him: "Mr. So and So, what do I have you put down here?" The man said: "Nothing; I give you nothing." "Why not?" He says: "I give nothing for the church because the church was bunco me." Now, the idea of a man being buncoed by a church seemed peculiar and the man wanted to know how that was. "Well," he says, "I will tell you how it is. They came to me and asked me will I take the charge of the sexton through the year. I say, 'How much there is in the job, how much for that job?' 'Well,' they say, 'I get drie dollar for every grave I dig, and in that drie years that more than a hundred and fifty graves.' That would be four hundred and fifty dollars. Well, I discount that four hundred and fifty dollars, I borrow that money, and in that three years only one man die. Now, this country is too healthy for an honest man." (Laughter and applause.)

There are lots of countries altogether too healthy for an honest man to live in. (Laughter.)

Now, having spoken of the fact, as I believe, that the average farmer's share in this game of selling and producing is thirty-five cents on the dollar, I don't want to leave the subject simply with a grunt or a complaint. The subject is bad enough, but when you come to analyze it the more you look into it and the more you look up the prices here in Newark or New York and compare them with what the average farmer gets we find that I am right.

But let us not leave the subject there. What can we do? What can we do as farmers, admitting the fact that we get about one-third on the average of what the consumer pays? What are we going to do about it? Is there any way out?

I think there is. I am just as hopeful as a dream about all these things, because I have come more and more to see that it is only a question of putting the thought of the people directly upon a problem in order to work it out.

I say there are a dozen or fifteen men right in this audience who are getting every cent of the consumer's dollar. How do they do it? There must be a way. There must be a way to get more out of this dollar. How do they do it?

In the first place, transportation is wrong. Our express service is not what it should be. The average express company has been making so much money that they don't know what to do with it. That is a fact. The Adams Express Company had such a surplus of money that they did not know how to dispose of it. They could not in all conscience have it known that they were giving away forty or fifty or even sixty per cent. of their stock. But the money was piling up there. What should they do? The Adams was the same as half dozen others. To get around that they had resort to a new issue of stock. Like my wife and myself, by doubling and increasing from the eight thousand up to thirty and thirty-five thousand dollars on the value of our farm, and then if we got five per cent. on the thirty thousand dollars it is rather more than five per cent. on the eight thousand dollars. To get rid of that money the express companies are increasing the issues of their stock and distributing that stock around among the present stockholders. Thus they may distribute their surplus at five, eight or ten per cent. and thus get rid of it.

There is no question on earth but what the express companies are holding us up in this country. I know two years ago I made a contract with a lot of people in New York city who sold apples in Boston. I made, as I thought, a fair

price for a dollar box for a fair-sized apple, not a large apple, but a fair-sized apple. I agreed to deliver that dollar box, and the express company took my box for three or four months at twenty-five cents. Without any warning to me, or intimation of what was going to be done, that price was shifted and shot up to forty cents. I could get no explanation whatever. They were just within their rights on an interstate shipment. I had made my contract with my customers at a certain price and they jumped up the price to fifteen cents more without any warning, without any chance for any expression at all.

And I believe that thing is going to continue. I believe that that hold up on the part of the express company will continue in this country until we have a fair and square parcels post. (Applause.)

Now, people may talk to me about the tariff, they may talk to me about the money question, who is going to be President, who is going to be Governor, and all that thing. There is no question before us as producers to-day of one-half the importance as the establishment of a fair parcels post.

Now, if you farmers, every one of you lived in England—you don't want to move over there, even if they have got things any better than we have. Let us suppose that your farm was located within twenty-five or thirty miles distance from some of the large cities. You could call up your customers in town on the telephone, managed and controlled by the government.

I don't know what your rates are down here, but I pay fifty-four dollars a year for my telephone. I understand that in England, under the government service, the price is dropping, dropping, from forty dollars down to twelve dollars a year, and the English government is running it on a fair basis at that price. You could call up your customers in the morning and say, "Good morning, what do you want to-day?" The housewife might want a couple dozen eggs, or a chicken, whatever she wants. What would you do. You would pack those things in cases so that by experiment they knew they would carry, and you would mail those. You could mail a chicken. You could mail a dozen eggs. You could mail up to eleven pounds of apples or potatoes at a fair rate, and have it delivered on the day when it was mailed.

A woman in Hamburg, Germany, can 'phone or telegraph at government expense at night way down to the bottom of Germany, on the Mediterranean sea or thereabouts, and order a fish to be delivered the next day for dinner, at government expense, for a few cents for the telephone or telegraph. The fresh fish is mailed, and gets there in time for her dinner the next day.

Parcels post. The postal service, the railroad, the telegraph and the telephone, all under government control, working that way.

Now, what has been the result over in England? And over in Germany? The result has been that this high cost of living has been brought down. Had it not been for their service over there the cost of meat and the cost of food in Germany would have gone up out of all proportion.

Not only is that so, but there are a few of such things as we call in this country the great department store in Germany. The little stores out in the country have a chance to deliver their goods by the parcels post. And why? Because they have found that there are hundreds of those lighter articles which they sell which are delivered to them by mail in small, light packages, cheaper and quicker and in better shape than they can get them in the larger lots either by freight or by express. And they have their telephone service and their telegraph service and they serve the people on their routes.

Let us once have that sort of thing and we can see immediately, just on my own farm, just what I get.

Let us see what we can do. Let us see what you get. I can call up a dozen customers in Hackensack, my market town, or Ridgewood, four or five miles away. I can call those people up early in the morning and ask them just what they want. Then they tell me. I can pick those goods out and pack them and stamp them and give them to the mail carrier when he comes around and he carries them there and delivers them for just about one-half or less than they cost by express.

The result would be the express companies would be forced and obliged to give me a fair rate.

You may not know that among our bills now before Congress to obtain this parcels-post proposition is one by Congressman Lewis, of Maryland. It is on the theory that the government should buy up these express companies. His proposition is to buy their fixtures. When you come to talk about good-will, I don't know that the express companies ever had any particular good-will for the public, probably. So that I don't know that the good-will would ever be a valuable thing. But Congressman Lewis proposes to appropriate money enough to buy up the fixtures and tangible property of the express companies, pay them a fair price for that actual property in sight, and then simply turn that business right over to the postal department.

As we know, Postmaster General Hitchcock is now out with a proposition for the government to buy out all the telegraph lines. That is the latest proposition to go before Congress. I understand it will go there in about a week. His proposition is that it will cost about five hundred million dollars. I don't think we are ready for it. We are not ready for that. But there can be no question whatever, my friends, that sooner or later those things have got to come. The American people have got to take hold of it as a matter of safety.

As for the parcels post, they tell me at Washington that there never has been a time within the past twelve years when we were nearer the control of the parcels post than we are to-day. The constant hammering and hammering and pounding, the writing of letters which farmers have been carrying on all these years, have at last had their effect.

But for the Congressman from New Jersey, New York, New England, or anywhere else, it takes a great many years to actually make up their minds that the farmers mean business. You know how those men regard a farmer. They will say that the farmer will growl, but he never will bite. I have heard these public men in Washington say that very thing about the farmer, sitting around at night smoking their cigars and talking things over. Their proposition is that a farmer will growl, and bark, but he never will bite. They go on the theory that the average farmer will make up his mind and talk fight, and they think he may have all that into his mind and be in that frame of mind every day up to election day. It gets worse and worse and he talks more about it, and he talks that way until he gets inside of that booth, and then he says: "Well, now, I guess I will do it once more, but the next year will be the last. (Laughter.)"

Now, friends, have these Congressmen sized us up properly or not? I ask you. For all I know that may be like my friend in Georgia selling his cold tea.

But it is coming to the time, my friends, when we are absolutely going to have the parcels post. We are going to have it or break. We are going to have a public service of the mail that will be a real service and help us, or somebody will be left at home from Washington. We have said that a lot of times, but I honestly believe that the public and the authorities in Washington now understand and believe that very thing, and I do hope that from now on every man who can will take care that his Congressman understands the exact feelings of the people at home. That is one thing.

Now, what else? Advertising. The average farmer seems to be afraid that people will know that he has got things to sell. I put a little ad. in our local paper. It cost me one dollar and eighty-five cents, and from that one little ad. I sold eighty-five dollars worth of apples. Dozens of people came and said, "I did not know there was anybody around here that had apples for sale. I want them." A man named Albertson, who lives in New Jersey, he has a summer home in Dutchess county, New York. He rented an orchard of his neighbor, an old man, for five years. He sprayed the trees and took good care of them, and the second year he got a good crop. He did not know what to do with them. He shipped some down to New York and the commission men gave him just about such a deal as I have mentioned here. Just about the same thing. He put an advertisement in a New

York paper, the New York *Tribune*, and in a Philadelphia paper, stating that he had boxed apples for sale; the price and all was given. One of our people saw the advertisement and sent it to me, and I had it re-engraved, just as it was, and printed it in the *Rural New Yorker*. Now, it is a singular thing, that we received over forty letters from people who wanted to know where that man lived; that they wanted to buy apples. And a dozen men sent the money. One man actually went so far as to enclose a check for about ten dollars and send it to this man Albertson, simply "Dutchess County, New York," without any post office. He had that faith in the apples.

Mr. Albertson tells me that he sold all the apples he had within two or three weeks, and that he found now, nearly nine weeks after the advertisement was in the paper, that the calls are coming four and five every day for his apples.

Now, my friends, there is a point for the farmer. Let us say that four or five farmers get together, each one growing the same crop of apples, or so much of the same kind, and they put them up neatly in boxes and then put them up in uniform shape, and they get together and they advertise them as boxed apples. You would be absolutely astonished, and I know it, if you could find just what such an advertisement as that, right here in a Trenton local paper, would realize. It is one of the greatest things in the world. This idea of putting up an advertisement and coming out fairly and squarely and offering what you have for sale. I have a blackboard in front of my farm at home, and when we have anything for sale one of the children takes a piece of chalk and chalks out there, "Apples, Potatoes, Fruit," whatever we may have for sale. You would be astonished to see how many people stop and read that sign and come back and get fruit. One woman drove up in an automobile every other day to buy ten and fifteen quarts of Marshall strawberries, and they were so fine she did not want them crated, she spread them out all over the front seat and travelled around the highway with them, and when she met people she took that means to show them what great berries she had, and there were ten or a dozen people who came to our farm for that same kind of berry that they saw in the automobile. Why it is one of the most surprising things what music you can make if you will only blow your own horn. (Applause and laughter.) If you will only blow your own horn, there will be far more harmony than discord.

I talked of discord to a farmer down in Connecticut once, and told him about that and urged him to put out a blackboard. He said, "What could I sell? Nobody goes by here." I said, "Never mind; be like a Yankee, always in favor of trading. What have you got for sale?" Well, now, he scratched his head and could not think of anything but a yellow dog. Well, now, that is enough to stump even a Jersey man, but I had talked advertising, and I said, "Let us try it." We got out an old board and marked on it, "Dog for Sale," and the people went by and ha-ha'd. You could hear that for a quarter of a mile away. But none came. And the fellow looked at me and said, "Nothing doing." But, one day, about three weeks after that was put up, a woman with a nice horse and carriage drove into that yard and said, "I want to buy that dog." She had a boy, a little crippled boy, and wanted to buy the dog. A man had gone past that house and laughed at the sign, and he met some more men and told them what the fool up there was doing, sticking a sign up like that, and he took a pencil and made a note of it. And that laughing story went through different people until the tale came to the woman who wanted the dog, and she came and bought the dog. (Laughter.)

Now, I don't know of a harder test than that for advertising. But that is one where it worked out. And if people will only come out over their own names, and let people know what they have got, and come right out into the open and say, "Here is what I have got for sale," they will find the results.

Ten years ago I went down to Virginia to a fruit meeting, and I talked this very thing about selling fruit, peddling, and after I was done a fine old gentleman stepped up—one of those fine old Virginia gentlemen. He looked as though he had stepped out of a picture. And he said, "Sir, I appreciate,

sir, what you have to say, sir; but I wish you to understand, sir, that we are Virginia gentlemen, and cannot peddle. That, sir, is beneath our dignity, as gentlemen, to peddle our fruit, as we are wholesalers."

Well, I took the rebuke and told him I was very sorry.

This year I went down there and talked the same thing, and twenty-five different young men came up and told me that they were doing that thing and doing it successfully. With that spirit in them—when a farmer—a Virginian, or a Jerseyman, or a Yankee, or a Dutchman, I don't care what—gets over the silly idea that it is unbecoming his dignity to peddle a box of apples, he takes a step upwards. He has not gone down, he has gone up. All over the country people are coming to that. It is a curious thing that while the Virginians are actually coming so that they feel they can go out and peddle their stuff, the Yankees, who were the greatest peddlers in the world, are getting out of that business and turning it over to the foreigners to peddle for them.

You have no idea what can be developed right here in the city of Trenton, right here in a hundred Jersey towns that I might mention, if you will simply let the people know what you have got and what there is that you can offer them for sale. And, in my judgment, that is the way out for the little farmer who has the small farm. A lot of farmers could make a combination, they could get together. The man with the great area of land, producing a large amount of goods, that man has the capital and he has the stock and he is able to put it out and to sell the year around.

During the year I suppose we have a hundred and fifty calls from people, many of them in New Jersey, who say that they keep, say, two or three or four hundred hens, and they have a good supply of fresh eggs which they will guarantee, but now, they say, "I understand that the big hotels in New York will sometimes pay ten or fifteen cents above the market price for absolutely fresh eggs. Now, we want that trade." When I was younger I used to go and search out the hotel men and tell them about these men, and say, "Now, can't you take this man's eggs?" They will say, "Not on your life; we won't touch them." "Why not?" "Well," they said, "that man will run along and while he has got the eggs he will deliver them and be honest about it; by and by, when the hens run dry and won't lay, where are we at? No, we have got to make a contract with somebody that will give us a hundred and fifty to two hundred eggs every day in the year. We know they are coming and they will be here at a certain time." That is fair. They would rather buy a commission man's eggs; they have got that commission man right down under their finger; when he sells them eggs a little too old, or an egg that is not right, they go right to him and find fault with him. But let fifteen or ten or twenty farmers come together, each one of them having two or three or four hundred hens, and let those men make their combination, and then go up there in a condition to guarantee that hundred and fifty or two hundred eggs a day, and this man will jump at the chance of doing it. They don't want to be bothered. They don't want to see the day come when they want eggs and they cannot get them.

I speak of that to show, in order to carry this thing through and deal with these large establishments in the large cities, it must be an association of farmers coming together so as to guarantee a certain large proportion or a certain large number of potatoes or eggs.

Often people say, "Why can't I go to New York or Boston and open a store?" You can. Out in the West they are doing that thing exactly. In certain towns the Illinois farmers have combined and they have sent a man into the town to open a little store right on the corner. One of those I heard of. A man who was an absolute failure in farming. The neighbors had to feed his family during the winter. He was starving to death on a good farm. He was not a farmer, but he was a natural trader. He would come along, and before he got done with you, he would have your jackknife or your watch and you would have some useless thing in your pocket. And you would go off perfectly satisfied. Some of the shrewd farmers said, "Send this man to town and let him open a store." Everybody laughed about it. "The man

cannot run a farm." "But," said my old friend, "he can trade, and he can go there and he can handle our goods and do us far more good than he can at home running a farm." An he proved to be right. They picked the right man out, and put him in a little store and sent their goods there. What was the result? For the first two or three months every grocer in town tried to put him out of business. The people were getting the cheapest goods they ever had in their lives. The prices were way down. And a lot of those farmers found they were not getting as much money for their goods as they did when they actually took them down and sold them at wholesale, and they wanted to draw out. This little man from the corner went out there to his friends and said, "Hang together. Nothing was ever done without some sacrifice. Now you can make that all up and it will come out all right." And they hung together, and by and by the grocers got tired of giving their profits away and they wanted to come back to business methods. And now that business has been firmly established as a retail business in a little town.

Why, there are opportunities everywhere. I wish I could get hold of some of these younger men and make them see and understand the possibilities that there are in the business of farming. The scientific men of the colleges and the stations tell us what there is and what can be grown out of the soil. It is a marvelous thing. No man has ever come anywhere near telling us what can be done on one square acre of land. But, above that, and beyond it, and growing out of it, there are still greater opportunities in selling and handling our goods if we go about it in a business-like way and get over this prejudice against peddling goods. Come right down to the proposition that we have got the goods and are ready, and that we will sell them anywhere from a dozen apples, if need be, up to five hundred barrels, to whoever will buy.

Combination and co-operation. They have worked that out in California in a most wonderful way with their orchard organizations. How did they do it? They tried a half dozen schemes to make it go and could not, and they came back to New York and hired a man and told him they would give him ten thousand dollars to come out there and handle that organization. He went out there, took charge, and put it in the shape it is for them to-day. There came a time when they found that the lemons were coming over from Sicily. They sent their men right over there to find out all about the lemon growing in Sicily. They did not say take the tariff off of lemons. Their man went out there and got the figures.

The railroads wanted to raise the tariff to one dollar and fifteen cents a hundred, and they sent their man to Washington and he fought the increase before the Interstate Commerce Commission and had it put back to a dollar, and now he is fighting for fifteen cents more and the growers are going to get it.

But they are organized in that way, and just like any other business it must be organized. You have no idea, my friends, of the power of combination. Let me give you just one illustration of what it can do. Let us suppose that in some way I had trouble with my friend, the President here. I talk to him. He sees me. He won't pay any attention to me, till there comes a time when I find, as a law-abiding, peaceable citizen, that I have got to make him take back something, if I have to fight him. I hate to do it, but the time has come. I think I can handle him, I think I can. So I come to him and I say I think I will make a big impression on him, I will hit him with that finger; and I walk over to him and I hit him with that finger so that I hurt myself more than I do him. I come back, and I see it did not trouble him, so I think I took the wrong finger. I say, let me try that one, and I go over and try the other finger, and he laughs at me. And I take the next finger, and with all the power in my shoulder I let him have that finger; and he says to me, "You don't amount to anything." And I take the next finger and I hit him with that, and still he laughs at me. Well, I come over to him with my thumb and I hit him, and he feels it, but he says nothing to it. And I go back and say, "What is the matter with me, anyway? My shoulder is all right, my arm is all right, my elbow is all right, my forearm is strong, my wrist is all right, I am all right apparently

down to the hand, but when I strike there somehow I feel that I fail. Let me try the hand. Let me try co-operation. (Laughter.) Let me try combination." And I put this finger down there, and that there and that there, and I say, with my fist made up, "Here, now, you just come here." What will he do? He will get up and say, "My dear sir, why didn't you say so before." (Laughter and applause.) I made no impression on him with my little finger or these other fingers, but when I get them together, the power there and here combined was exactly the same as it was before; there is absolutely no difference in the power of the arm, but the little difference was there in the hand. I think I could come to him now and take his pocketbook right out of his pocket.

I can give you no better illustration of the power of organization.

One thing more. It is true the farmers have got to get together in these matters. They can do it and they will. They have done it out west, because the western country is newer and they do not have the old prejudices. They do not have the feelings of old systems that they have in this country. Out there the men must get together or be swamped, but here, way back five and six generations, we have been tied and wedded to the idea that these fingers must all be separated, and it is hard for the older men, I don't care if they go to the same church, I don't care if the children all go to the same school, I don't care if they are neighbors and friends. All right. It is hard for them to get those fingers all together into true co-operation. But the younger men are going to do it. They are coming up to an age when their own interests will drive them to it.

And another thing, better than all this co-operation and getting together for business purposes is the coming together for the brotherhood of man. For all the good things of life, all the things that we hope for, all the things that we pray for, have in the past come out of the country and out of the farm, and so it will be in the future. So it will be in the future. They will come from the country homes and from the land, where men can have control of their children and bring them up. Where men may live in solitude for a time and learn those things that make them better citizens and better men.

Vice-President Cox—We have listened with a great deal of pleasure to the address of Dr. Collingwood. If there is no objection, the address will be received and made a part of the record of the session.

The next matter on the progame for this evening is an illustrated lecture by Dr. Warren, entitled "Farm Management." Dr. Warren comes back to us a visitor from our neighbor, the State of New York. Dr. Warren happens to be one of those people who have been taken away from us for a season, and I am glad, I am sure we are all glad, to welcome him back here to-night as a visitor, and I have the pleasure of presenting to you Dr. Warren, of the New York State College, at Ithaca, New York. (Applause.)

Dr. Warren—Mr. Chairman and friends: I certainly am very glad of the opportunity to speak to an audience of New Jersey farmers. About six years ago I had the privilege of being in-

structed through the questions asked of me in the Institutes of New Jersey and through questions which I asked the farmers the summer preceding the Institute. The chief work that I have this evening is the result of finding out from the farmers how they farm; and I have been trying to find that out, not only in New Jersey, but in New York State, by questioning the farmers in general. We have been listening to an address on what I believe is the greatest question at the present time before the farmers. The farmer is to-day efficient. He is farming effectively. There is a common statement made by our railroad friends, business men in cities, and most anybody else who is not a farmer and who is or has made money out of some monopoly or by some other favorable circumstance, that if the farmers ran their business as they run theirs, what a great time it would be for them. And, whenever I hear a man say that I notice that everybody agrees at once, for that is the first thing naturally anybody says, if the farmers would use business methods, the business methods which the city man uses, he would prosper so much more than he now prospers. My reply is, if he used business methods such as the New York Central Railroad uses, for example, he would be absolutely bankrupt. I have traveled on the New York Central Railroad. The farmer is using business methods to-day, in my opinion, which are just as good as are used by his son and his brother who run the New York Central Railroad. In other words, I believe the father left on the farm, and the brother who stayed on the farm, are just about the same, not much better, not much worse, than the one who went to town and made more money so that he might tell the other one how ignorant he is.

I have studied farming on more farms I believe than any other person in the country. We now have records of the receipts and expenses in New York State of 2,409 farms, from which we calculate what the farmer has made, and have been able to analyze his business and see how effectively he was doing. These are the figures which I will give you to-night.

Some Principles of Farm Management.

BY G. F. WARREN, PROFESSOR OF FARM MANAGEMENT, CORNELL UNIVERSITY.

Unlike methods of feeding and fertilizing, the principles of farm management cannot be studied on a college farm. The facts for such work exist on the regular farms and nowhere else.

During the past six years we have been gathering records of receipts and expenses on New York farms in order to learn which farms are paying best and find how much such farms differ from these that are not paying so well.

TABLE I.—AVERAGES, TOMPKINS COUNTY.

Number of farms,	615
Average capital,	\$5,527
Average receipts,	1,146
Average expenses,	389
Farm income,	757
Interest at 5 per cent.,	276
Income from unpaid labor,	481
Value of unpaid labor, except owner's,	58
Labor income,	423

Table I shows the averages for Tompkins county.¹ The average capital on these farms was \$5,527. This includes land, buildings, stock, machinery, tools feed and seed on April 1st and cash to run the farm. The average receipts for the year were \$1,146. Any unsold products or increase in animals is counted as a receipt. The average expenses were \$389. This includes all business or farm expenses. It does not include any personal expenses, but includes the value of board furnished to hired help.

The difference between the receipts and expenses averaged \$757.

This \$757 was earned by the farmer's money and the work of the family. Money can readily be loaned on farm mortgages at 5 per cent. Hence, only \$481 can be said to have been earned by the labor of the farmer and his family. The unpaid farm labor by members of the family would have cost about \$58 if it had been hired. The farmer really earned as his wages, \$423. This we call his labor income. It corresponds to wages paid to a hired man who also gets house rent and some farm products. Hired men get about \$360, house, etc., in this region. If a farmer's labor income is less than this he might as well lend his money and hire out.

About one-third of the farmers in Tompkins county are making less than hired men's wages; one-third are making wages, and one-third make more than wages.

Table 2 shows the same results for Livingston county. The region is a very prosperous one and gives an average labor income of \$584.

TABLE 2.—AVERAGES, LIVINGSTON COUNTY.

Number of farms,	374
Average capital,	\$10,548
Average receipts,	2,172
Average expenses,	980
Farm income,	1,192
Interest at 5 per cent.,	527
Income from unpaid labor,	665
Value of unpaid labor, except owner's,	81
Labor income,	584

¹ For a fuller discussion of methods of work and other conclusions, see Bulletin 295 of the Cornell Experiment Station.

Is the farmer getting rich? It is perfectly evident that the farmer is not getting rich so fast as newspapers would have us believe. Similar work in New Hampshire shows that the farmers are not doing so well. Work in the Central West shows that the average is about like New York. Farming pays better than formerly. It is now possible to make a good living on the farm—a thing that was almost impossible twenty years ago, but I do not believe that the farmer is even yet getting his full share of the prosperity of the country. He is not yet able to pay wages that compare with city pay for such highly skilled labor as the farm demands. Some persons persistently compare farmers with unskilled city labor. But the farmer is a capitalist, business man and skilled laborer. Very few skilled labor occupations are so difficult to learn. The farmer should be compared with the city business man who has a capital of \$5,000 to \$30,000.

Most of the great profits that the public attributes to farming have come from increased land values. For every farmer who has retired from profits in real farming, probably ten have retired on profits from real estate.

But some farmers are now doing very well. How do they differ from the average? The most important differences are in size of business, diversity of business and productiveness of crops and stock.

RELATION OF CAPITAL TO PROFITS.—Table 3 shows the relation of the amount of capital to the wages made by the farmers in Tompkins county.

TABLE 3.—RELATION OF CAPITAL TO LABOR INCOME.

615 Farms.—Tompkins County.

<i>Capital.</i>	<i>No. of Farms.</i>	<i>Labor Income.</i>
\$2,000 or less,	36	\$192
2,001-\$4,000,	200	240
4,001- 6,000,	183	399
6,001- 8,000,	94	530
8,001-10,000,	45	639
10,001-15,000,	44	870
Over 15,000,	13	1,164

Farmers with less than \$5,000 received wages (labor incomes) of less than hired men receive. A hired man in this region gets about \$360 per year. If a farmer gets less than this, he would be better off if he lent his money at 5 per cent. and hired out to a neighbor. Of 347 farmers with capitals of less than \$4,001, not one made a labor income of \$1,000.

RELATION OF CAPITAL TO PROFITS.

<i>Capital.</i>	<i>Number of Farmers.</i>	<i>Per Cent. of the Farmers Making Labor Incomes of Over \$1,000.</i>
\$2,000 and less,	66	0
2,001-\$4,000,	283	0
4,001- 6,000,	265	7
6,001- 8,000,	127	13
8,001-10,000,	59	20
10,001-15,000,	53	30
Over, \$15,000,	16	43

Among these men there are many able men—men of as great ability as we find in any business. Certainly the chances of making a large profit with so little capital are not very good. But, with larger capitals, both the averages and the upper limits are better. Of the farmers with over \$15,000 capital, 43 per cent. made labor incomes of over \$1,000. They made interest on their investment and more than \$90 per month for their time. A number of them made over \$200 per month.

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TABLE 4.—CAPITAL RELATED TO LABOR INCOME.

578 Farms, Livingston County.

<i>Capital.</i>	<i>Number of Farms.</i>	<i>Average Labor Income.</i>
\$5,000 or less,	87	\$291
5,001-\$7,500,	80	407
7,501-10,000,	112	480
10,001-15,000,	164	769
15,001-20,000,	62	1,001
20,001-30,000,	55	1,062
Over \$30,000,	18	1,691

The same points are shown in Table 4 for Livingston county. The farmers with less than \$5,000 are not doing as well as hired men. Those with larger capitals are doing well.

The same condition confronts us in all parts of the United States and Canada. Farming requires capital—much more capital than formerly. How may the young man hope to get started when he lacks this capital? This does not mean that a young man without capital is debarred from farming. It does mean that more capital is needed than formerly, but the method of procedure to get this larger amount has not changed. The young man without capital may start as a hired man, then become a tenant. Tenants with \$1,000 to \$2,000 of capital are doing much better than owners with \$5,000 to \$8,000, because this sum of money enables them to secure the use of a large amount of capital belonging to the landlord and so enables them to carry on a good business. Persons with small farms may increase the size of business by renting additional land. One-fifth of the owners in Livingston county rent additional land because they recognize that their farms are too small. With the same machinery, horses and men they are able to work the additional land with very little more cost and can in this way greatly increase their income.

RELATION OF SIZE OF FARM TO PROFITS. Another way of measuring the size of business is by area of the farm. When farms are measured by acres we must be careful not to compare farms of distinctly different kinds. Ten acres of muck land may enable one to run as large a business as 100 acres of regular farm land and usually involves as much capital. A fifty-acre fruit farm may mean as large a business and involves as much capital as a 200-acre general farm. In the following considerations we have omitted the muck farms. The figures are for farms on which milk, butter, hay, grain, potatoes, apples, lambs, eggs, etc., are sold.

TABLE 5.—SIZE OF FARM RELATED TO PROFITS.

586 Farms, Tompkins County.

<i>Acres.</i>	<i>Number of of Farms.</i>	<i>Average Size (Acres).</i>	<i>Labor Income.</i>
30 or less,	30	21	\$168
31- 60,	108	49	254
61-100,	214	83	373
101-150,	143	124	436
151-200,	57	177	635
Over 200,	34	261	946
Average, .....	...	103	415

Table 5 shows how important the size of farm is in affecting profits. The farms of less than 60 acres do not give the owner farm wages.

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TABLE 6.—AREA RELATED TO LABOR INCOME.

578 Farms, Tompkins County.

<i>Acres Farmed.</i>	<i>No. of Farms.</i>	<i>Average Acres</i>	
		<i>Farmed.</i>	<i>Labor Income.</i>
30 or less,	17	20	\$54
31- 50,	35	43	295
51-100,	147	79	437
101-150,	178	127	593
151-200,	89	175	934
Over 200,	112	305	1,082

Table 6 shows the same results for Livingston county. Evidently a very small farm is a great handicap. Eastern farms were laid out in the days of the grain cradle and scythe. They are not the proper area for efficient use of modern machinery.

TABLE 7.—SIZE OF FARM RELATED TO LABOR, TOMPKINS COUNTY.

<i>Acres.</i>	<i>Area Farmed per \$100 Worth of Labor.</i>
30 or less,	5 acres
31- 60,	12 "
61-100,	18 "
101-150,	22 "
151-200,	26 "
Over 200,	30 "

Table 7 shows that the area farmed with \$100 worth of labor is six times as great on the largest farms as on the smallest.

TABLE 8.—SIZE OF FARM RELATED TO HORSES, TOMPKINS COUNTY.

<i>Acres.</i>	<i>Average Size (Acres).</i>	<i>Average No. of Horses.</i>	<i>Acres Per Horse.</i>
30 or less,	21	1.4	15.0
31- 60,	49	2.3	21.3
61-100,	83	2.8	29.6
101-150,	124	3.4	36.5
151-200,	177	4.3	41.2
Over 200,	261	5.3	49.2
Average,	103	3.1	33.2

Table 8 shows that a horse farms three times the area on the largest farms as on the smallest. The horse is just as well off working as standing in the barn. The barn is better off, as it does not get kicked so much when the horse has work enough to keep him happy.

TABLE 9.—AREA RELATED TO EFFICIENCY OF MACHINERY.

586 Farms, Tompkins County.

<i>Acres Farmed.</i>	<i>Value of Machinery.</i>	<i>Acres Farmed with \$100 Worth of Machinery.</i>
30 or less,	\$125	17
31- 60,	243	20
61-100,	341	24
101-150,	495	25
151-200,	592	30
Over 200,	914	29

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Table 9 shows that while the small farms have very little machinery, yet they have too much per acre. The area farmed with \$100 worth of machinery is twice as great on the larger farms. The same conclusions are shown by the results in other counties.

If the farm is very small, it must have small fields if a rotation is followed. Small fields cannot be worked economically. Many farm operations require two men if they are to be done economically. The small one-man farm is wasteful of everything.

TABLE 10.—AREA RELATED TO UNPRODUCTIVE CAPITAL.

578 Farms, Livingston County.

<i>Acres Farmed.</i>	<i>Per Cent. of Capital in Houses.</i>	
	<i>Value of Houses.</i>	<i>Per Cent. of Total Capital in Houses.</i>
30 or less,	\$1,494	43
31- 50,	1,000	23
51-100,	1,236	18
101-150,	1,477	14
151-200,	1,810	13
Over 200,	2,113	9

One of the most serious obstacles on the small farm is the amount of capital that is tied up in unproductive things. No matter how small the farm, the farmer needs a house. If he is to live as well as his neighbors, he must have as good a house on 20 acres as on 200. Table 10 shows that while the larger farms have more money in homes, yet the proportion of the capital thus tied up is much less. The barns on the larger farms are better, yet the money thus tied up is much less. A barn for 10 cows costs more than half as much as a barn for 20 cows. A total of 62 per cent. of the money on the small farms is tied up in buildings, while on the larger farms only 20 per cent. is idle for this reason. Not only is the money in buildings taken out of the business, but buildings demand constant repairs.

Another way of measuring the size of farm is by the number of men. Again we find that the larger business pays better.

HOW LARGE SHOULD A FARM BE.—An efficient farm should have at least two men by the year. This will usually be a father and his son. Three men are much better. With general farming, this calls for 4 to 7 horses and 200 to 300 acres of land. The upper limit of size depends much on the layout of the farm. With ideal conditions, with buildings in the center of the farm and with a public road going past the buildings, about 600 acres is the limit. More than this puts the fields so far away that the expense of hauling feed and manure is too great. It is not often possible to get over 200 to 300 acres well located. This area is enough to use buildings, horses and machinery to very good advantage.

There does not appear to be any danger of large "bonanza" farms developing. The "family farm" will remain the typical farm. But with machinery the family needs they can economically farm a larger area than was formerly possible.

EFFECT OF LARGER FARMS ON PUBLIC WELFARE.—Many persons are afraid that the large farms will have poorer crops. The larger farms have as good or better crop yields as the smaller ones, as shown by Table 11. The horses consume less in the production, so that more food is available for human use from the larger farms.

TABLE II.—SIZE OF FARM RELATED TO CROP YIELDS, LIVINGSTON COUNTY.

Acres.	Aver. Size Acres.	Acres per Animal Unit.	Yield per Acre of				
			Wheat.	Oats.	Hay.	Potatoes.	Beans.
30 or less, ...	20	5.0	18 bu.	39 bu.	1.21 T.	92 bu.	18 bu.
31- 50,	44	6.3	19 bu.	40 bu.	1.58 T.	98 bu.	18 bu.
51-100,	79	6.1	19 bu.	41 bu.	1.49 T.	116 bu.	18 bu.
101-150,	125	6.6	19 bu.	42 bu.	1.53 T.	108 bu.	16 bu.
151-200,	173	5.8	19 bu.	47 bu.	1.39 T.	111 bu.	17 bu.
Over 200,	300	5.9	19 bu.	43 bu.	1.45 T.	116 bu.	15 bu.

Many editors are afraid that the larger farms will result in a laboring class with a few lordly overseers. If such persons will stop from their editorials long enough to look at the facts they will find no cause for alarm. On the 200 and 300-acre farms the owner works with the men. The men are usually his own sons or sons of neighbors who are working out to get a start. Later they will be tenants, then owners. On the small farms the boys usually leave home because there is not profitable employment for them. The two and three-man farm is still the typical "family farm." With the scythe and grain cradle the sons could be kept at home and profitably employed on 100 acres. But with the mowing machine and grain binder more area is needed for a family. There is no danger to society from a farm that is large enough to provide work for one or two sons. Certainly this will not encourage families that are too large for public good.

TABLE 12.—RELATION OF SIZE OF FARM TO BOYS LEAVING HOME.

Size of farm.	Total number in family.	Average number in family on farm.	Average number in family not on farm.	Per cent. of total family above two who have left farm.
30 acres or less, ..	3.92	2.56	1.36	71
31- 50,	4.13	3.03	1.10	52
51-100,	4.36	3.74	.62	26
101-150,	4.34	3.92	.42	18
151-200,	4.81	4.18	.63	22
Over 200,	4.80	4.29	.51	18

RELATION OF CROP YIELDS TO PROFITS.

Table 12 from Jefferson county shows that the problem of the boy leaving the farm is largely solved if the farm is large enough to profitably employ him at home. The per cent. of the members of the family above two who have left home falls from 71 per cent. on the small farms to 18 per cent. on the largest farms.

TABLE 13.—RELATION OF CROP YIELDS TO LABOR INCOME.

574 Farms, Livingston County.

Percentage Yield.	Average Percentage.	No. of Farms.	Labor Income.
75 or less,	67	58	\$165
76- 85,	81	60	219
86- 95,	90	102	663
96-105,	101	116	570
106-115,	110	103	878
116-125,	120	66	951
Over 125,	138	69	1,090

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Table 13 shows that the better crop yields results in larger profits. Yet the best are not the fabulous yields that we hear about. The most successful farms usually get 10 to 25 per cent. better crops than their neighbors—not 100 per cent. better, as is often recommended. It is doubtful if it pays to try to get the largest possible crop. We do not have the climatic factors under control. These usually limit the crop. It pays to do our part for good crops, not for maximum crops; the season risk is too great for that.

TABLE 14.—RECEIPTS PER COW RELATED TO PROFITS, TOMPKINS COUNTY.

<i>Receipts per Cow.</i>	<i>No. Farms.</i>	<i>Labor Income.</i>
\$30 or less,	18	\$30
31-\$50,	97	316
51- 75,	106	483
76-100,	53	715
Over 100,	33	1,325

Table 14 shows the relation of receipts per cow to profits. There is much more variation in animal production than in crops. The better farmers get 50 to 100 per cent. more than the average. With animals nearly all factors are under control, so that it pays to make the conditions right for at least 50 per cent. better production than the average.

DIVERSIFIED FARMING AND PROFITS.

TABLE 15.—DIVERSITY RELATED TO LABOR INCOME.

605 Farms, Tompkins County.

<i>Receipts from Crops for \$1 from Stock.</i>	<i>Per Cent. of Receipts from Crops.</i>	<i>No. of Farms.</i>	<i>Labor Income.</i>
No crops sold,	0	29	\$113
\$0.10 or less,	4	46	348
0.11-\$0.20,	13	56	338
0.21- 0.50,	25	144	452
0.51- 1.00,	41	140	429
1.01- 2.00,	58	102	440
Over \$2.00,	79	88	465

Table 15 shows that in Tompkins county the farmers who did not derive at least 20 per cent. of their money from the sale of cash crops were not doing very well. Not only were the averages poor, but the number of individuals who were doing well was much less than on the farms that combined cash crops with stock, as shown by Table 16.

TABLE 16.—DIVERSITY RELATED TO LABOR INCOMES, TOMPKINS COUNTY.

<i>Per Cent. of Receipts From Crops.</i>	<i>No. of Farms.</i>	<i>Per Cent. of Farmers Making Labor Incomes of Over \$600.</i>
0,	29	0
4,	46	17
13,	56	14
25,	144	22
41,	140	27
58,	102	24
79,	88	37

TABLE 17.—DIVERSITY RELATED TO LABOR INCOME.

578 Farms, Livingston County.

<i>Per Cent. of Receipts From Crops.</i>	<i>No. of Farms.</i>	<i>Labor Income.</i>
20 or less,	47	\$597
21-40,	61	866
41-60,	112	658
61-70,	99	674
71-80,	109	700
81-90,	97	670
Over 90,	53	414

Table 17 shows the same facts for Livingston county. The highest profits were made by combining cash crops with stock and stock products. Neither the straight stock farm or the crop farm pay as well as a well-balanced combination of the two.

The chief reason for this is that the combination allows for the better use of men, horses and machinery. The dairyman who has help enough to milk can, with the same help, raise the feed and with little or no additional expense can raise some cash crops for sale, such as potatoes, hay, cabbage, apples or some other desirable crop for the region.

We hear much of the profits from apple farms, but nearly all of the profitable apple farms have other crops, so that the apples are not usually half the products grown. One of our noted applegrowers in New York receives nearly as much for cabbage as for apples. He raises all his hay, oats, corn and frequently sells some. He also sells wheat, beans, lambs and hogs.

One of our most noted muck farms grows spinach, lettuce, celery, etc., and, in addition, runs a 100-acre farm with alfalfa, wheat, oats, hay. This additional area is run with almost no extra cost. These cases are typical of nearly all of our most profitable farms. It is only by such combinations that the time can be fully and profitably employed.

One very profitable farm sells retail milk and pure-bred cattle. In this case the same principle holds. The retail business takes the place of cash crops in keeping the men and teams busy.

On another successful dairy farm the second business is keeping things clean. It is a certified milk farm. This is one of the few certified milk farms that pays. The owner does not have such extravagant buildings as to make this impossible.

Nearly every successful farm has two to four specialties. The general farm has sometimes been in disrepute as the farm that has a little of everything and little of anything. Such a farm may contrast unfavorably with the farm that has one specialty. But there is a third class of farms that are far ahead of either of these extremes. The most profitable farms nearly always have two to four important products to sell and more or less minor products.

CONCLUSIONS.

In order to make the most of his time and of the time of horses and machinery, it is usually necessary for the farmer to have from two to four specialties rather than one. Again, in order to keep himself and equipment busy, he needs a larger farm than was needed before machinery was so generally used.

The two most important factors in limiting profits seem to be size of business and diversity of business. The third important factor is yield per acre of crops and production of animals. Average crops usually pay. The most profitable farms usually get 10-20 per cent. better crop yields than their

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neighbors. Average animals result in a positive loss, but animals are under control—they are not so much subject to the weather. The most successful farmers usually get 50 to 100 per cent. better production from their animals than the average of their neighbors.

Vice-President Cox—If there is no objection, the Board will now stand adjourned until 9:30 o'clock to-morrow morning.

 SECOND DAY—FOURTH SESSION.

The meeting was called to order by President Frelinghuysen.

Mr. Purzner—Mr. President and members of the New Jersey State Board of Agriculture: Your Nominating Committee present to you the following officers for the coming year:

For President—Joseph S. Frelinghuysen.

For Vice-President—John T. Cox.

For Treasurer—A. J. Rider.

Executive Committee—George E. DeCamp, Roseland; Theodore Brown, Swedesboro; J. Harvey Darnell, Masonville.

We also recommend the appointment of Prof. Charles S. Cathcart, of New Brunswick, as Chemist of the Board.

During the reading of the report, President Frelinghuysen surrendered the chair to Secretary Dye.

Secretary Dye—Gentlemen, you have heard the report of the committee, what is your pleasure?

A Delegate—I move that the nominations presented by the committee be accepted and the gentlemen elected.

This motion was duly seconded, and when put by Secretary Dye, was unanimously carried.

Secretary Dye—The officers nominated by the committee in their report are accordingly elected for the terms specified.

Mr. Denise—Mr. Chairman, I do not understand that that elects them. They simply have put the report in the hands of the Board. I move that they be elected.

A Delegate—That was my motion.

Mr. Denise—Well, it did not seem to me it said to elect them; that simply brings the matter before the meeting, and we like to go a little farther than that. If that was the motion, all right.

Secretary Dye—All in favor of electing those officers will please say "Aye."

The motion was unanimously carried.

President Frelinghuysen was then escorted to the chair.

President Frelinghuysen—Gentlemen, and members of the Board: Having been elected President for another year, I want to thank you for this great honor. I appreciate it deeply. I shall try to give my services faithfully to the cause of agriculture and for the work of your Board. I thank you. (Applause.)

President Frelinghuysen—The next business before this meeting is new business. Is there any new business? Are there any resolutions, or reports of committees? If not, the next order on the program will be the report of the Commission on Tuberculosis in Animals, by the Secretary.

Report of the Commission on Tuberculosis Among Animals.

BY FRANKLIN DYE, SECRETARY.

As is generally known, a new law (Chap. 202, Laws of 1911) concerning tuberculosis among cattle, regulating the importation of cattle into this State, providing measures to check the spread of tuberculosis among cattle in this State, creating the Commission on Tuberculosis Among Animals, prescribing its powers and duties and fixing penalties for its violation, was enacted by the Legislature of 1911. Said act had the approval of the Governor April 24th, 1911, and was enforceable July 4th, but owing to various delays in securing the proper officers, the law was not enforced before August 10th, 1911, consequently the secretary, with his only assistant, Mr. S. B. Ketcham, worked along as best they could with the limited means at their disposal, and no additional assistance. When the new law was passed many gloomy prophecies were made concerning it—it was unworkable, importation of cattle would cease, owing to its drastic requirements, etc., etc., but all the adverse prophecies have been disproved, as the figures herewith show. Never before since the original importation law was passed in 1899 has there been so many cattle brought from other States into this.

The law provides for a chief inspector and six district inspectors as the Commission may consider necessary. The chief inspector and four district inspectors have been appointed. Under the vigorous administration of Chief Inspector, Mr. Charles McNabb, with his four assistants, all of whom are clothed with constabulary powers, a degree of surveillance was established and is maintained throughout the entire State, that was not possible under the old law. As a consequence, importers of cattle who had been evading the law in the matter of testing with tuberculin all animals imported, and all veterinarians in collusion with them in such infamous business, are being exposed. Veterinarians who were not found to be reliable have been dropped

TUBERCULOSIS AMONG ANIMALS.

from the service of the State, and importers of cattle who were found to be dishonest are compelled to conform to the law or cease business. The Legislature has given the Commission a law and entrusted them with its enforcement. This the Commission proposes to do without fear or favor, and we bespeak the co-operation of all dairymen in the hope that we may soon be able to prevent absolutely the incoming of tubercular cattle from other States into New Jersey, and also the continuous cleansing of home herds, until they shall be free of disease and our milk supply above reasonable suspicion.

The old Commission were criticised for not preventing the importation of diseased cattle and for lack of efficiency in numerous particulars, while the fact was apparent that it was utterly impossible under the old law for two men, with the limited appropriation at their disposal, to cover the entire State. Nevertheless they did a great deal in showing the farmers and dairymen the danger to their herds from tuberculosis, the importance of cleansing them from all suspicious animals and in improving their stables by increasing the light, affording needed ventilation, etc. They were pioneers in this work. When the law was revised several of the members of the old commission were retained, and they were armed with the proper authority to administer the new law. That inspection could be established, the Commission districted the State, and now believe that there are very few inshipped cattle that are not policed. By reason of this plan the Commission have now established a proper protection to the farmers of the State. But there is one loop hole, that is to prevent the evasion and the dishonesty of certain veterinarians of this and other States.

The Commission, individually and as a body, are grieved to report so soon after their organization the death of one of their members, Ex-Senator William C. Parry, M. D. Dr. Parry was an active member of the Commission; he interested himself in its work of purifying the dairy herds of this State and preventing the introduction of tubercular animals from other States, thus thereby guarding consumers of milk from the possible contraction of tuberculosis from milk of tubercular cows. His work is done. We have lost an efficient helper, and the State a valuable citizen.

Occurring soon after the death of Dr. Parry, one of the district inspectors, Samuel B. Ketcham, appointed under the new law, and who was for years the assistant of Secretary Dye in this work, was called away. Mr. Ketcham was a man of sterling integrity, upright in all his dealings, a man whom no temptation could swerve from what he believed to be right. He was faithful in the discharge of his duties.

May the example of those two men stimulate us all to renewed faithfulness.

Number of Imported Cattle tested *before* entering the State under the new law taking effect August 10th, 1911:

August 10 to September 10,	665
September 10 to October 15,	1,040
October 15 to November 15,	1,148
November 15 to December 15,	893
Total,	<u>3,746</u>

Number of Imported Cattle tested *after* entering the State:

August 10 to September 10,	600
September 10 to October 15,	998
October 15 to November 15,	699
November 15 to December 15,	768
Total,	<u>3,065</u>

STATE BOARD OF AGRICULTURE.

Number of Imported Reacting Cows slaughtered:

August 10 to September 10,	30
September 10 to October 15,	59
October 15 to November 15,	46
November 15 to December 15,	45
Total,	<u>180</u>

NOTE.—The new law has been so rigidly enforced in this State that 102 cows have been condemned and slaughtered in the States of New York and Pennsylvania on tuberculin test prior to shipment, after being bought by New Jersey buyers. Adding this to the 174 slaughtered on tuberculin test in this State gives us 276 dairy animals kept from polluting our dairies with tuberculosis.

Appraisements of Native Cattle slaughtered:

	<i>No. of Cows.</i>	<i>Appraisement.</i>
August 10 to September 10,	20	\$659 00
September 10 to October 15,	93	3,161 00
October 15 to November 15,	71	2,442 00
November 15 to December 15,	60	1,831 00
Total,	<u>244</u>	<u>\$8,093 00</u>

Amount received for Meat and Hides sold under Inspection—Money paid into State Treasury:

August 10 to September 10,	\$352 00
September 10 to October 15,	458 00
October 15 to November 15,	378 00
November 15 to December 15,	210 00
Total,	<u>\$1,398 00</u>

Amount received from Shippers of Imported Cattle for testing—Money paid into State Treasury:

September 15 to October 15,	\$345 00
October 15 to November 15,	523 00
November 15 to December 15,	427 00

Total, 1,295 00

Total amount paid into State Treasury, \$2,693 00

REPORT OF TUBERCULOSIS COMMISSION UNDER OLD LAW FROM JANUARY 1ST, 1911, TO AUGUST 10TH, 1911.

Number of Imported Cattle tested, 7,247

Number of Native Cattle appraised and slaughtered:

<i>Month.</i>	<i>No. of Cows.</i>	<i>Appraisement.</i>
January,	51	\$1,784 00
February,	47	1,614 00
March,	45	1,372 00
April,	21	721 00
May,	35	1,206 00
June,	29	898 00
July,	28	1,020 00
August,	35	1,162 00
Total,	<u>291</u>	<u>\$9,777 00</u>

BOARD OF HEALTH ON ANIMAL DISEASES. III

EXPENSES OF COMMISSION.

November 1st to October 31st, 1911.

Amount of appropriation,	\$20,000 00
Amount paid for salaries,	\$4,527 10
Amount paid veterinarians,	1,595 14
Amount paid for cows condemned,	12,044 25
Amount paid for tuberculin,	506 25
Amount paid for traveling expenses of Inspectors,	437 34
Amount paid for telegraph,	20 72
Amount paid for telephone,	4 90
Amount paid for postage,	62 48
Amount paid for express,	15 17
Amount paid for newspaper subscriptions,	8 50
Amount paid for printing blanks, etc.,	96 40
Amount paid for tags,	100 00
Amount paid for stationery,	49 55
Amount paid for sundries, office supplies, etc.,	122 57
Amount expended for the year,	19,590 37
Balance,	\$409 63

Report of State Board of Health on Various Animal Diseases.

BY BRUCE S. KEATOR, SECRETARY.

The following is a brief outline of the action which has been taken by the Board of Health of the State of New Jersey, relative to cases which have been reported to the Board during the year ending October 31st, 1911. Only seven cases of tuberculosis in cattle were reported to the Board during the year, and in every instance the case was referred to the Tuberculosis Commission.

BLACKLEG.—This disease, which appeared for several years in Sussex county, is apparently under control. Three cases of the disease were reported during the year and prompt measures were adopted to limit its spread. Free vaccination of animals on infected meadows, or that had been otherwise exposed to the infection, was offered to owners. As this offer has been made from year to year, and many cattle owners have accepted the protective inoculation of their cattle, we believe that the disease is now under control, and if each year, before cattle are turned out on the meadows, the protective vaccination of the cattle is continued, no further cases should be reported.

COWPOX.—A herd of dairy cattle in Kearny, Hudson county, were affected with this disease. The disease was not recognized by the owner of the cattle, and when the attention of the local board of health was directed to the condition of the cattle, nearly all the affected animals were recovering. The condition of the udders and teats of the cows indicated clearly the nature of the disease, and the cows were quarantined. Twenty-three cows contracted the disease. The owner of the dairy decided to discontinue the dairy and purchase milk from other milkmen.

RABIES.—This disease has shown an increase during the year, and a total of seventeen cases have been reported. This, however, does not cover all cases which have occurred, as in the laboratory of hygiene of the Board out of the sixty-six specimens from animals, suspected of having rabies, which were examined during the year, forty were positive and twenty-six negative. The laboratory offers every facility for the examination of suspected ani-

mals, and the State Board of Health has an arrangement with the health authorities in New York city by which persons bitten by dogs suspected of having rabies may, upon application through the local board of health or the attending physician, receive the Pasteur treatment at an expense of twenty-five dollars. With the apparent tendency of the disease to spread throughout the State, more stringent and effective laws should be enacted. We believe the law in operation in New York State, which gives full power to the State Bureau of Animal Industry to deal with the disease, is an improvement on the law of our State, in which the responsibility is divided between local governing bodies and local boards of health.

GLANDERS.—The major portion of cases of glanders which are reported each year occur in Essex and Hudson counties. The nearness of these counties to New York and Brooklyn, the large number of horses which pass between these points, and the fact that the disease constantly exists, leads to many exposures to the infection. Every effort has been made to discover and condemn all animals having glanders in these counties, but until provision is made for a constant inspection of all horses crossing the ferries between New York and Jersey, the disease will continue to be a cause of financial loss to horse owners. The total number of cases reported during the year was 105, and the distribution of the cases was as follows: Bergen county, 2 cases; Essex county, 65 cases; Hudson county, 22 cases; Mercer county, 2 cases; Middlesex county, 5 cases; Monmouth county, 2 cases; Morris county, 1 case; Passaic county, 3 cases; Somerset county, 1 case; Sussex county, 1 case, and Union county, 2 cases.

Several cases of hog cholera were reported in Salem county, and a veterinarian, representing the State Board of Health, met with the farmers in that section, directing them as to the use of protective serum for the protection of well animals and as to proper isolation of sick animals. Cases of mange were reported in Essex, Morris and Sussex counties, the total number of cases being fourteen. Of this number ten cases occurred in Sussex county. The action of the Board in dealing with this disease consisted in the instruction of owners as to the proper treatment of diseased animals, and in directing local boards of health to require the isolation of infected animals and the disinfection of infected premises. A review of the cases of contagious diseases of animals occurring in our State during the past year shows that intelligent supervision of these cases, coupled with a desire on the part of animal owners to adopt preventive measures, is resulting in lessening the total number of cases.

The report of the Tuberculosis Commission was accepted and became a part of the report.

A Delegate—Wouldn't it be in order to devote just a few minutes to a consideration of this subject?

President Frelinghuysen—As you please. The question of the report of the Commission is before you, a request having been made by a delegate that it be put before the meeting for discussion.

Mr. McCracken—Mr. President, I want to take a moment or two here, if it is your pleasure.

I have learned to believe that there is perhaps nothing that makes so deep an impression upon men's minds as personal ex-

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perience, and that is particularly true when it affects a man's pocket-book.

I had a little experience with your Board in connection with the dairy business during the time mentioned by the Secretary, and it became my duty to go into another State for a lot of cows. About the first of November I left home with the understanding that I would bring a lot of outside cows from the State of New York. When arriving in the neighborhood in which I meant to buy them, I learned several things concerning the testing of dairy cows there, and the results of those tests, which were not entirely satisfactory to me. For instance, in the community where I was I learned of one experience where a man had come in there some few months before and bought a lot of cows, and a veterinarian was there for the purpose of testing them. The buyer went to the veterinarian and said, "See here, I have not the time to monkey around here for twenty-four, thirty-six or forty-eight hours; here is the amount of your fees; I want to go with my cows." He passed him over the tags and the cows were shipped.

At the same time, about the same day, a lot of cows were being driven across the bridge at Marathon, thirty miles down on the Syracuse Division, for the purpose of being shipped to another dealer, with the same understanding with the veterinarian at that place. Then a messenger from there communicated with the department, and they went back. Consequently there was only one veterinarian dismissed from the service.

That shook my confidence in that country. When I went out into the locality to look over the cows, I found the cows would answer the purpose, but I found that the farmers who had those cows for sale were so disgusted with tuberculosis and the testing business, that they would not permit the cows to be tested at all. "I will sell you the cows just as they stand there in the stall. I have no faith in your testing."

The only thing that was left was to go to a dealer, and I went to some dealers and talked to them about their cows. There was no stint in the cows; they had plenty of cows for sale, and they looked to be all right, but, upon investigation I learned that

dealers' cows almost always passed inspection. I am not here to say whether there is some way of treating those cows to put them in such condition that they do not respond to the test, or whether it was an understanding with the veterinarian, or why it was; but, after two or three days' investigation of that sort, I came to the conclusion that I would not know when I got my cows home whether they were clean cows or whether they were not. Consequently, I telegraphed Brother Dye to bring my cows home and have them tested there. He immediately responded, and I loaded the cows and brought them down, where I knew they could be tested under the auspices of our own Board and by a veterinarian whom I knew to be honest and straight and right, and let the result be what it might be. At that time I knew that when they got through with them, whatever cows were left over, if any of them were left, would be all right.

The result was one of the cows that I brought down was slaughtered. Three of the cows that had stood at the head of my herd for more than two years in my own barn, also responded to the test, and were led out into the yard, and Dr. Lobline tried to find which was harder, my cows' skulls or the pole of a four-pound axe, and the axe won every time.

Now, I say, there is nothing makes an impression upon you so quickly and so effectively as something that costs you a little money, and when they had led out four seventy-five-dollar cows and knocked their brains out, I began to realize there was something doing.

Upon post-mortem investigation we found that the cows were infected. I took portions of the lungs of those animals with me to New Brunswick and they were examined by the Board, and some of the other organs were inspected there by a number of dairymen about the country, and they all were convinced that there is such a thing as diseased animals, and the result has been, as I notice it at this time, that quite a number of the dairymen in our locality who had always stood up as a stone wall against testing for tuberculous animals, are now arranging to have their herds tested. They have come to the conclusion that if this disease is infectious, if it is conveyed from one animal to another,

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where there are diseased animals in their barn it is only a matter of a short time until the entire herd will be infected, and they will be put out of business, so far as that lot of cattle is concerned. Consequently, they are taking the same course I did with my herd, take it as near in the beginning as possible and stop the disease, if possible, at this time rather than wait a year longer and stand a greater sacrifice.

This is only a statement of facts, but the point that I wanted to bring before this meeting in this connection is this, that there is no law upon the statutes of New Jersey or any other State, or any other place, that is of any effect unless it is backed by public opinion, and no law, nor the officers entrusted with the execution of that law, can do anything unless there is a public spirit back of it that says the law is right and gives it their support.

After that I had a number of reports concerning the slaughter of my cows. Some reports came to me that they had killed thirty-five or forty of my cattle. That was a ridiculous untruth. There were only thirty-six tested. But there were all kinds of reports circulated through the country that I was entirely unsatisfied, that the State Board has come up there and knocked their brains out without knowing very much about it. A number of those reports were circulated through the country, until I was moved to make a public statement concerning the facts in the case, and I did so through the New Brunswick papers, simply stating the facts as they were, and that was a different matter altogether, and it cleared the matter up in the minds of a great many people, and, as I say, the people are coming our way, and there is a movement which has been inaugurated and moving right along with a view to cleaner cows, more healthy cows and purer milk.

Now, what I would like to do, Mr. President, in this connection, is to have this Board see the situation as it is and stand up as a single man at the back of this Commission who are so ably and courageously executing the laws that we have for the preservation of the dairy interests of the State. We must have the people back of our Commission or the Commission and the

law will stand alone as a dead figure upon our statutes. (Applause.)

Mr. Crane—Mr. President, I am in sympathy with every intelligent effort to stamp out tuberculosis among our cattle, but I don't want to see our Commission in the wrong. There are some inconsistencies which exist now and have been particularly flagrant in the importation of cows into our State from New York and Pennsylvania. In fact, I know of one place, and I made a complaint of it, in Hudson county, that there was no security in buying there, with the tags in their ears. There was great danger. I bought some cattle there and I suffered the loss of some of them on account of tuberculosis. And I got our own veterinarian to come to my herd and examine one cow that I had bought, to make an effort to recover from the parties for selling me that cow, and the veterinarian would not examine her. He would not be used as a witness. A man that I had considerable confidence in, too, and he had done work for me, but the cow died in a few days afterwards, and I got the butcher to come and dress that cow and take her head off and we found tubercles in her lungs as big as the end of your thumb. And I made complaints of that place to this Board, but they could not do anything just then.

But there are some other things. Now, for instance, a man wants to get out of the business, and he has got tuberculosis in his herd and he makes a public vendue, and he sells those cows to his neighbors and they are scattered all through the neighborhood. And I want to know what our Commission is going to do in such a case, when they have such a thing as that up against them. They can work as hard as they are a mind to, and be as intelligent as they will, still there is that against them.

And another matter. I believe that every man who sells a cow to go into a herd of cattle should be responsible for the health of that cow. I believe the purchaser should have a right to go back and prosecute that man for selling him a diseased animal. Every cow that is sold to go into a dairy should have a certificate proving her to be a healthy animal.

Those things should be looked into, and I want to work in an intelligent way to stamp out this dreadful disease (Applause.)

President Frelinghuysen surrenders the chair to Vice-President Cox.

President Frelinghuysen—Mr. Chairman, as I stated yesterday in my address, when you elected me President of the State Board of Agriculture, I also became, by reason of another law on the statute books, President of the Commission on Tuberculosis in Cattle.

I did not know what trouble I was getting myself into, but I accepted the office as President of the State Board of Agriculture, through another law which made me President of this Commission.

I found the conditions somewhat confused. I, myself, am a dairyman. I own a large certified dairy, and I have kept cows for a great many years. Two years ago I started in to make this a model dairy. In view of the fact that I had passed in the Senate a certified milk law, which provided that certified milk commissions could be created throughout the State that could certify to dairies. Union county was in need of a certified dairy, and the doctor in Newark who was the promoter and has been the father of modified milk asked me if I would not make my dairy a certified one. I did not know what expense I was leading myself into or how much capital it would take, but I said, "Yes," and started in. If I had known, in the beginning, I hardly think I would have attempted it. But, I believe to-day that we have one of the best certified milk plants in the State, and it is going on. I lacked experience. I now have it. I have had a little experience. My bank account looks so, anyhow.

Now, at the time when I became President of this Commission, there was an agitation going on in the State. The State Board of Veterinarians had attacked the old Commission. They said that cattle were being tested by their agent in Newark, State tags were being put in their ears and those cattle a few months afterwards, with the State tags in their ears showed that they had tuberculosis.

The Evening News, a prominent newspaper of the city of Newark, took up the question and said that the authority of the State was not being maintained, and that cattle were coming in from all over the country into New Jersey, that New Jersey farmers

were being cheated by reason of the fact that the State was not properly protecting them, and that the rights of the farmers were not being protected and that the lives of the people of this State were being menaced.

Now, that was a pretty proposition for a new member who came to the head of this Commission. I went to Secretary Dye and I asked him, "What is the trouble?" He said "We have not sufficient money and we have not proper authority under the law." Nor sufficient help. The law was reframed. It was passed by the Legislature. Before the law was finally passed, Dr. Rogers, President of the State Board of Veterinarians, came to me with charges against a veterinarian in Newark who was employed by the State Commission of which I had recently become the head, stating that he had tested these cows and was fraudulently and carelessly testing cattle there and putting State tags in their ears saying they were clean of tuberculosis. I said, "Dr. Rogers, this Commission will enforce the law, and if any of its servants are negligently performing their duties, they will be suspended. We are here to enforce the law, and if there is not enough authority, we will get it from the Legislature." Dr. Rogers said, "We will back you up." I said, "Bring your charges against Dr. Vander Roest." That was the doctor employed by the Commission. They brought their charges, but, in the meantime, while they were discussing the subject they said that they would support this law, and we presented to them a draft. They agreed with it and agreed to support it. We passed it in the Senate, and a few days later we found that after agreeing to support the law, saying they would go downstairs in the Assembly and support it, we found that they had monkeyed with it and had amended it in such a way that the Governor would have to appoint the President of the State Board of Agriculture as the head of the Commission, and the other members, and that a veterinarian and a doctor should also go on.

Now, that is the way they supported the law. We were not down there, and the law passed. We refused to confirm those amendments in the Senate, and we sent it back to a conference committee and the law was reframed so that the President of the State Board of Agriculture remained the head of the Com-

mission, and that a veterinarian should not go on, but that a doctor should remain on.

That is the way we passed the law. We increased the appropriation from twenty thousand dollars to thirty-five thousand dollars, and then re-formed the Commission, or, at least, our plan of a chief inspector and four inspectors, because we realized that unless we policed with constables having absolute authority the shipping-in points of the State, that we could not stop the deceit of these outside dealers and the dealers in this State.

They came with their charges against Dr. Vander Roest, and I have in my hand a copy of the testimony. What made this especially important was that the doctor was the vice-president of the veterinarian association. They said that they would prove that these cattle, having been tested by Dr. Vander Roest, were tuberculous cattle. To make a long story short, the evidence heard by our Commission, which was informal—had to be, because we had no authority to swear witnesses—the evidence did not substantiate their charges. However, Dr. Vander Roest was suspended. Dr. Vander Roest stated to me upon questioning; the question was: “*Q.* Dr. Vander Roest, have you ever settled privately with dealers whose cattle you killed? *A.* Yes. *Q.* Why? *A.* To avoid notoriety. *Q.* Why? *A.* Because I could not as a professional man destroy cattle and have the dealer lose the money? *Q.* Why didn’t you come to the State and have the State defend you? You were slaughtering these cattle for the State? *A.* Well, I did not know about it.”

Now, the charges were not confirmed by the evidence.

We did not exonerate Dr. Vander Roest, nor did we reinstate him, but this is what we did: We said that no evidence had been presented that Dr. Vander Roest is incompetent as a veterinarian; that the charges of unreliable testing of two cows designated as the “Montclair Cow” and the “Kearny Cow” are not sustained by the evidence; that the evidence of the alleged detectives—men whom the State Board of Veterinarians had employed to catch their own vice-president—Herbert Lang and William Martin, seemed to the Commission to be wholly untrustworthy; that in consideration of these conclusions, the Commission revokes the

suspension of Dr. Vander Roest imposed on him April 19th, 1911.

We revoked the suspension and Dr. Vander Roest has never been employed by this Commission since.

Now, Dr. Vander Roest denied the charges made against him by the State Board of Veterinarians. To-day there is a letter in the hands of Secretary Dye of the Tuberculosis Commission in which he confesses to the State Board of Veterinarians as being guilty of the charges.

Now, gentlemen, I am simply doing my duty as head of this Commission, doing a public duty, without reward or without hope of reward. The question is: Shall this State protect itself? Shall it protect the dairymen and farmers who buy cattle against the diseased cattle of other States? That is the law, and we are trying to enforce it. If you don't want such a law, ask your Legislature to wipe it off the statute books. But, if you do want such a law, support the men who are administering it and stand for it. (Applause.)

Now, that is the question of imported cattle.

The question that the other gentleman has raised is a far different one (as to whether cattle out of the State shall be admitted, that is provided for in the law fully;) but the question as to whether cattle within the State, now the property of citizens of this State, shall be retested? Gentlemen, we have not faced that question yet, except in a cursory way. We are trying to induce the cattle dealers, the cattle owners, the farmers, the dairymen of this State to keep clean stables. We are trying to induce them to have this test made, but if you will go from one end of this State to the other to-day and test all the cattle of this State, New Jersey would almost have a milk famine.

Now, that is the proposition, and how on earth are you going to make any money, or keep cattle, when the price of milk is so low, and on the top of it you have got to bear the burden of having two or three hundred dollars worth of cows in your herd killed? That is the question, and it is a very important problem.

Now, we know that in advanced stages tuberculosis will be transmitted. We know that spinal meningitis and other dis-

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eases will come from tuberculous cattle, and we have got to meet the question sooner or later. The suggestion made by the gentleman over here, Mr. Crane, is a very good one, if you want it enacted into law; and I don't know but that it would be a very good law to have, providing that before a cow is sold or transferred to a dairy that it be tested. But that is not the law now. There is no law which compels the testing of home dealers, excepting upon application. When they come to the State Commission, the State Commission tests them and appraises them and pays them a proportion of some thirty or forty dollars for the cattle. Now, gentlemen, I want to say that that is the battle that we are fighting. We want your support as against the importation of outside cattle which have been unreliably tested by outside veterinarians.

The law is weak in this; it would be well to have a quarantine against outside cattle. We have not got that under the law. We have got to take the certificate of New York State and Pennsylvania, and, I, to my great loss, have found them incorrect, and, I venture to say, dishonest. If you want to properly protect yourselves against imported cattle, add to the law a restriction that every cow shipped in this State shall be quarantined for at least two months, or at least until the period of incubation is over, when the chances of their not reacting may be remote. And then, with Inspector McNabb, and the other men who are policing the State, you can be reasonably sure that no cattle will get by that test, because we have opened, how many, Mr. McNabb, how many post-mortems?

Mr. McNabb—Five hundred and ten.

President Frelinghuysen—About five hundred and ten post-mortems; and have you had a failure?

Mr. McNabb—No, sir.

President Frelinghuysen—No failure. Tuberculosis in five hundred and ten cattle since August 10th. Is not that test almost reliable? Pass your quarantine law, and then if any cattle get by that test, you will come pretty near finding out that they are sound.

Now, I realize how important this question is. I simply want to bring before you the work of this Commission.

We have many antagonists. Many of the dealers who have been able to ship cattle by many of the veterinarians who are antagonistic and unfriendly to this Commission are fighting it; but all we are attempting to do is our duty as public officials, to enforce the law upon the statute books, and if you do not want it enforced, change it.

I want to say a word for many of the honest cattle-dealers in the State, and there are many of them, and the dairymen who have supported us. They are citizens worthy to be citizens of New Jersey. But we also do want to condemn the practices of men who are defying the authority of the State and trying to defeat the righteous laws that have been enacted. (Applause.)

Secretary Dye—Mr. Chairman, it is refreshing to find a man who will take hold of this work as a citizen and declare himself co-operating with the State authorities, as Mr. McCracken has done. We are very much pleased, and if every farmer and every milk dealer and importer takes that same stand we will soon rid our State of this trouble.

I want to say to Brother McCracken that those difficulties which he has found in the other States are the difficulties which we are fighting now. We are trying to sift them out and to get the dishonest veterinarians and dishonest dealers out of the way.

Brother Crane, I think, refers to a proposed law for the testing of cattle in the herd at home before a vendue is made. Some twelve or fourteen years ago that was brought up in the State Board of Agriculture at that time. If you want a law to that effect to pass the Legislature, pass a resolution in that direction and I have no doubt it will be carefully considered. It is true that tuberculosis has been scattered through the State among many dealers by the sale of herds in those communities that were infected with tuberculosis.

A Delegate—I agree with the last remark of Secretary Dye in reference to the distribution of tuberculosis from home herds scattered around the State. We are getting more distribution

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from that source than from outside sources. I am glad the State is taking an active stand on that as well as the outside sources of infection, and if we can get an interest on the inside source and get some of the inside source eliminated, we will be doing a great work.

Mr. McCracken—Just a word regarding the law of New York State. I don't want people to get the impression that the State of New York, the great Empire State, is standing there for the purpose of imposing upon and in a manner murdering the dairy-men of New Jersey. The State laws in New York have been materially changed within the last year or so and are being vigorously enforced up there, brought about by the action that I recited awhile ago and others of a similar sort. There was a case up there where a veterinarian told me that he had tested cattle and condemned them and a complaint came back that the tagged cattle had proved tuberculous later on. On making a personal test of the matter he found it so. He followed up this one case and found that the cows he had tested and tagged were still in the barn, and where he had tested and tagged a cow that tag had been taken out of that cow's ear and put in another cow's ear and she was shipped into New Jersey.

Now, the State of New York declares that when a veterinarian there tests an animal and finds her tuberculous he has to burn a large T right on her shoulder, and when a man buys her, then he buys her with his eyes open, unless he is blind.

Mr. Gill—Mr. Chairman, I think this is a very important subject. I think there ought to be some more laws enacted to protect the cattle in this State, not only cattle from the outside, but the cattle from the inside. I think it would be well if the President would appoint a committee to suggest laws and endeavor to have them passed, endeavor to have laws enacted by which the cattle of this State can be tested and thereby tuberculosis can be in a large way eliminated.

The gentleman who spoke back there spoke of cattle sold in this State. I thoroughly agree with him. I know of an instance where there were probably forty or fifty cattle sold, and the man who sold those cattle knew they had tuberculosis. He

acknowledged it to me, and I wrote to Mr. Dye about it. His neighbors and friends got those cattle, and they caused a great deal of infection and a great deal of loss. We should protect ourselves against such source of infection.

To protect ourselves from cattle outside without a proper test is not protection at all. Cattle that come into this State and are tested immediately after they arrive, may already have been injected with tuberculin, and not react. The veterinarian may be an honest man and pass the cattle that come into this State, but they may fail to react simply because they had already been injected with tuberculin; and if we had a law requiring all animals coming to this State and tested to be quarantined five or six weeks until after the effects of the tuberculin passes off, and also that sales of cattle made in the State should be tested and treated as outside cattle are before the sale, I think it would help us.

I recommend such a committee as that.

Vice-President Cox—I would make the suggestion that a resolution along those lines be drafted and presented later. If that is done we can then get the sentiment of the State Board upon that question, and if it is desired the State Board President will undoubtedly appoint such a committee.

President Frelinghuysen—Mr. President, I move you that a committee be appointed by the Chair, a committee of three to consider this question and to recommend legislation along the lines of increased protection from home herds with some method of condemning cases that are tested and found to have tuberculosis and brand them; and also some regulation regarding the public sale of cattle. Also to consider the question of quarantining all in-shipped cattle for at least six weeks and injecting them with the proper amount of tuberculin.

This motion was duly seconded, and, on a vote, carried.

Vice-President Cox—The Chair, at its convenience, will appoint the committee.

President Frelinghuysen—We will now take up the address on "Tuberculin and Its Value in the Control of Tuberculosis,"

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to be presented by Dr. J. F. DeVine to this audience this morning.

Dr. DeVine—Mr. President and gentlemen. It is very pleasant indeed for me to hear the remarks that I have heard since sitting here, particularly Mr. McCracken's remarks, the man who has suffered a loss at the hands of the State law, to make an honest statement. We have had some experience in such matters in the past few years and I know how distorted statements are spread, and if the facts were known they would be quite different. Mr. McCracken has indeed done the State great justice and the public a great good in making the statement as he did. I regret that he has to refer to the dishonest veterinarian in New York State. I would ask him if he would be good enough to give me that name or such information, privately or publicly, as would lead to the finding of that man, and I promise him that there will be results coming from such information.

President Frelinghuysen—Will you take other names, too, sir?

Dr. DeVine—I will gladly; yes, sir.

President Frelinghuysen—I will present you with two or three.

Dr. De Vine—Thank you.

Mr. McCracken—I will give you the name of that man and may be of some others.

Mr. Van Alstyne—Dr. De Vine is our consulting veterinarian in our State Department, and he speaks with authority.

Mr. McCracken—He is just the man we want to get hold of.

Dr. DeVine—I am not at all questioning Mr. McCracken, but you know, as I know, we must have facts if we are going to proceed. I know we have dishonest veterinarians in New York as well as elsewhere. I have assisted in enforcing the State law that has deprived two of them of the right to practice within our borders.

Mr. McCracken—The man I refer to has been suspended, I suppose by yourself. He was in the neighborhood of Cortlandt, New York. He was suspended immediately after that time.

Dr. DeVine—I am glad to know it. It is unfortunate, though, that you seem to have here a feeling between the veterinarians and the agriculturists. Gentlemen, they are one body. You cannot thrive without co-operation between the two. Without the assistance of the veterinarians in our department, and without the aid of the veterinarians all through the State, we would make but little progress with tuberculosis, or other animal diseases; I know that from experience, and surely you must have some honest veterinarians in this State, and some capable men, and I hope that you and they get together and that you continue to do the very thing that you have been doing in suspending dishonorable ones. That is the kind of work that will make the good men feel better about it.

It is unfortunate that the time is so limited. There are a lot of things I would like to say, seconding what your President has said, and this question of tuberculin. Now to say anything about tuberculin, without going into tuberculosis, would be unfair to you and unfair to me. You cannot apply knowledge concerning tuberculin before you have knowledge of the nature and characteristics of tuberculosis.

Tuberculin cannot be put to its best use in the hands of a layman. I don't care what your principles are here, or what your teachings are here, or what your rules are here, a man without the knowledge of the method of making the product, a man without a knowledge of anatomy and physiology, and of pathology, cannot make an accurate and reliable tuberculin test. It is not a mechanical procedure, of injecting the tuberculin and taking the temperatures. A man without knowledge of tuberculosis is not capable of making a test with tuberculin.

So much attention has been given of late to the control and suppression of tuberculosis or consumption, both in the human and bovine families, that an opinion that it is a disease of recent origin seems to have gained a widespread credence. This, however, is erroneous.

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Lamentable as it may be, nevertheless it is true that these various erroneous opinions are largely due to the lack of knowledge and truths involved. Just so long as the general public remains in ignorance of the true facts concerning this or any other disease that is receiving popular attention, just so long the opinions and expressions will be oscillating and ridiculous, and just so long the human mind will be ready to sway from one opinion to another as the result of conversation listened to while sitting on the cracker-box in the corner grocery or reading fiction in stock journals where the writer's thirst for laudation leads him to write anything that will please the galleries; merit and scientific facts being but secondary consideration. It is still more unfortunate that many of such writers could not inform the public honestly and intelligently even if they so desired, since they cannot teach what they do not know.

This subject is such a vast one, that even with my meagre knowledge of it, it would take hours to cover it with any degree of satisfaction to the audience and myself. However, I shall attempt to outline some of the facts that are known about tuberculosis, making no claim that we know all about it, far from it, but if we make use of the knowledge that we now have, we know it is possible to lessen it in the human family and to eradicate it entirely from individual herds of bovine animals. If it is possible to eradicate it from individual herds, why not from communities and eventually from the entire country?

Medical records indicate that tuberculosis is one of the oldest diseases recognized as affecting cattle, and that before the Christian era the flesh of cattle affected with this disease was looked upon as unfit for human consumption.

The history of tuberculosis, and the variance in opinions as to its contagiousness, and later as to its transmissibility to mankind is very interesting. As early as the fourteenth century the flesh of tuberculous animals was excluded from the human food alike by the civil and the ecclesiastical laws of some parts of Europe. In 1702, Florinus described the disease and agreed with other authorities as to its being identical with syphillis. This brought about the destruction of all animals believed to

be suffering with tuberculosis, the doctrine of which was held until the fallacy of it was proved about 1782. Opinions as to its contagiousness continued to vary until 1865, when Villemin showed that tuberculosis was due to a specific virus. He produced the disease in rabbits by inoculating them with tuberculosis material from human subjects. Later he showed that the disease could also be transmitted by feeding or inhaling tuberculosis material. These experiments proved the transmissibility of the disease from one species to another, and was followed by the discovery of Koch, in 1882, of a specific bacterium. This led to the view that tuberculosis of all species of mammals was identical, which brought about renewed interest in the suppression and control of bovine tuberculosis largely as a necessary safeguard to health and life. This movement, which was noticeably begun during the latter part of the last century, received quite vigorous support and rather widespread attention until the announcement of the late Professor Koch, at the Tuberculosis Congress in London, in July, 1901, where he gave as his opinion that owing to the differences in virulence and culture of the two types, that is human and bovine (a fact that had first been observed by Dr. Theobald Smith in 1896), great danger of transmissibility was highly improbable. Further inquiry into this important phase of the subject seemed to give evidence that would warrant conclusions at decided variance with the opinion of this great man. In recent report of the Research Laboratory of the Department of Health of the City of New York, Dr. Wm. H. Park gives results of the study of some five hundred cases of human tuberculosis that have been examined during the past three years to determine the nature of the infection, which would tend to prove that about ten per cent. of all fatal cases of tuberculosis in infancy is due to bovine infection. Dr. Park further states that in those using cows' milk which had not been pasteurized there was a larger percentage, and adds that they found that about twenty-five per cent. of glandular tuberculosis in children is due to bovine infection, but in adults examined the percentage of bovine infection was very small. In the final report of the

British Royal Commission we find the following: "that in the examination of the sputum of twenty-eight cases of pulmonary tuberculosis in young adults, two were positively bovine infection." The commission further reports the examination of twenty-nine cases of primary abdominal tuberculosis—of these fourteen showed bovine infection; thirteen human, and two a mixed infection of human and bovine bacteria. The ages of the subjects showing bovine infection were from one to eight years.

Tuberculosis is a specific disease caused by the tuberculosis bacterium first described by Dr. Robert Koch, of Germany, in 1882. If we control this organism, therefore, we control the disease to which it gives rise—an instance of the value of a knowledge of bacteriology and disinfectants, the importance of which so many people fail to realize.

Tuberculosis is a communicable disease which differs from many of the ordinary specific and communicable diseases in being slow and insidious in its development, oftentimes making an early diagnosis impossible without the aid of laboratory agents.

The indefinite period of incubation is a serious handicap also in the control of the disease. By the period of incubation, we mean the time which lapses between the exposure to a disease and the first recognizable symptoms of that disease. In most communicable diseases there is a definite period of incubation which is not true in tuberculosis so far as our present knowledge goes, this period being greatly influenced by various conditions. Among the most important which might be mentioned are the following:

- (a) The number of germs to which the individual is exposed;
- (b) The virulency of such germs;
- (c) The amount of the resistance of the one exposed; also the location of the germs in one system would be apt to influence the progress of the disease.

Knowing that some animals have greater resistance than others, it is quite plain that in a poorly-lighted, badly-ventilated stable in which the germs of tuberculosis are present, there is

greater danger of infection than in a building where little or no tuberculosis is present and where the conditions are sanitary.

Most specific diseases run a definite course and if the afflicted one recovers and the disease leaves no sequel, the individual is apt to regain normal health and be as well as they were prior to the illness, some diseases even leaving limited or permanent immunity. This is not so with tuberculosis; when infection is once established, the germs do not locate in one spot, causing illness by the toxins which they secrete as they do, for example, in diphtheria. Being parasitic in nature, they live upon the tissues of their host, and if not checked or arrested they eventually destroy as they divide and subdivide into many more.

Tuberculosis again differs from other communicable diseases in that its arresting or so-called cure is very uncertain and insecure. The temporary arresting or healing of the lesions caused by the organisms, is a condition that is equally serious in the control of bovine tuberculosis, as the varying period of incubation and indefinite course of the disease. This I shall attempt to explain in pointing out the limitations of tuberculin.

The tuberculosis bacteria may remain in a dormant or semi-dormant condition for an indefinite period, or the diseased parts may become healed, as it is termed, which consists in the diseased area becoming encapsulated by lime salt deposits or bands of fibrous tissue. This arresting condition denotes the resistance of the tissues over the disease, and so long as this is maintained, the disease will not make further progress. But should the system become weakened in any way, and these barriers broken down, the disease may light up anew and make rapid progress, often causing death by what is termed hasty consumption.

We are still in doubt as to the length of time the germ may lie dormant in an infected area without causing the disease to progress and without dying, but on this point we hope to gain more knowledge. We do know, however, that it is possible for a cow to become infected as a calf from exposure in an infected herd or from drinking milk which contains tuberculosis bacteria, and still show no evidence of the disease until reaching maturity, when the strain of production and reproduction lessens the re-

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sisting force and allows the disease to make progress. This is particularly true in herds which are kept in close quarters and heavily fed for the purpose of extreme milk production. In such a herd it is not uncommon to find the choicest animal, which has exhibited not the slightest symptoms of tuberculosis, stricken with the disease should she become affected with some other slight ailment. The post-mortem examination reveals the fact that while we have been treating the animal for some other malady, her vitality has been undermined by tuberculosis.

It is, I believe, generally conceded that the susceptibility of bovines to tuberculosis is almost alarming and that in order to ever rid our dairy herds of this scourge, it is imperative that we guard against the quartering of the healthy with the diseased and against the possibility of any infected matter being taken into the digestive tract. The feeding to calves of unpasteurized skim milk from creameries accepting milk from miscellaneous herds is one of the curses of our dairy industry.

Having this information concerning the nature and character of the disease, the next things of interest to us are:

- (a) The modes of infection;
- (b) How the disease may be diagnosed;
- (c) The methods of control and the suppression.

While there are several possible ways of infection, particularly when the disease is so prevalent, still by far the most common are:

- (a) By the inhalation of air contaminated with the tuberculosis organism, and
- (b) By the ingestion of material similarly infected.

The danger, therefore, of putting a healthy animal in an infected stable or bringing a diseased animal into a healthy herd is at once apparent. The feeding of young animals milk containing tuberculosis bacteria is one of the surest methods of infection.

Diagnosis: The two methods used with most satisfaction today for determining the presence of tuberculosis are the physical examination and the tuberculin test. Unfortunately, physical examination alone cannot be relied upon in the majority of

cases, some cases presenting no clinical evidence whatsoever of the disease, others presenting symptoms which could only be decided by the assistance of laboratory methods or products.

THE TUBERCULIN TEST.

In order that we may understand more thoroughly what tuberculin is, it might be well to state that it is prepared by inoculating glycerinated bouillon with human or bovine tubercle bacteria, and then placing it in an incubator where a proper temperature (about 37 C.) is maintained. Here it remains until the growth ceases, which usually takes from four to ten weeks. After this it is twice heated and filtered, which effectually kills all germs and renders the substance absolutely sterile. There is, therefore, no possibility of uncontaminated tuberculin, prepared at any recognized laboratory, producing tuberculosis. The question is sometimes asked, "Is tuberculin infallible?" It is not, nor is any agent which is the product of man's ingenuity. We do hold, however, that properly prepared tuberculin in the hands of a capable individual is one of the most accurate diagnostic agents known to man. The errors that occur in the use of tuberculin are mostly in cases that do not react. When there is a reaction, experience shows that there are very few errors. Among the conditions which may render the tuberculin test inaccurate are great irregularity in caring for the animals at the time of the test and exposure of extreme temperatures. To make a satisfactory test, therefore, unless animals are housed under the most favorable conditions, it is desirable to compare the morning temperature on the day when the tuberculin is injected, with the morning temperatures on the days after the injection. Young stock usually carry a higher temperature, which varies more than a matured animal. This is more noticeable in milk-fed animals or in animals unaccustomed to being handled. Advanced pregnancy will occasionally influence the temperature. Animals which are affected with what we term open clinical cases will sometimes fail to react, but such cases can usually be determined by physical examination. Again, animals in which

the disease is arrested, all lesions being encapsulated so that the tuberculin cannot reach the diseased tissue, will fail to react. This explains the necessity of repeated tests of a herd where tuberculosis has once existed, and it also explains why an animal may react at one test, but not to a subsequent one, and still break down and react later. Animals which are in the incubative stage of the disease may pass a very careful test and react some two or three months later when the disease is more firmly established. Accidents and other ailments are always to be considered, as well as the malicious administration of drugs or recent inoculation with tuberculin. The effectiveness of these, however, is overestimated, and a well-informed veterinarian can now cope successfully with such practices.

As the methods of control, those by Bang and Ostertag seem to be the most practical. While it is true that any method may need modification to suit conditions, still, in my judgment, any and all methods can be summed up under two headings—getting tuberculosis out of a herd, or rearing up a herd of young animals, and keeping tuberculosis out of this herd.

The extent of tuberculosis in a herd can only be ascertained with any degree of accuracy by the aid of tuberculin.

Eradicating tuberculosis from a herd that is extensively infected is next to impossible. In such herd it is best to treat all animals as diseased, and begin the rearing of a new herd by the rearing of calves carefully isolated from the infected herd, taking them as soon as they are dropped to uninfected quarters (fortunately nearly every animal is born free from tuberculosis, even though the parent is affected) and feeding them on pasteurized milk of the mothers or from nurse cows that have passed two or more satisfactory tuberculin tests. If upon tuberculin-testing a herd the per cent. of the infected is very small, it would then be advisable to either slaughter the reactors, or, if too valuable, as most thoroughbreds are, then adopt the Bang method, which consists in isolation of the diseased ones, repeated disinfection of the stables where the non-reacting ones are to be kept, a retest of the non-reacting herd every three to six months so long as any continue to react, and an annual retest for at least two or three years after a test when no reactors are found, to make

sure that all incubative and healed cases have been detected. It is, of course, understood that the offspring of the isolated reactors are to be reared in the non-reacting herd.

In conclusion, it might be well to remind you that as a destroyer of human life, tuberculosis is a monster that works by night, and as a menace in our dairies and herds a direct accounting would be appalling. Dr. Melvin, in his annual report, 1908, estimates that the United States pays an annual tribute to this scourge among its farm animals of more than \$23,000,000, and even though the work of your association brings your interest closer to the control of this awful disease among animals, still, friends, we should not be so inhuman as to forget that there is a human side to it. Do you know that tuberculosis exacts a toll from our United States of over 200,000 lives annually, and from the State of New Jersey of over 4,000 human lives in the same period?

Do you know, fathers and mothers, if you were to visit the various tuberculosis sanitariums spread over our land that there you would find daughters who are as dear to their parents as any of our children are to us, daughters with the bloom of youth gone from their cheeks to return no more. There you will find young men, who, had not this scourge overtaken them, they might have been the brightest and greatest men of our nation.

Friends, if I could read to you here an exact history of the suffering and misery caused by this great plague, I think that you would be forced to agree that a more mournful tragedy this earth has seldom known. I ask each of you to become interested and do your share in ridding our homes and our herds of this dreadful scourge.

Mr. McCracken—Is it true that in your State, or a portion of it, that the Borden people as a company are opposed to the tuberculin test?

Dr. DeVine—No, sir. I think not. There has been some controversy, I think, here in your own State, in Montclair, also on that question.

It is unfortunate that the public believe that the Borden people take the stand that they are opposed to the tuberculin test. That

is not so. The Borden people think that under the present conditions we have not reached the point where it would be practical to test all cattle in our State. I suppose they think the same of other States.

They think this for two reasons. One is we have not veterinarians enough in our State of the kind of men we would want to do the work. It would take about eighteen hundred veterinarians about three years to test them all and to retest them so as to do some actual good.

Now, one thing I would say, if it is permissible, and that is, any legislation you may enact, or any rules you may adopt, think well, and don't step too far. I think if we attempted in our State, or if you attempted in your State, at this time, to tuberculin-test everything in the State and slaughter the reactors, that you would do a harm that perhaps you would never recover from. You could not do it successfully and correctly follow it up, and unless it is done properly, you would find yourselves in ten years right back where you started from and a great amount of money spent.

What you want to do is to proceed cautiously and do it thoroughly.

Now, it is my understanding that this is the theory on which the Borden's are asking for a physical examination. And it has been construed to mean that they were opposed to the tuberculin test. It is not so. We have tested herds repeatedly, that they have taken milk from, but they believe they can help by repeated physical examinations to weed out, so to speak, the advanced cases of tuberculosis, and thereby lessen the spread, and that is the theory they are going on. It is true that if you take out most of the advanced cases it lessens the poisonous character of the milk, and in a measure it will lead to a betterment and cleaning-up in your dairy condition. But a physical examination will never rid your State of tuberculosis.

President Frelinghuysen—What is the position of your State in regard to the attitude of the Bordens as to the physical test as against the tuberculin test?

Dr. DeVine—Well, I will say this, Mr. President, that we have had a few controversies with the late Dr. Morris, who was

a man of sterling integrity and great ability, he was for some time past Borden's chief veterinarian. He and I have had some disagreements, both privately and openly, but always in good friendship. We feel that they are doing good work, and every time they destroy or remove a case of tuberculosis they are helping our cause and we favor their work. But we never agreed with them nor led them to believe that it was our opinion that they were getting rid of tuberculosis in herds to any great extent by physical examination, but we do agree that they are making their milk supply safer, and also doing good in weeding out the clinical cases.

Mr. Van Alstyne—Is it not a fact that the Bordens are glad to have their patrons' herds tested?

Dr. DeVine—Yes, I say we have repeatedly made tests of herds supplying Bordens, and I believe with satisfaction to the Borden people.

Mr. McNabb—I think you have in your State several thousand tags marked "detained"; what do you do with those? Especially in Buffalo, I see they are in the number twenty-six hundred now.

Dr. DeVine—There is some mistake. We don't have any such amount detained in Buffalo. Those are animals that are suspicious among the animals that come in at Buffalo; ones that do not pass a satisfactory test, and are held for retest.

Mr. McNabb—Here is a tag sent to me and I was very curious to know what it was for. It is marked "2756, detained."

Dr. DeVine—Yes, they may have had two or three thousand struck off, and are not using them in serial numbers. There is no such number of animals as that being detained at Buffalo.

Mr. McNabb—What do you do with them?

Dr. DeVine—When these cattle come in there, oftentimes, as you know, they come in at night. They are unloaded, and sometimes they are confused and disturbed, which may affect their temperature, particularly the animals that are in advanced pregnancy. Any of those animals running a high temperature or

an irregular temperature have those "Detained" tags put on and held for a test or retest, with a double dose of tuberculin. But we never have any such number as that. We perhaps have three or four or five or six a shipping day, and they probably have about two shipping days a week, perhaps making about twenty or twenty-five held per month. That is what those tags are for. Anything that is not satisfactory on the test we detain. Of course, if they are satisfactory on the test or retest, they are passed; if upon that test the temperature is still irregular or gives a positive reaction they are slaughtered and inspected.

Mr. McNabb—Do you retest all of your cows at Buffalo?

Dr. DeVine—No, we retest only those that do not give a positive reaction, but still do not pass a satisfactory test, ones we term suspicious; we also detain any animals which are not in a reasonably satisfactory physical condition to test. But it won't be any great number. There are perhaps fifteen or twenty or twenty-five a month.

President Frelinghuysen—In reference to a layman making a test, our law provides at the present time that our Commission shall employ only veterinarians, and we have been searching the lists to have veterinarians who were willing to sacrifice their business and serve the State for the salary which it pays, because the two services do not go together, and a man cannot hold the two positions and serve a cattle dealer and also the State at the same time. They are antagonistic. Now, the point that we make is this: That in the administering and execution of this law, the veterinarians should have no part, for the simple reason that if he is the witness presenting the evidence, he should not also be the judge and jury. I want to make that point clear to you. Because I was not making a general attack on all veterinarians, I was making an attack on those veterinarians who knowingly and wilfully have admitted that they have made tests and have certified that the cattle were sound and know them not to be so. And I say that a man who will send out diseased cattle, particularly after the testimony that we have had to-day, where he can presume or find tuberculosis and send them out to a herd

or an unsuspecting farmer, is no better than a murderer. That is the point I simply want to clear up.

Mr. McCracken—Dr. DeVine, I just want to sound this word of warning. I know that through the Borden districts of your State there is that physical-test business. It has been put up to me everywhere. In one case of cows I shipped from Marathon they had been tested by the Bordens and pronounced all right. But the point is this: The same thing is invading our State, and we have people right in our own community who feel that that test should be made, and we are going to have that to combat before long in the strongest way.

Now, your veterinarian at Frawley, New York, called my attention to one fact, while he was testing a herd at Preble; he said that the Borden man through his neighborhood was going through every month or three months and making these physical tests. And in one herd he had condemned seven splendid cows on a man, and because that man would not have those cows slaughtered or taken out he was prohibited from sending his milk to the Borden people. And this farmer came to the veterinarian, I don't recall his name, but he is located at Preble, and asked him what he should do, and he says, "Why you better kill them. You had better get along with their man, because there is no place else you can send your milk and you had better submit to the Borden people if you can." And at the same time there was another man came to him that was having trouble with his cows; he would not submit to the Borden test because he would not submit to the tuberculosis test nor to the Borden physical examination. But among the three of them they fixed up a scheme like this: He said to the one man: "You go over to the man who had the seven good cows condemned; you buy those cows and put them in your barn, and send the Bordens word that you are ready to submit to their proposition, and send the man up to test your cows," and he passed every cussed one of them. (Applause.)

Secretary Dye—One question more, before we take up the next subject, and that is whether the doctor considers the physical examination necessary with the tuberculin test, in advanced cases, especially?

Dr. DeVine—The two are absolutely inseparable in all cases; as I have said, in some advanced cases the small quantity of tuberculin injected does not bring on the reaction. But as a rule, I consider a proper tuberculin test almost infallible, and that is why I say that a layman is not capable of making it, and that it is the business of the veterinarian. The mistakes of the layman and the dishonesty of the dishonest veterinarian are the two things that have brought tuberculin into disrepute. Tuberculin should never be used by anybody but thoroughly trained men.

Mr. Gill—Would you undertake to give your certificate if you found a temperature of 103?

Dr. DeVine—It would depend somewhat upon the condition. If the cow was in an advanced stage of pregnancy it is not an uncommon thing to be carrying a temperature as high as that. I tested a herd last week of eleven head in a certified dairy, every one in an advanced stage of pregnancy; only one of them had a temperature at any time below 102, and they ran from two to three and a half all the time. Heifers, especially, and milk-fed young animals run very high sometimes.

Mr. Gill—At what rise of temperature would you condemn?

Dr. DeVine—Again there is no set rule. That must be determined largely by the conditions. It is true that if I saw a cow give in, eight or nine hours after injecting the tuberculin, a rise of four or five or six degrees in temperature and then went down, I would condemn her; but I might condemn a cow on a rise of two degrees; I have, many of them; perhaps as many as I have at a rise of three degrees. If the rise will give the characteristic rainbow, and there is no other reason for this slight but characteristic rise in temperature, I should condemn the animal.

And my experience has been the same as pointed out here, where tuberculin was properly applied; if you make a careful post-mortem, you will find it accurate in at least ninety-seven per cent., and I am not sure but it is one hundred per cent. correct where there is a characteristic reaction. Where tuberculin

errs it is the cases that do not react. In what we term the incubative cases, the healed cases and the so-called generalized cases, where we have extensive lesions.

In our methods of meat inspection we do not tear the carcass to pieces to find the minute lesions, as this would destroy the sale value of the carcass for food. It would be wasteful to do this in order to prove the presence of lesions, since in a case of this kind, under the laws allowing indemnity, the owner of the cattle would lose the extra per cent. that is allowed where no lesions are found, and the State would lose the value of the carcass.

Mr. McNabb—Dr. DeVine, in case of tuberculin testing animals, coming into the State, in such animals as react and show no lesions on post-mortem, would you advise the State paying for such animals?

Dr. DeVine—Yes, I should. It would be well for the State to either pay for these animals, or allow them to be sold under proper meat inspection of the State. I would favor in every case giving the loser all reasonable aid possible. But in taking this liberal view, however, your law or your rules should be carefully worded, so that an unscrupulous dealer could not take advantage of your department in raising a protest of no lesions, because the visible lesions were slight, or varied, as is sometimes the case.

A recess was taken until 2:30 P. M.

SECOND DAY—FOURTH SESSION.

The meeting reconvened at two-thirty, and the Chair asked Dr. DeVine to again open the discussion on the question of tuberculosis.

Dr. DeVine—There were several questions asked me in the lobby that I would liked to have had asked in public.

To repeat what I said at the beginning of my remarks this morning, I could only hope to cover a part of the subject in such

a short time, but I shall be glad to answer any questions that I can, and to open the discussion I will make further remarks concerning the limitation of tuberculin.

It seems that an opinion prevails among some men that if an animal which has been purchased outside the State reacts later to a test within the State, that there is sure to have been some fraudulency connected with it. Perhaps in the dealer "plugging" the cattle, as they term it, or in the veterinarian in making a careless or dishonest test.

Now, friends, let us understand this question as a whole. I told you this morning, or tried to tell you, that unless you understand it as a whole, you will be taking the other fellow's word for the comments and gossips that are going about.

Remember, that if you have tuberculosis to a great extent in your herd, that it is next to impossible to clean it out; in other words, if you have a herd in which fifty per cent. or more of the cattle react on the first test, for practical purposes you might just as well consider your entire herd diseased. You must not lose sight of the fact that while this test may be an apparently satisfactory one, we know from experience that where tuberculosis is revealed to the extent of fifty per cent. or more, that there is a great amount of contamination that is not revealed on the first test.

We admit that there are limitations to tuberculin. In those cases referred to as healed, incubative and generalized, and when you retest such a herd you may take out many more reactors, and perhaps some of these have recently succumbed to infection, or those recently infected ones may not react, and still later act as centers of infection.

The best way is if you go out to buy tuberculin-tested cattle, to go, if possible, to a herd that has been tested at least twice, and if it has been again retested it is still better. If you go to New York State or Pennsylvania and buy cattle from a dealer who has picked them up from various points, some of which perhaps are from extensively infected herds, some are sure to be in the incubative stage or the lesions may be temporarily healed, or they may have been recently tuberculed, all of which would make your tuberculin test unsatisfactory, even if conducted with great

care and honesty. You may get fine, big, producing cows, but, friends, you cannot buy tuberculosis-free cattle that way. It is absolutely impossible. If the cattle have been recently tested, and you have that information, you will then, of course, give a double dose and take the temperatures early and follow it for a longer period than ordinarily, and yet you may get some animals that are diseased irrespective of how careful or able your veterinarian may be. True it is that the percentage of diseased ones you would get under such conditions would be comparatively small, but we should not ignore the necessity of a retest in a few months to avoid any undetected case spreading the virus and infecting many others. It is the non-tuberculous herd or the herds in which there is very little tuberculosis that we must seek. You can clean out a tuberculous herd if you test and disinfect repeatedly and cautiously and carefully.

Another thing that seems to annoy some people is the fact that under the State inspection the cattle are condemned and slaughtered and then sold as beef. They say their cattle have been killed by the State and yet was found good enough to be sold as beef. Or course, it was. If every carcass that is tainted with tuberculosis at Chicago, or the other big centers, were tanked, you and I would not be able to buy meat as cheap as we can to-day, and surely it is dear enough as it is. Every day some of us partake of some part of a carcass that has had tuberculosis. If you read the annual report of the Bureau of Animal Industry, you will see that thousands and thousands of animals going to those abattoirs were regularly inspected and passed that were infected. Why, the Federal law makes a provision that where the disease has not extended only so far and where the surrounding tissue has not been contaminated that the carcass is to be passed, and that is why your carcass is passed as food from a practical and economical standpoint. It is absolute downright wastefulness to destroy those carcasses in which the infection is present to only a limited extent, and particularly where you find only small glandular lesions, that can be thrown away and the rest of the carcass used. I would remind you also that meat is ordinarily cooked, the heat destroying germ life; milk is ordinarily used in a raw state. Therefore, do not set up a hue and

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cry where your cow has been killed and the meat afterwards sold for beef and say that that was evidence that it was not infected.

And again, some say, "I had one of my best cows slaughtered as reacting to the tuberculin test and they did not find anything." You won't find tuberculosis when the carcass is but slightly infected under the ordinary methods of meat inspection. Those inspections are meat inspections, not tuberculosis inspections. When we examine a carcass that is to be passed as food, we do not, as I said this morning, mutilate the carcass, but if we did, if we went in deeper, went into the glands and bones and the brain we would find it. I don't believe there has ever been one slaughtered where you had the typical reaction, but what if you searched far enough you would find the lesions.

President Frelinghuysen—Are there any questions you want to ask Dr. DeVine?

A Delegate—Is it not a fact that cattle grown for beef have very little of this tuberculosis business in them? That is, beef produced in the far West, cattle raised for beef in the West, and that they are a great majority of the cattle we eat. Isn't that so?

Dr. DeVine—Yes, sir. Tuberculosis is not as prevalent among the beef cattle as it is among dairy cattle. There is a reason for that. A dairy cow is a worker, is producing and reproducing. A lazy beef animal lives much in the open, and does not have any strain upon its system except to put on fat. And we know from experience that the cow that gives the greatest amount in the pail, the best worker and the hardest worker is the most liable to be overtaken by tuberculosis.

President Frelinghuysen—Are there any questions?

Mr. McNabb—Under our law do you see anything to do but slaughter incoming cows when they react?

Dr. DeVine—As I understand it, your law states that animals that are imported and found diseased shall be slaughtered, and I do not see anything for you to do except follow the law. It is a good thing in a way that the law is that way; I cannot see the sense of your dealers going to New York and drawing a carload of cattle here and the New York man coming to Jersey the same

day and drawing a carload back. Now, there is some reason for it, besides getting better cattle at a lower price. And I say if a carload of cattle is shipped from New York across your borders, slaughter them if they are diseased; and if there is a carload of cattle shipped from New Jersey to New York, slaughter them if they are diseased. Don't allow them to be distributed around.

What is the reason for this transportation? Why, three months ago I tested thirty-six head that were to be shipped to Iowa; the man paid the freight expenses, etc., and the very next day I went to the department and found there was a shipment from Iowa to New York. What is the use of such nonsensical traffic in grade cattle? There might be some legitimate excuse in some cases of pure breds. Why not traffic in cattle of your own State? Test them here; clean out your own State and breed and raise your best calves.

President Frelinghuysen—Are there any other questions? If not, the Chair will entertain a motion to thank Dr. DeVine for appearing again and speaking to us on this interestig topic.

This motion was made by Vice-President Cox, and being duly seconded, was, on a vote, carried.

A vote of thanks was given Dr. DeVine.

Vice-President Cox—We will now take up the next subject on the programme, "Milk Problems: Items in the Cost of Production," by Edward Van Alstyne, Kinderhook, N. Y., whom you all know.

Mr. Van Alstyne—Mr. Chairman, and good friends of New Jersey, as I look into the audience I see the faces of a good many whom I would be glad to have the opportunity of grasping by the hands, and I hope I may before I leave.

In discussing this matter of the cost of milk production, I want to first give you some figures from my own herd as to the cost of milk, and then, as time permits, I want to make some suggestions as to methods and how we can reduce that cost.

The margin of profit is exceedingly small; in fact, it is chiefly the converting of the unsaleable products of the farm into a fin-

ished product, such as pasture, manure and hay, and things of that sort. The milk usually costs in feed and labor and interest on money invested in cattle and plant, every cent that is received for it. There is no question of doubt about that. If the crops referred to are marketed through the cow they afford an increase of profit on them. It is true that a great many dairymen have been called, and with some degree of truth, manure rather than milk-makers; yet, after all, when one comes to realize that dairy cows will void in a year about eleven tons of liquid and solid manure at a value of about two dollars a ton, on the basis of what you pay for that plant food in fertilizer, to say nothing about the secondary value of manure, as Dr. Lipman has often emphasized, why you see that after all there is a considerable profit just from the manure, even though a portion of it is wasted. There is far too much waste.

So that there are the two sources of profit in the majority of cases; the profit that comes from turning the raw materials, unsaleable in many cases, of the farm, into a cash product, and then the profit that comes from the voiding of the animal, to grow better crops and make the farm more profitable.

Now, if this was not true and there were not these two sources of profit, all these records that we see in our dairy papers of cow statistics where the amount received is beyond the cost of production, would mean that a great many of the farmers would be sold out by the sheriff; but, as a matter of fact, they are not. Because they have that small income.

But this is altogether too small a profit to pay for the money and the labor expended.

Let us look the situation squarely in the face and see what it actually costs to produce a quart of milk.

I realize that it is not an easy thing to determine just what the milk costs, and yet it is not so difficult. It is not easy because the dairy and other portions of the farm operations dovetail in together, and it is pretty hard to distinguish. In determining the cost of milk we will let our dairy stand by itself as independent from the farm, and charge to the cows such food as they use from the farm at such prices as it

would have brought had it been sold, and the food that is purchased charged up to them.

And the interest on the investment in the cows, and the money expended for labor. Then we have a pretty accurate statement of what it costs.

First I want to give you the figures from my own herd, ending with April, 1911. My fiscal year begins and ends with April, so I am not able to give you the figures for this year. That is an average year.

My herd is made up of Guernseys and Grade Guernseys, making five per cent. milk, and right here I want to digress a minute to emphasize what the doctor has said and explain, too, why my herd was small last year; that is, the year ending April, 1911. Prior to that time I had had, as many people have, cows with "hollow horn" and these other ailments, and they dwindled away, and I buried them. And when those things increased in my herd, I made up my mind that I would have that dairy tested. Three years ago I had a Guernsey cow brought into my herd. She had two heifer calves, both of which she nursed, because she was a valuable cow, and we wanted to give them every opportunity, and afterwards the cow died of what I supposed was an acute case of garget. We took off the skin and buried her under an apple tree, so that we would get some value out of her remains, and then I became satisfied that the cow had left something that I did not have when she came, and so I had my herd tested out and we took out seven from the twenty-five that were then milking, and we found heifers, as the doctor has said, that were as pretty as one would wish to look upon, that on post-mortem showed lesions almost or quite as large as an egg. They got it from the skimmed milk that they took over from the cows that were infected or from other cows from other dairies that were bringing milk to my dairy, and I found that I had better clean out if I wanted my herd free from tuberculosis. That is why my herd is smaller than it usually is.

Incidentally I may say that the production was about 500 quarts or nearly 1,000 pounds more than the year previous, after I eliminated some of the cows that were less productive, although in that herd there were none that were seriously diseased.

Now, to come back. The yield of milk from those cows last year was 6,340 pounds per cow, the average of all of the eighteen that we carried is over 3,000 quarts. Of course, if the yield had been greater the cost per quart would have been less. But mine is a five-per-cent. milk, and I consider that I could make ten thousand pounds of three-per-cent. milk about as cheaply as I could make the approximately six thousand pounds of five per cent. You cannot have quantity and quality at the same time. Nature don't go two ways at once very often.

Now, if the milk was sold just as milk, one would bring as much as the other, but, as milk is being differentiated against because of its lack of fat and other solids, five per cent. is worth more; my own trade is in cream, and it is more profitable for me to make that kind of milk.

The record of the year stands then like this:

The purchased grain that those cows ate came to \$509.90, about \$28 per cow.

They had about twenty acres of pasture; I follow a partial soiling, about half pasture and half soiling crops. That pasture is land that is valuable, and if it were not pasture it would be in meadow. I believe the only fair way to estimate pasture is on what that land would have brought me in in hard cash if the cattle had not eaten the grass off of it.

Now, if any of you don't agree with these figures, I want you to talk right out, or ever after hold your peace.

It was very dry last year, and those twenty acres of pasture would cut about a ton of hay to the acre. That ton of hay would have brought in my barn thirteen dollars. It was fine meadow hay, largely blue grass, and I could have sold it readily at that price in the field and very possibly a little more. Now, as near as I can get at it, it cost me about a dollar a ton to harvest the hay. I have done it for less than that. That would make the hay cost twelve dollars a ton in the barn, to the cattle, and the twenty tons would have been worth \$240 from that pasture. That is, in other words, if I had not pastured that land off, if I had kept the cattle out and then cut it and put it in the barn and sold it it would have brought me \$240. Now, is it not right that I should take that \$240 and charge it to the cows?

The soiling crops are the most difficult to get at. That, of course, is very largely an estimate, because we raised two or three things on the same ground oftentimes. And I have put that at about seventy-five dollars. The year before it was a hundred, but you see I had only eighteen cows to feed and the season was dry and our oat and pea crop was not what it ought to have been.

They ate seventy-five tons of ensilage. That is very easily figured, thirty-five pounds of ensilage a day for eight months, will make approximately seventy-five tons. I figured that ensilage at four dollars a ton. You may disagree with me, and I will tell you how I figure it. I have made some very careful tests, and I find that three tons of ensilage will displace a ton of hay. I tried that over and over again. Well, then, if hay was worth twelve dollars, the ensilage ought to have been worth four. This year, if we were to value that ensilage I should value it at five dollars. The other Sunday morning a man called me up from a neighboring town and said that he had sold his cattle and he said Borden wanted to buy his silage, and he wanted to know what he should charge. I asked him what he got for his hay and he said eighteen dollars. Then I said, "Your silage would be worth six dollars; take off a dollar for marketing; five dollars at the barn," and the Bordens would have bought it, I understand, if the barn had not burned up the next week.

Dr. Lipman—It costs \$3.80 a ton to put in.

Mr. Van Alstyne—I don't think that is the right way to figure it. I will take that up a little later. I can grow silage at a little less than four dollars a ton; I can grow it one year with another for about three dollars, but I don't think that is a fair way to figure. Supposing I had taken that field in which I had that silage corn and put in it hill corn. That hill corn would have brought me certainly forty-five dollars an acre. Supposing I had put it into potatoes; with a little more labor and trouble it would have brought me more. It is not right, as I see it, to charge the cows a very low price when I am not getting any profit from my land; the labor and the fertilizer entitles me to

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a profit. So I put the silage at three hundred dollars; if you wanted to buy it it would cost any man that amount, and I would think I was lucky to get it this winter, because I don't think a man can afford to feed eighteen-dollar timothy hay to any extent, for that is what it is worth, and the man who sells hay to his cattle for less money than he can sell it on the market is a poor business man. Then I fed them about fifteen tons of hay. That might seem a large amount, but I began to feed hay very early in the fall, because the pasture was short, and, as I said, the soiling crops were low and we did not have a full supply of silage.

The grain cost,	\$509 90
Twenty acres of pasture,	240 00
Soiling crop,	75 00
Silage,	300 00
15 tons hay at \$12 a ton,	180 00

Which makes a total of, \$1,304 90

For the feed that those cows ate at the market value.

That would be about \$72.50 a head for the feed that keeps a cow. I have seen fellows who claimed they could cut that to \$30, but that is my figure.

Now, to this must be added \$180.10 as interest on eighteen cows at \$60 a head. I could have sold those cows, individually, for more; in fact, I did sell one for a hundred that had been milked two months, and the man who bought her would have been glad to have had more. But I inventoried them at that amount, because I think they would have brought that under the hammer.

The year before I inventoried my cows at fifty dollars. I raised them because they had all been tested for tuberculosis, and they were worth that, and would have brought fully that much more in the market.

Then we add to that \$108, as interest at ten per cent. If I were to put my money in the savings bank I would get four per cent. They would add the interest every six months and I would not have to milk it Sundays or holidays, or any other days. When I wanted my capital I would go and get it. If I lent the money on what I considered good security I would get six per cent. I

could not get the principal, perhaps, just when I wanted it, and the risk is a little greater; as the risk increases the rate of interest is higher.

A great many of our people some years ago sent their money out West because they were not satisfied with five and six per cent. They wanted a higher percentage. They did not realize they took more risk, and a good deal of the money is out there yet.

You know there is a certain amount of risk when you put it in a dairy cow. A lot of things happen to that cow. I cannot figure it at less than ten per cent., as the interest, which makes a grand total of \$1,770.90.

Now, if we take the total amount of milk that the cows gave, which was 43,771 quarts, and divide that by the total of feed, interest and labor, it will make the cost about four cents a quart. I have put the labor at \$365. That was rather difficult to get at, and we put it at a dollar a day for every day in the year. I do not believe it is fair to charge the labor twice. I have figured this hay at what it would cost at the barn, it would cost no more to get the hay at the barn to the market than to put it into the manger to the cows. I have charged nothing for cleaning out the stable. If any of you good men, and there are a good many of you I would like to have for neighbors, will come up and go into the dairy business, I will send my man and I will clean your stables and draw out the manure gladly, and I will give you that glass of wine that the doctor said would not make a vineyard. So I have not made any charge for the manure or the labor of cleaning.

That made my milk last year cost me just a small fraction over four cents, and if I had not had a special line of customers, or been my own market man, so that I got better than the average price, I would not have a very great amount of surplus.

I want to call your attention to these figures on this little sheet, because they are interesting from the standpoint that they are taken under entirely different conditions, and they verify my figures and show what I want to show later on—how we are going to make milk at a profit.

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Here is the record of two cows in two herds that were in a Delaware county "Cow-Testing Association" that has been running over a year. Here is one that gave, as you see, 6,261 pounds of five per cent. milk. She approximated very close to mine. The value of the product was \$131.66. Now, it cost to produce that, \$96.43. The roughage was \$25.48; that was not very different from mine. The grain was more in that case. His grain was \$38.41; my grain was about \$10—cheaper, for some reason. These are actual figures.

The labor was \$20.44. How was that labor arrived at? They went to eighteen of the most careful men of the twenty-six in the association, and they asked them independently to give them the figures of what it cost to milk their cows and to take them to and from the pasture and the care of the milk, and they got the figures of the eighteen men, and this is the average. You see mine would be just a trifle less. The labor of carrying off the milk was not reckoned, because the manure was given credit for that.

They figure a little different here, they figure a depreciation of \$8.45. I don't like that way of figuring it, because they have figured in the cost of growing the calf that was to replace the cow. If I raise a calf that is not worth the feed, I am a big fool. My calf account stands on a different sheet on my books, and the cost of the calves and what they eat and their value is never charged to the dairy until that cow or calf becomes a mother and goes into the dairy as a cow.

Dr. Lipman—Suppose a cow lasts seven years on the average, and it costs sixty dollars, would not that be a fair rate of depreciation?

Mr. Van Alstyne—You might do that, but she is worth something. A man should not wait until a cow gets to be bologna beef, and sell her to the butchers at about twenty-five or thirty dollars. If he is wise he will dispose of her before she begins to go down. So I figured it at ten per cent., interest, which would be five per cent. for depreciation. But they have figured that at \$8.45. On the other hand, they only figured \$3.25 interest at five per cent.

There you see your profit in that case, \$35.23.

Here was another man with another herd, and the cow was selected because, to look at her, anyone would have taken her to be as good a one as the other. In fact, these two cows were at our State Fair last fall, and many looked at them, and nine men out of ten picked that cow for the best. I speak of that because it emphasizes the importance of keeping records.

She gave 1,851 pounds of milk; the value of her product was \$37.22, as against \$131.66. Her roughage was approximately the same; her grain was less; the labor was the same; the depreciation was the same, and she made a loss of \$28.15.

You can see how much that man's milk cost a quart, and how much this, and how many cows of this kind a man would have to have to pay for his farm. (Laughter.)

Well, the figures are significant and speak for themselves.

I want to pass on rapidly and give you a cure.

We hear a lot of loose talk. As I heard Mayor Gaynor say last night at Albany, "There is a lot of cheap talk, of baby talk, abroad in the land about this matter of the cost of production and the prices we are getting." We are sitting down and we are howling about the prices, and we are howling about the fellow on the other end that does not give us enough for our milk, and we say, "Oh, we have got to take what the fellow will pay us and we have got to pay what he asks.." Not even can we put a price on our product. If we go to the man and say, "I have got so much milk to sell." And he says, "Well, how much do you want?" We don't know in the majority of cases, because we don't know how much to ask him. We don't know how much it costs us, and we guess we would like to have a big price, and it all ends by taking the price he gives us, because he knows how much it costs him to distribute it, and he knows how much the interest is on his investment and all that, and how much he can get, and he gives us—perhaps you say the price that he pleases; he does, in a measure, but I want to say to you, men, that the price of milk, as of every other perishable product, is governed, in the main, by the great law of supply and demand, and you cannot get away from it.

I was at Branchville, in this State, two years ago last March, when milk at the trade prices given out by the Bordens was five cents less per cwt. than the year before. I said to the man in charge, "Why is it that you pay less this year, when grain is higher and labor just the same as the year before?" He could not give me any answer. There was none. Why did they do it? Because they looked the situation over and they thought they could get all the milk they wanted for that price. So they did not propose to pay any more. That is the business end of it.

We like to get a high price for what we sell, and we certainly holler like the mischief when we have to pay high prices for what the other fellow has got to sell.

Now, let us be fair about the thing. Well, what happened? April and May went along. Then the Almighty took a hand in the situation, and He withheld both the early and the later rain, and by the middle of July there was a milk famine, pretty near. Something was going to happen. And the big fellows voluntarily raised the prices, I think, something about twenty cents a hundred. Philanthropy? Not by a jugfull. Business. They wanted the milk and it was not there, and they had to pay a bigger price to stimulate its making, and when they made the prices a year ago they were higher than any prices we knew since the Civil War. Why? Because the supply was short. And what happened? Just what I was afraid was going to happen. The farmers all were stimulated to make more milk. They were going to get good prices that winter. Just about that time grain dropped three dollars a ton, and the winter was milder; we had a good crop of corn; we had lots of clover hay, and had one of the best winters to make milk I have ever known, and it stimulated unprofitable cows like that one, that put milk in the market, and it went in at a loss and went in more than the markets wanted, and the result was this year the prices went down. The law of supply and demand. You cannot get away from it.

Now, what is the suggestion? Why, the suggestion is until we know as dairymen how much it costs to make our milk we will take the other fellow's prices. And when we know how much it costs we will be bigger fools than I think New York

and Jersey men are if they continue to sell at less than it costs to make.

What is the remedy? Get rid of the unprofitable cow.

How? Why, in the first place, by knowing what our individual cows do; by weighing the milk. I tell you, it is an eye-opener. If I had time I would like to just discuss a little and preach you a little sermon on the value of a cow-testing association. You are a State Board. Now, if you want to do a thing to benefit the dairymen of your State, you will find there is nothing will do them so much good as forming cow-testing associations, where you send an independent man to the dairy month by month and he takes a record of their work and a record of their food and the cost. In the cow-testing association in Delhi, with five hundred cows, they eliminated, last year, one hundred and fifty. I was in the city of Burlington at the State Dairy Meeting, in Vermont, where they have had cow-testing associations for some years, and the report of the general association, made up of all the associations, was that in every one of them that had run for two years the average increase from the product of those dairies was a thousand pounds per cow. What did that mean? It meant the getting of six thousand pounds per cow, and that would make his milk a profit. And the man who only made twenty-eight or thirty hundred made it at a loss. That is the first thing: taking out the unprofitable cow. The man who sits down and folds his hands and howls about the inequity of the milk dealer on the other end, and does not try to help himself, will sit there and howl until Gabriel blows his horn, and he will never get any results.

I can remember, and some of you can remember, when milk was at a dollar a hundred. That was the annual price. And there were howlers then. Now the price is double and we have got, like the poor, the howlers with us yet. And they will be with us until a lot of them are gathered in by the old man with the scythe. Men made money from cows then, as they do now. Not much, indeed, but I tell you, friends, the solution of the problem is with ourselves.

I would like to read to you in the old book that is not read as much nowadays as it ought to be, perhaps, the story of a man

who came from Persia, who led a retinue of his fellow-countrymen across the plain back to his native city of Jerusalem, where the walls were broken down; and against the protest of some of his own people and the machinations of those that were outside, they rebuilt the walls of the city, and this is the remark that he made: "Every man builded over against his own house, so builded we the wall."

I want to tell you that the solution of the price of milk, or the profit in the dairy is with you and is with me, with each one of us; when each one of us will build up against his own dairy and eliminate the unprofitable cow, and know what it costs, and some other things that I just want to briefly suggest, then we will make a profit from our dairy.

We have got to raise our own cows. You say: "That is hard to do, when we are selling milk, and the calves won't be worth as much as the feed costs."

They won't if you raise just the ordinary calf, with four legs, a head and a tail. No, that calf won't pay for feed. But a calf that is properly *bred*, to begin with, and properly fed, will pay to feed good milk to for the months that you have got to do it. Why? Because you cannot buy those cows. Because there are less of them being raised every year. Because there is more milk being sold.

If I had time, I would like to go into that in detail and tell you some of my own experience on what you have been talking here this morning and emphasize what Dr. DeVine told you—that in the State of New York there was scarcely any untested herds that were not full of tuberculosis. Why? Because of infected cows.

I was talking to Dr. Moore last night, and he said he believed there was twenty-five per cent. of the cows of the State that were tubercular to a greater or less degree. In the Hudson valley where I live there are forty per cent. How does it come there are more there than in the State at large? Is it more unhealthy? No; that is God's country. But we have been doing just what you people have been doing. We have been milk makers, not dairymen. The bulk of our farmers have been buying cows and making milk, and when they have bought a cow into the herd

they have put in the herd more than they bought when they bought her—tuberculosis.

So we have got to raise our own cows, and from not necessarily pure-bred cows, although, if we can afford them, they would be the best, but from good, pure-bred bulls. If there is a poor man here, he is the man I want to talk to a minute. How much can you afford to pay for a pure-bred bull if you could not get one for any less? Fifty dollars? I hear you say—five hundred? What a poor man pay five hundred dollars for a bull? Yes. The rich man can get along, but the poor man who has got to turn every corner can afford to pay the five hundred dollars and buy a good bull. Now, what do I mean by a good bull? I don't mean a grade bull. I don't mean cross-bred. But I mean a pure-bred bull. And I don't mean a bull that is only recorded and got nothing but a pedigree. But a bull that is recorded as an evidence of his purity, and then that has an ancestry behind him of producers. If you will go and buy a bull that has for his dam a producer, and his grand-dam another producer, and if you can find out what the daughters of his sires are doing, and that they are doing better yet, you will be on the road to success.

I want to give you this illustration of what that means. Here was a registered Jersey bull, but nobody knew what his ancestry was. His dams were of unknown merit; that bull was mated with a lot of cows which gave as their average 5,380 pounds of milk, and the average production of their daughters was 4,336 pounds. That is breeding up with a vengeance. What did that bull do? He fixed his characteristics. He came from that kind of ancestors.

Now, let us see what happened when they took another kind of bull, a bull with dams of known merit, and the average of ten of his daughters. The dams gave 4,609 pounds of milk and the daughters gave 7,154 pounds. There was less fat in the daughters' milk by about three-fourths of a per cent., but the dams made 238 pounds of butter and the daughters 348, or an increase of milk of over a thousand pounds per cow, worth at a dollar a hundred per cow, ten dollars; ten cows, ten times ten dollars is a hundred dollars. Ten per cent. interest on five hundred dollars, what is that? Fifty dollars. That is better than

Standard Oil stock. Fortunately, it will not be necessary to pay \$500.

A good bull ought to be kept just as long as he is serviceable, and the older he is the more valuable his calves are. Buy a good bull. Then raise our own calves, and then better feed. What do I mean by better feed. I mean better feed in the summer as well as in the winter, and then we have got to take up the matter of pastures. One thing that is the matter with our pastures that we get so little out of them is that we have got too many cows on them; when we eliminate a lot of those poor cows we will have better pastures, because we won't have them to chew them down in the ground.

What do we do in our fields? We cut the weeds off at the time when they are the weakest, and they don't grow because we have taken off the top. What about the pasture grass, when we gnaw that down to the very last bit until we begin to doubt if there is very much chance for that pasture.

Supplement the feed of the pasture.

Now, just a few words about the winter feed.

I want to show you the way the increase in price has been this year. This chart was made November, 1910, and these were the prices of these things, compared to the first day of November, 1912: Oats, forty-two cents a bushel, or one dollar and thirty a hundred; I saw them quoted at fifty-five the other day; corn meal, a dollar and twenty, this year a dollar and fifty; wheat bran, a dollar and twenty-five, now a dollar and fifty; gluten feed, about the same; corn, sixty-four cents a bushel; I saw it quoted since at eighty-four; malt sprouts, about the same as a year ago; dried grains, oil meal and cotton seed meal about the same.

That indicates that the prices of our feeds are increased on the straight cereals, the oats, corn and wheat; the price of by-products that have come from the malt houses and the gluten factories and the oil mills have remained about constant.

Let us run this over, we will draw some deductions from it.

The cost of a pound of protein in oats is fourteen cents. That is pretty high. It is too high to buy oats.

Corn meal is not a good source of protein, and it is very high.

Just bear this in mind, there are a lot of people buying mixed feed, and here are samples of one of the best: Union Grains and Four X Grains, which are the base of the former.. In Union Grains Dairy Mixture, at \$1.65 a hundred, the protein cost nine cents a pound, and Four X Grains, at \$1.85, the protein, cost eight. The manufacturer says that Union Grains are a mixed feed, and bound to make a balanced ration and save the farmers a lot of trouble. They are mighty anxious about saving the farmer trouble. Now, if there is any secret, if there is any patent in putting two or three kinds of food in a box and mixing it up, I would like to know it. And yet men are paying more for the mixture than they do in the straight unmixed.

What is the lesson from this chart? That the cheapest foods that we have this winter are the higher carriers of protein, like cotton-seed meal, with a bulky food, like malt sprouts or dried grains, foods of that character. The deduction is that we want to feed as much cotton-seed meal as we can. But there is a limit. If a man has silage, he can feed an abundance of cotton-seed meal, he can feed certainly four pounds of it with safety, where he could not feed half of that if he had all dry feed.

You will notice beet pulp is not a protein feed, but where a man runs short of silage, or where he has no silage at all, he can afford to pay twenty-seven dollars for dried beet-pulp to help out. There is no question about that.

You don't raise many oats in this State, but if you grew some and had oat straw, and cut dried corn stalks, then if you will go and buy molasses and put with it, you can feed these to advantage. I bought molasses a week ago last Saturday for thirteen cents, delivered at my station on the New York Central, fifty-three per cent. sugar, digestible, laxative, palatable. Just what the straw and dried stalks lack, and at that price the dry matter in molasses only costs you \$30.50 a ton. Corn meal, at a dollar and a half for dry matter, will cost you \$34.50. You can well afford to buy molasses and feed it and save the hay and keep the cows in good condition.

A Delegate—How about corn-cob meal?

Mr. Van Alstyne—If we have the silage well eared, we certainly don't want to buy corn meal. I am satisfied of that.

The Delegate—I say corn-cob meal?

Mr. Van Alstyne—I think the corn-cob meal situation is just this: If you have got your own corn, and you have not corn silage, so that you want to feed corn, and you can get corn ground—cob and all—cheaper than you can shell it and have it ground that way; if you have an honest miller that don't take the corn alone and leave you the cob, I would grind it cob and all. But remember that a pound of cob meal and a pound of corn meal don't trot in the same class.

To summarize: First, we will have a better cow by testing, and, next, by raising our own from pure-bred bulls, carefully nurtured and free from disease; then intelligently fed winter and summer, buying feeds not because of what they cost or what the other fellow says about them, but for what they contain. I want to tell you that there never was a time in the history of the feed proposition when there was so much adulteration as there is this winter. Our own Superintendent of Feeds told me the other day that they had found some of the oat foods with eight pounds of sand to the hundred. Of course, it was a dry season when the oats were gathered. That they are grinding all sorts of matter so fine that you can detect it only with a microscope and putting it in the mixed feeds.

Let them alone, and buy straight by-products. When you have starchy foods that are indigestible and constipating, you can seupply a laxative in beet pulp and oil meal; the latter is also a protein food.

And then better sanitation. Why, friends, a barn that is well ventilated and well lighted means better digestion, and that means more milk, and a barn that is so fixed means healthier cows. I could a tale unfold about this tuberculosis business that would substantiate many things that the doctor said, and perhaps some other things that he has not said, and I want to tell you, friends, aside from the matter of the affecting of public health, and I think your President said that a man who sells milk to his neighbor that is liable to bring disease and death is a murderer;

I say, leaving that aside, and that ought not to be left aside, but from the standpoint of economy you nor I cannot afford to feed the expensive feed and put expensive labor on cows that are more or less diseased. As a matter of economy then, the last thing to make cheap milk is sanitation, sanitary surroundings and healthy cows. (Applause.)

A Delegate—I would like to ask how much molasses you feed?

Mr. Van Alstyne—About a quart to a cow. Take a gallon of hot water; that will thin up about three gallons of molasses, so you can wet your dry food with it, or you can take a whisk broom and sprinkle on the fodder.

Mr. Gill—I wanted to ask Mr. Van Alstyne what the cost of milk is per quart according to his figures, last year's feeding?

Mr. Van Alstyne—My final cost, four cents. I stated that, I think.

Secretary Dye—I want to announce the Committee on Resolutions, so that they will get together. The committee is: John W. Hendrickson, Justus W. Dobbins, Amor Kirby, George B. Randolph and Henry B. Lippincott.

Vice-President Cox—If there is nothing further, the Board will now stand adjourned until two o'clock this afternoon.

SECOND DAY—FIFTH SESSION.

The meeting was called to order by the President.

President Frelinghuysen—This afternoon session of the Board of Agriculture will be addressed by Colonel Stevens, the State Road Commissioner. The Executive Committee has requested him to make a short address and explain his State Highway policy to you. (Applause.)

Colonel Stevens—Mr. President and Gentlemen—It would be useless, as I have expressed before, myself to attempt to argue with a body of farmers in this State as to the necessity of good

roads. That is not what I am to talk to you about. What I want to talk to you about is rather as to the way in which we can get good roads and keep them good after we have got them. I will, however, say one word as to one of the features of good roads that seems to me to merit special attention.

You all realize that a good road system is not merely of value to the farm because it allows you to transport your produce from your farm to the railroad station. Besides that, the road fills a very important function in making the farm liveable, in making it a place where you can maintain and keep a proper sort of population, and where you can keep your own sons and daughters contented. Where they will not be drifting away continually to a city, away from the farm, and to a condition which is certainly physically a much inferior one to that that prevails in agricultural districts.

We have here in New Jersey a very large amount of roads that have been built mainly on account of the agricultural interests of the State. There is a provision in the State law that prevents the State from giving aid to the construction of a road to a city. This is, to my mind, a very evident sign of the intent and mind of the Legislature in enacting that legislation, namely, that its object was to provide for country highways. This intent should be more clearly expressed.

The problems of construction have grown, not only with the amount of road built, but also with the conditions that have arisen since the beginning of State road construction. In other words, we are to-day confronted by an engineering problem which we cannot say has been thoroughly and satisfactorily solved; that is to say, it is practically impossible to determine with accuracy to-day the best kind of road to fit any given set of conditions. In the first place, there is no guarantee that before the road that we have designed is built conditions will not have so changed that if previously known the design would have been changed on the drafting board.

We have that difficulty to confront, and, besides that, we have the difficulty that in this State we have heretofore kept no scientific or accurate record of our experience in maintaining and

keeping our roads. That work has been done largely in a haphazard way, sometimes carelessly and unmethodically. In some counties, however, the roads have been very well maintained, considering conditions.

Now, you cannot judge of the success or of the failure of a given type of pavement without knowing the conditions of wear to which it has been subject, its original cost and the proper cost of maintaining it in proper order and the amount actually spent on it. Only the most expensive constructions will maintain themselves without care or with very little care. If we are going to have economical road construction; if we are going to get into a condition where the money at hand is to be sufficient to extend State roads all over the State, we must administer and expend that money in the most efficient and economical manner. Our present organization is not fitted to do that.

The cost of administration and engineering in this State are the lowest engineering costs of which I am posted in any State. They are a little over four per cent. The ordinary allowance for road work is from seven and a half to ten per cent. The ordinary allowance for public work, city, county or State, generally, is slightly over ten per cent., and still, in New Jersey, we are doing it at four per cent. It is a high testimony of the honesty of the men who have been administering the department, but I submit that we have been foolish in that we have wasted at the bung-hole while we were saving at the spigot. In other words, I feel that more money expended in administration and engineering departments will result in more roads for the money expended.

One important feature which has developed since our present road legislation was enacted is the automobile traffic. Previously to 1890, the average radius covered by a vehicle on the road was probably not over eight or ten miles. It probably was very much under that figure. To-day a man will start off after supper on a summer's night in his automobile and run forty miles to cool himself and his wife off. The automobile traffic between large cities and the summer resorts, and between the cities of New York and Philadelphia and our own cities has become very great.

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More and more of this is heavy freight carried in motor trucks, a very destructive kind of traffic.

The cost of maintaining roads for that traffic is daily increasing, and the cost of maintaining a road in any given community bears absolutely no relation to the benefits derived by that community therefrom or its ability to pay for it.

The only equitable method is to take those important roads which are subject to that sort of traffic and put them in the hands of the State, not only for their construction, but for their maintenance.

This, I think, will give you an idea of what I have derived from one year's experience in the Road Department. That experience is not long enough to make me feel overmuch confidence in my views, but I do feel, and I think it is very evident to anyone who will take the trouble of studying the legislation under which we are acting, that that legislation never contemplated the use of automobiles or of through traffic and that if we are going to make not only our construction, but our administration, efficient and economical, as it ought to be, we have got to take that very important element into consideration.

If we do, and if such a consideration results, as I feel it must, in a State system of highways, you will have put on the Road Department a very serious and important duty, one involving engineering questions and administrative problems of no small difficulty. To solve these properly will require an organization whose sole aim will be efficiency in administration. The means at hand, I refer to the financial side, are not unlimited. If the looked-for results are to be had it can only be by such an administration, and such an administration is impossible if political questions are to have weight in road building and maintenance. I can not lay too much weight on this point.

I thank you, gentlemen, for your very kind attention. (Applause.)

President Frelinghuysen—I am sure we are very thankful to the Road Commissioner for having presented these facts to us.

Milk Ordinances as Affecting the Cost of Production.

BY DR. HARRIS MOAK, BROOKLYN, N. Y.

I would ask you to remember that your subject of producing and handling milk is not so little known by many of us in the city, as many of you in the country honestly believe. You forget that many of us used to be down on the farm working side and shoulder with you, and it is an undisputed fact to-day, that many of the men and women in the city who have the most, and who are doing the most and the best work, were born and brought up on the farm; lived and saw conditions the same as you live and see them; but have lived to see the other end of this question—the condition in which your milk comes into the city, and the effects of your milk upon many who use it in the city.

But as regards the laws or ordinances.

Dr. VanDyke, of Princeton, has recently said, "We are having an era of extensive and intensive law making. The books are crowded with statutes which keep everyone busy interpreting them. We are living in an age where an attempt is being made to regulate everything by maxim. Nowadays, a man hardly dares to buy a newspaper or blow his nose without first consulting the statute books and learn if there are any laws regulating these affairs."

What is the reason for milk ordinances? Why do they exist? Every cause has its effect and sometimes the effect reverts upon the cause. Most milk ordinances arose from some bad or dire effect resulting from the absence of such an ordinance.

"Salus populi suprema est lex," was a Roman law. This translated to our time means, "The safety of the people is the highest law."

If we find that 380 cases of typhoid fever, such as we had in New York two years ago, are directly traceable to some fault, or carelessness, or ignorance down on the farm, it bestirs many of us, and especially, if we have lost some friend or relative from such carelessness, to see what may be done to prevent such a recurrence, and to-day one of the most natural things to do is to appeal for some ordinance of protection. When human lives and human health are sacrificed, the price for somebody's carelessness is being paid, and the price is too high!

Look through the Government Bulletin entitled "Milk and the Public Health." Review the details of the 179 epidemics of typhoid fever, the 51 epidemics of scarlet fever and the 23 epidemics of diphtheria with the thousands of cases and hundreds of deaths, all due to milk, and you will gather the history of many milk ordinances.

Do you wonder that they arose?

Read carefully the modern up-to-date ordinances of any large city like Trenton here, your own city, and let me hear what you have to say as to the reasonableness of such ordinances, particularly if you will be a consumer of milk. You will believe with me that there is nothing but what is fair, nothing more than necessary to secure some little protection, and assure some little safety.

MILK ORDINANCES ARE TO DEFINE THE QUALITY.

Quality in milk is a comparatively new idea. It is not so many years ago that milk was milk. We have looked too long at a bottle of milk "as through a glass darkly." We must now "see it face to face." Quality has long been recognized in all other foodstuffs. Peaches, pears, potatoes are graded and sold according to quality. The first-class article selling for the first-class price, the middle grade for the moderate price, and the poor or useless products bringing little or nothing.

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The same idea is just entering the milk business. The producers of milk should stand behind it. It will rebound to their benefit and profit. Let us consider a couple of points regarding milk quality. First its food value. This means its total solids. Most milk ordinances require 12 per cent. Nearly all dairymen to-day are meeting this requirement. A good many are exceeding it. Some fall below. Milk may thus easily vary 30 per cent. in its actual food value. Should it all sell at the same price? If some milk is worth four cents a quart, then other milk, on this score alone, is worth over five cents per quart. Consumers buy milk for the food it contains, not for the water it contains.

Some breeders are contending against this ordinance, and in New York State last winter secured a reduction in this standard from 12 per cent. to 11½ per cent. Their aim is production of quantity not quality. Their cry, "No standard but purity." The result is—not food, but water. Let me quote from Whitaker on this point: "The modern cow is not a natural product. A milk producer can, within certain limitations, have any kind of milk he desires, so far as amount of food material in it is concerned. If he starts out with the intention to produce 14 per cent. milk he can select a herd which will produce 14 per cent. milk. The same is true as regards 13 and 12 per cent. milk. If he should take it into his head to produce 10 per cent. milk, no doubt such a herd could be secured; and if any one was idiotic enough to desire to produce milk with 9 per cent. of food material, no doubt in a short time such a herd could be developed. If then a producer deliberately selects a herd which will produce milk below what the law says is standard, I see no hardship in prosecuting him."

The amount of dirt, both visible and in solution, in the milk of some farmers, lessens the quality of the product just as positively as a basket of peaches picked up from a wet, dirty street gutter is of lesser value than though such an accident had not happened.

Then again, the greatest point of milk quality is its freedom from disease bacteria. A milk that is absolutely free from typhoid, scarlet fever, diphtheria, tuberculosis, and the like, really cannot be compared with milk containing these germs. In the effect produced by the consumption of such milk, it might just as well contain a deadly poison such as arsenic or strychnine. Let producers and dealers of milk become the consumers for a moment. Let us ask *them* what they would pay for such milk.

Quality as defined by milk ordinances, is minimal, not maximal, "For the law made nothing perfect."

Let us run through your Trenton ordinances, and easily we discern that there are but three or four large factors as affecting the cost of production.

One of your oldest ordinances requiring a certain food value or milk solids of twelve per cent. has driven practically no honest milk producer out of business. The ordinance prohibiting additions to milk, such as preservatives or embalming fluids, thickeners, or coloring matters; or subtractions in the way of skimming off the cream, does not add one cent to the cost of production.

Ordinances covering the point of protection against contagious or infectious diseases, with a little knowledge will add nothing to the cost of production. First the producer must know what diseases are transmitted by milk. This costs nothing. Second, he may produce milk on his farm for years, or for his whole lifetime, and never have a case of any of these few diseases. Added cost of production, nothing. Should a case of one of these diseases ever develop among the family, or employes, then such a person must have nothing to do with the milk until so advised by competent authority, which is usually the local health officer. This contingency may cost a producer something, but how rarely need it happen. A bad well seems to be the chiefest danger and source of infection, for we read that no less than 109 of the 179 typhoid epidemics came from infected well water. It may cost the producer a little something to put his water-supply in order and make it safe, but once well done it is usually done for a life time, and the added cost distributed over a

few years is exceedingly small. The ordinance requiring a pure, safe water supply, is looking after the interests of the farmer and his family quite as much as the people who get his milk.

The penalty for allowing disease bacteria to get into milk should be very high. It is simply slackness in making use of the most simple and well known truths.

Oh, but you say, look at the imposition of a requirement like a limit of 100,000 bacteria per cubic centimeter. How unreasonable! How revolutionary! Not so with a little knowledge. One thing alone will almost meet this requirement. I refer to the use of a small-mouthed milking-pail. It has been carefully studied and tried for the last ten years. It has been in use and found absolutely indispensable at all certified milk farms from the beginning. It has been demonstrated that the use of such a pail will keep out from sixty to seventy-five per cent. of the dirt that falls into the ordinary old-fashioned, wide-mouthed pail, in the ordinary cow-stable. You have to have pails any way for milking your cows, and the cost of these pails to-day is little, if anything, more than that of your old-fashioned pail. It is appreciated that the trouble with many good and useful things in this world to-day is their lack of availability. If we do not know just where to turn for the new idea it is quite natural to defer it and finally forget it. We want things of easy access and at reasonable cost. The small-mouthed pail has been taken up by some of our larger and more progressive milk companies in New York, with the result that they are giving the manufacturers of these pails large orders for them and sending them to the country, and selling them to the producer at the flat cost price of seventy cents each. One concern counts on having not less than 10,000 of these pails in use among the farmers within three months. In short they have simply been made available. This pail is practically as easy to use as your old style pail, and if any of your milkers object, ask him if it is not as easy to hit an eight-inch hole in a milk pail as the old tomcat's mouth. The use of this pail alone will practically meet that newest and best of ordinances. In the light of present knowledge, I contend the ordinance is minimal. If at no more cost you can make your milk a little cleaner, and thereby prevent it from spoiling and being rejected, some of you producers will be saved money by this very ordinance.

Another point quite as important as making milk of good quality, is keeping it so. This applies principally to the dealer or distributor. The great bulk of milk to-day is handled in cans containing from 20 to 40 quarts. Several laws or ordinances require that these cans be cleaned before returning them to the farmer. This, if done at all, is done in the most cursory way. Usually it consists of a good rinsing, and then inverting the can over a steam jet for a few seconds. This rinsing and steam squirt are not fool-proof. It is too easy to get lax. This work may be done in the city or at the country milk station, but usually there is a 24-hour interval between this slighting operation and the refilling of the cans. Let us open some of these cans and examine them just before refilling. They look fairly clean, smell badly and by bacteriologic count, test horribly. The milk before going into these cans may test but twenty or thirty thousand bacteria, but as soon as the can is filled and stirred and retested it may contain a million or more bacteria per cubic centimeter.

We have contended that the farmer can fairly easily come under the 100,000 line, but the dealer must know how to hold it there. Cans should be well washed and then should be entirely sterilized. A reinforced concrete sterilizer that will hold 250 forty-quart cans should not cost more than two hundred dollars. Here the cans can be enclosed and exposed to flowing steam from thirty to sixty minutes and be efficiently sterilized. In this the dealer is only doing his part. This can needs then only to be rinsed by the farmer with a little boiling water just before he begins to milk. This is a matter of practically no cost to the farmer, but is a wise precautionary measure.

The weight of our argument is that the vital milk ordinances need add but little, if anything, to the cost of production.

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Producers of milk should welcome laws and ordinances looking toward improvement, and an increase of standard will in the end work to the betterment of the industry. Milk producers as a class have been too slow in recognizing that there are the "undesirable" among themselves. There are dairymen who should be disbarred, just the same as there are the rogues and rascals in law and medicine who are disbarred from practice, and the prime movers in this disbarment are the legal and medical professions. So your organization should be first in forbidding certain of your members to continue their degrading work—men who will sell the milk from sick cows, kept in filthy quarters and fed on rotten or spoiled food. The elimination of this type of dairyman will add but little to the cost of producing the great bulk of milk. The industry would be bettered. Milk would be more appreciated. Stand up for good high standards. What an improvement in the dairy industry could be noted if you eliminated 5 per cent. of your degrading members. How much better off, too, would be these same men working for good producers than eking out the useless and harmful existence that they do.

You must set about putting your own house in order. Be the counsel, judge and jury of your peers. Try not to merely meet the law, but to exceed it.

Honesty, purity, striving to do better—
"Against these there is no law."

During the reading of his address, Dr. Moak produced a milk pail, which he showed as a sample of the pail he referred to in his address. He spoke of it as follows:

This is a very heavy, strong and durable pail, which is as easy to milk in, practically, as the old-style pail, but which, when held between the knees, as you can readily see, prevents a great amount of dirt from falling into the milk. This pail is not quite up to the latest idea of pails that are being put out. I tried only yesterday to secure a sample to show you, but could not get the one that is actually being put out. The one actually being put out has the lip turned up for a half-inch, and is perfectly smooth inside at the point where you notice this pail is not perfectly smooth. Then when you empty this pail into the forty-quart can or into the strainer, that raised lip prevents the dirt coming off the cover on the top of the pail and falling into the can. That pail, of that style, weight and durability, is being put out at a cost of seventy cents, and I think the wide-mouthed pail sells for practically that price.

During the reading of this address, President Frelinghuysen surrendered the chair to Vice-President Cox.

Vice-President Cox—You have listened to this interesting address. Is there anyone present who wishes to ask the doctor any question touching upon this matter?

Mr. Reid—I would like to ask a question about that new style of pail. The inside of that pail does not appear to be perfectly smooth; is that easily cleaned?

Dr. Moak—The underside of the cover on this pail is not flushed the same as the models are that they are actually putting out.

Mr. Reid—That is very important.

Dr. Moak—That is important, and is taken care of in the pails as they are being put out, they are perfectly smooth, flush on the inside, the same sort of finish. If you will observe this pail, everything is smooth and flush and clean, and it is a pail that is easily washed.

Mr. Reid—In speaking about the cans being shipped back from the dealer; any can thoroughly cleaned, in twenty-four hours, won't smell. If you take the milk from the cans and clean the cans and put the lid on, it won't smell if it is clean inside. Is that a fact?

Dr. Moak—It will not smell if it is absolutely sterilized.

Mr. Reid—I have never seen one that was, then.

Dr. Moak—That is what we have got to come to. I have seen very few myself, I will admit, in my travels about the country, and I travel about two thousand miles a month on this work. That was why I brought up that can business to-day. I have rarely seen a clean can sent back to the country.

Mr. Reid—We, as producers, are willing to admit the truth of what you are saying, but what about the cost? Are the people willing to pay for this? We cannot do this for nothing. That is where the trouble comes with us.

Dr. Moak—I have talked about the vital points and I believe that the actual cost need add but little to the total cost.

Mr. Reid—If you think the city people will pay the price so that we can do it, I think we will be willing to do it.

Dr. Moak—How much more time will it take to milk in a pail like this over the old style pail, the old style open-top pail?

Mr. Reid—Not very much, but that is only one point.

Dr. Moak—That is one of the big ones.

A Delegate—The average milker won't get all the milk in that pail.

Mr. Reid—How much of the milk will go outside of that pail?

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Dr. Moak—Very little.

Mr. Reid—A whole lot more than goes outside of the other.

Dr. Moak—Not if you are careful and see where you are milking.

A Delegate—I don't see how you can sell that pail for seventy cents. I have never paid less than a dollar and a half for a pail made of good tin. I don't understand how they sell a pail like that for seventy cents. I don't believe the quality is good.

Dr. Moak—Just come up and examine it. As I said, the dealers are putting this out at the absolute net cost price. They have ordered them by the five hundred or the thousand at a time and got them for that price and delivered them to the dairymen at that price.

A Delegate—We have a sort of pail like that in Union county, at Elizabeth I saw them, but our pails are a different style from those, entirely. Our pail comes up to a hole in the middle, and the top is covered, similar to the forty-quart milk can, and the neck comes up. I think that is a better style than this. A good deal of dirt rests on the top of the pail and the neck holds that out. If you are going to pour into a can with your pail, you will have to stop and wipe that top off before you pour into the can. I think ours is an improvement over that pail.

Dr. Moak—I spoke of this pail particularly from the fact that the Geneva Experiment Station in our State, and also the Cornell University, after very much experimenting with all the small-mouthed pails they could get hold of and two years' experimentation and study, accepted this modified pail as being the best of them all in practical use.

A Delegate—There is a pail with a funnel on the side that comes in the side, very much like the old watering pot.

Dr. Moak—They cost three dollars apiece. We have used those for years, but they have a broader top.

A Delegate—Did you ever try those? Ain't they alright? Did you ever use them?

Dr. Moak—We have tried all kinds, I think, and I have brought this one to my mind and from the way I have looked it up, as being the best pail. Remember that the lip turns up on the pail as sold to-day, and, really, there is but very little danger of dirt sliding over into the milk when you empty the pail. I would be glad to tell you where these are manufactured. You might not be able to get them in small quantities at that price. Yet it is absolutely true what I tell you, they are being manufactured and put out at seventy cents each. I am not here to advertise anybody or to represent anybody, but the Reid Manufacturing Company of Newark, New York, are making these pails for one of the large dealers, and they are big manufacturers of this sort of thing. I think, in large numbers, you will get them at approximately that price.

A Delegate—Did you ever milk in one of those pails?

Dr. Moak—Yes, sir. (Applause.)

The Delegate—Yourself?

Dr. Moak—Yes, sir. (Applause.) I was born and brought up on the farm, and milked cows and worked on the farm until I was twenty years old. If I did not know something about the business I certainly would not hold my present position as the expert for our milk commission, having put in the last eight years on this sort of thing in the city.

Mr. Reid—I want to say that these questions have been asked of you, most of them, in good faith, not to embarrass you.

Dr. Moak—Yes, I realize that.

Mr. Reid—The great trouble I see in this business is the cost. I am a milk producer myself on a small scale. I know our line of business, as well as every other, has its share of rogues. I don't dispute that at all. I want to say, though, that, on the other hand, we realize that all these details add to the cost. Mr. Van Alstyne spoke to us this morning of the cost of producing milk and showed that the cost of production was over four cents a quart; now, in view of what the Borden people pay and what the Sheffield Farms people pay for milk, can you tell me if we

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can add this to the cost of milk, and will the producer pay it? Are you adding this to the cost of milk and making us pay for it when we do not now receive cost? If the people who use the milk are willing to pay to produce this milk we are willing to produce it.

Dr. Moak—What points do you want to be paid for of those I took up? I could not, of course, in my discussion take up everything. I only touched upon three or four of the vital points.

Mr. Reid—There are a few things I have in mind. Now, the practice in some places requires white milking suits; is there any difference whether they are black or white, so long as they are clean?

Dr. Moak—No, except with white you can see the dirt more quickly.

Mr. Reid—Does it make any difference if your stable is whitewashed or not, if it is clean?

Dr. Moak—I don't think it does, as long as it is clean. The point is, if it is white, you can see whether it is dirty quicker than if it is black.

Mr. Reid—Just as Mr. Van Alstyne stated, we are producing milk now at almost actual cost, and as soon as the least thing is added to the cost it makes a loss and it makes it discouraging to us right away.

President Frelinghuysen—The point has been raised about white suits. I should like to ask the gentleman if he is producing certified milk, or just plain clean milk?

Mr. Reid—Plain clean milk.

President Frelinghuysen—The idea of white suits in a certified milk plant is, it is laundered in hot water, and they are sterilized. You take a black suit or an ordinary pair of overalls, they are not washed or cleansed and they are used right along, and that is the reason why the white suit is used. Of course, if that requirement is made all over the State it will add to the cost of ordinary milk for which you cannot get the price that you get for certified milk.

Mr. Reid—The use of that pail will add to the cost. I know the average milkman will waste a lot of milk in that opening. Any man knows that in the dairy business. Take the average cows with the teats projecting this way and that way in different directions and with the average milker, you cannot get the milk in that opening.

Dr. Moak—Have you tried this pail? Don't prejudge. I would ask you not to. Get a few and try it. I think the loss increase in a year would be infinitesimal.

Mr. Reid—Even if I could do it myself, could I get anyone else who milks for me, to do it?

Dr. Moak—It might not be.

A Delegate—That is a matter of getting the proper help; that is the element that adds to the cost, and it is an important one.

President Frelinghuysen—If there are no further questions to ask of the doctor, Mr. Chairman, I would suggest this, that a request was made to me at the noon recess to have the Board of Agriculture hear a delegation of cattle dealers from Newark on the subject of the present, I presume, tuberculosis laws. They ask for a hearing, and, personally, I can see no reason why the State Board should not hear what they have to say, in view of the fact that they are discussing this subject.

I think, however, they should confine their discussion to any suggestions or recommendations, and if they have any charges to make against the Commission they should bring the details of those charges and particulars with them and they should be taken up by the Commission. I don't think the State Board of Agriculture is a jury to decide as to whether the Commission has performed its duty or not, but I do think that the State Board of Agriculture is a jury to hear them upon the question of these public matters affecting the farmer as well as the dealer. I move, sir, that they be heard.

This motion was carried.

Dr. Bachman—Mr. President and gentlemen: I was not to be the spokesman in this matter. The veterinarian who should

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have been heard was detained at the very last minute, and the duty to talk was put upon me. The data the talk was to be made from he has, I have not got it.

We spoke to Senator Frelinghuysen in regard to a few little matters, and he asked us for certain data. We were not able to give it, which I am very, very sorry for, which I shall attempt to give at some later date.

The cattle dealer is a brother in business with you as the farmer, you being the producer and the purchaser often of those cattle which he sells. He feels that the business of importing cattle from other States to your State to supply you with that that produces milk, he is with you, but that the business is being erroneously handled. He wishes to incorporate your work with his work for the benefit of legislative conditions. He does not wish to annul the law as it is, he simply wishes to add to the law as it now exists, on certain lines, namely, where the animal is injected with tuberculin, of which he does not make any great cry, he is willing to have it done, but he says to you, "We do not wish to have our good cattle taken away with those that may be proven to be not good. And, should there be a mistake, and none of us are infallible, he wants to know whether he shall be reimbursed for it or not. To me it seems very plain and fair.

I do not see where we are a body of people and citizens that can be compelled to take from another which is right.

Furthermore, he tells you that he does not wish to keep his cattle a great length of time in his barn. He is willing to keep them a certain time. He furthermore wishes that those same cattle shall be tested in this State. He does not think it is fair to test them in another State and bring them in this State, and then probably subject himself to have them removed.

That, Mr. President, is about as far as I can go, as I heard you say you wished me to confine myself to just those things which I know. Not having the proper data, which it was not my part to have, I would hardly care to go further than that for fear that you might ask me for something which I have not got in my possession.

Thank you, gentlemen.

President Frelinghuysen—Doctor, may I ask you one question? Do I understand you to say that you, representing the cattle dealers of Newark and vicinity, are in favor of a law which will test all incoming cattle?

Dr. Bachman—Yes, sir.

President Frelinghuysen—And not allow any other State to test them? To test all the cattle that are imported?

Dr. Bachman—Yes, sir.

President Frelinghuysen—I understand you, I think.

Vice-President Cox—I gather from what you have said that your association would be opposed to the principle of establishing a quarantine against the infection of your cattle?

Dr. Bachman—No, sir.

Vice-President Cox—I gathered that from what you did say.

Dr. Bachman—No, sir. We do not wish to quarantine, but I believe it was stated such quarantine should exist of about six weeks, and that, we claim, is too long for the dealer to hold his cattle. We are willing to keep them a respectable time.

Vice-President Cox—What do you term as a respectable time?

Dr. Bachman—That I am not able to answer for the association. Purely as a veterinarian, I do not know what their views are on that matter.

President Frelinghuysen—Are there any others among the dealers who wish to be heard?

Dr. Bachman—There is a number of them here. Whether they wish to be heard or not I could not say.

President Frelinghuysen—If there are those gentlemen present who desire to express themselves, we would be glad to hear from them. We have just a few minutes that we can devote to this business, and it would be undoubtedly of interest and profit to the farmers of the State, and, perhaps, to the cattle dealers as well.

REPORT ON PRESIDENT'S ADDRESS. 175

If there are no other gentlemen who desire to be heard, Mr. Chairman, I will bring up another matter.

I was authorized to appoint a committee on amending the tuberculosis law, to recommend to the Legislature amendments upon the following subjects:

The branding for tuberculosis.

On the question of the sale of cows at public sale, to be tested before the sale.

On the question of the quarantine of all cattle coming into the State, to be tested before admission.

I appoint on that committee of three: E. T. Gill, Amor J. Gaunt and G. W. Van Horn.

The Committee on the President's Address submitted the following report:

Your Committee appointed to report on the President's address takes pleasure in commending it as an able and instructive paper. The recommendation concerning a department of agriculture, with a commissioner and deputies to be appointed by the State Board, we feel to be a progressive and wise suggestion, but realizing its importance we feel that the matter should receive careful and deliberate study.

We would therefore recommend the appointment of a committee of at least three, who would carefully study the existing conditions, and who, after mature deliberations, would propose a plan for the reorganization of the State Board of Agriculture.

We further recommend that on consultation with the Executive Committee of this Board, as well as with the President of the Agricultural College, and Director of the Experiment Station, this Committee draft a bill as suggested, and use their utmost endeavors to have it become a law.

E. T. GILL,
JOHN G. BORTON,
GEO. L. GILLINGHAM.
Committee.

Vice-President Cox—You have heard the reading of the report of this committee. What is your pleasure?

A Delegate—I move that it be adopted and made a part of the minutes. Carried.

Vice-President Cox—The committee therein suggested will be appointed at the convenience of the President.

Does any member desire to present any resolutions? If there are any, we would like to have them presented to the Board for consideration.

It seems that a very important question was presented to the State Board of Agriculture here yesterday by our friend and co-worker, Dr. Collingwood, of the *Rural New Yorker*, upon the question of parcels post. Perhaps the State Board of Agriculture would like to place itself upon record on this important question. Is there any member present here who has got a resolution to offer or a motion to make endorsing the parcels post and trying to exert our influence in such a manner as would show by our action to our representatives in the National Congress where we stand on this question?

Mr. Hedden—I move that we, the State Board of Agriculture of New Jersey, place ourselves on record as in favor of the enactment of a law providing for a parcels post in this country.

This motion was seconded.

Mr. Tomlinson—Mr. Chairman, this is an important matter. It is something certainly that the people have a right to. The people of this country, a few years ago, when they talked about the rural mail for the country people, looked at it with great doubt. The people of the town, of course, they like to have their mail about every hour, but the country people, what is the use? See what it would cost to get the rural mail to them. The thing was agitated, and it went forward until those in authority found out that it was not safe to oppose it; so it has gone through, and the people are getting some of the benefits of the rural mail.

Now, in regard to this matter of the parcels post, it is being agitated and it has been for the last twenty years. Mr. John Wanamaker, when he was postmaster-general, said there were only, I think, at that time, four arguments against parcels post—that was, the four express companies. I think there are five or six now. They have got so much money, as we heard last night, and as we look into the matter, that they do not know what to do with it; they are ashamed to distribute it; and, in order to distribute that, they issue stocks and bonds and give that money away as profit on those stocks and bonds that they have given away.

Now, this thing is simply ridiculous. I will make this one suggestion here. I heard a man say once in New York, "The

Jerseyman was of no account only to be milked." That is about what they think the country people are for, to be milked. But the country people are getting tired of that thing, and we should let them know it.

We have some rights in this matter, and I suggest that we pass that resolution, and that we do not stop at that. There is one other thing we should do to back that up if we want to do anything, and that is to make our representatives in Congress know that we mean something. We could get up a petition on any subject we are a mind to, and they throw them in the waste-paper basket. That is the way they generally do. But if each one of the members of this Board will send to his representative, his congressman and his senator, saying, "We want parcels post; we don't care about your sending us a few seeds. We can buy our seeds and get such as we want."

I think we believe in parcels post, all of us. Now, we want to make those fellows know that there are some people who do believe in it, and if we send them a personal letter saying we want this thing, we will, I believe, get it. Agitate and agitate and agitate, and let them know we are going to keep it up until we get it. I am against the people that are for controlling the interests of this country and shutting out the people that foot the bills. The fellows who control these matters are perfectly willing that we should step up and do the voting, and then step down and out again until another time when it is time for the suffrage. That is all they want. We want them to know that we are beginning to understand about that thing, and that we propose to have this parcels post. (Applause.)

Mr. Brown—Mr. Chairman, I want to call attention to one thing in regard to this parcels post. It falls on no one but the express companies. They have never attempted to serve the farmer either by calling and getting his packages or delivering them to him. There has never been any attempt made to serve the farmers of this country, and the great body of farmers in this State and this country now will take it in their own hands, and they will make themselves hear as wanting a parcels post. We demand a parcels post.

A Delegate—Mr. Chairman, that is right, we should demand a parcels post, but we will find out that that parcels post for the first year or two will follow the plans laid down by the express companies.

Now, why can't we start it right in the first place?

I think we will find out that after three years it is not exactly what we want. We will find that the express companies got their representatives together and influenced our legislators to make a plan that would still keep most of the money in the express companies' hands and most of the paying in ours. Why can't there be a committee to overlook this form of parcels post as will be applied for. You know, there is almost always a joker in every law that is passed which is supposed in the beginning to be in favor of the farmer; we almost always find that there is a joker comes in.

President Frelinghuysen—Mr. Chairman, I want to raise my voice in support of this resolution.

I believe that with the rural free delivery, the coming of the telephone and many of the other advantages that have been brought to the farmers' doors, that there have been brought more comfort and better facilities, and I believe that this government of ours, the United States Government, should give him the added facility of receiving those packages which he is now compelled to go miles for to an express office.

But I want to say to you that you can pass resolutions, and you can send them to your representatives in Congress, and, as the gentleman has said, they go in the waste-paper basket.

What you want to do is to couple with that resolution a question, and have the Secretary of the State Board address every congressman in this State: "The State Board of Agriculture, in convention assembled, endorses and approves and urges you to vote for a parcels post. Will you vote for it? Answer yes or no."

And then bulletin that to the farmers. (Applause.)

Put them on record, and have that record sent to you.

We have a roster here in the office of the State Board of Agriculture, and we will inform you what their answer will be,

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and if they do not answer, we will inform you of that too, and you can do the rest at home. (Applause.)

Secretary Dye—Mr. Chairman, I am very glad to hear the President put on that last clause; let them answer yes or no. Only the day before yesterday I destroyed the correspondence I received last year on the Potash question from our members of Congress. It had the usual finish, as Collingwood says, "It shall have my consideration." "When the matter comes up for action it shall receive my careful consideration." Now, if we get this other part on, we will have it.

Mr. Hopping—Our County Board of Agriculture went on record last Saturday on a resolution of this nature, and they instructed the Secretary to send the resolution to the members of Congress to the effect that we wanted it, and wanted it badly, right away.

Vice-President Cox—The resolution now before the Board is that the Secretary send such a communication to our representatives in Congress and in the Senate, and ask a reply. Is that supported?

The motion was unanimously carried.

Mr. Van Horn—Mr. President, I have a resolution here which I would read and like to have referred to the Committee on Resolutions:

Resolved, That the present crowded condition of the winter short courses in Agriculture at the State Agricultural College should be relieved by providing a larger building, and that the State Board of Agriculture urge the Legislature to make such a provision.

Mr. Chairman, I think most of us, or all of us, perhaps, know something of the condition of the short courses. That they are the courses in which the young men who come there by the invitation of the State receive an education, but they are so crowded that the teachers cannot give them what they ought to have. And, while this year there are, I think, something like one hundred and thirty, we hope in another year there will be

probably twice that number, and so on from year to year more and more will come, and I think, Mr. President, that we ought to urge our Legislature to make provision to take care of them and give them all the facilities they can to give them a proper education in the matter of agriculture.

Vice-President Cox—If there is no objection, the resolution will be received and referred to the Committee on Resolutions. It seems, although we are a small State, that we are growing larger all the time. They have not room in New Brunswick, and we have not room here. They have not room in the State House for our offices, and we must have more room.

Mr. Reid—In order that there may be no misunderstanding about our position on the parcels post, I make a motion that the Secretary be authorized to address a letter to each Senator and Congressman of New Jersey, stating the action taken here to-day in regard to the parcels post and demand an answer on that question.

This motion was carried.

President Frelinghuysen—I would add to that that the farmers be informed as to what the answers are in a bulletin. Will Mr. Reid add that to his resolution?

Mr. Reid—Yes, sir.

The motion, with this amendment, was unanimously carried.

Vice-President Cox—We are now ready to take up the question of State road problems. The question is to be presented to you by Hon. J. B. R. Smith, Commissioner of Motor Vehicles, one of the men in our State best qualified to discuss this question intelligently. I am delighted to present to you Mr. Smith this afternoon.

Our Road Problems.

BY J. B. R. SMITH.

Our road problems seem almost innumerable. In even the liberal allowance of time at my disposal, I can hardly hope to even enumerate them all, much less consider them each in detail. A scientific classification, however, would arrange them in three groups: the engineering, the economic, and the ethical, and so grouped, I shall consider them.

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All road problems in New Jersey are contemporaneous with the appearance and the development of the automobile. Whatever problems of this kind have existed before the automobile came among us have long before that time been solved. Our engineers had learned how to build roads to suit our use; our economists had found it profitable to build them; our financiers had found ways and means to pay for them; and we ourselves knew how to use our roads without transgressing the rights of each other and without killing and maiming ourselves and our fellow travelers. On our highways we were peaceful and orderly, but in the march of progress the automobile was inevitable. Business and recreation both demanded additional transportation facilities. The horse was too slow and the railroad too immobile. We needed something as speedy as the railroad and as pliable as the horse. No one needed it more than the agriculturist, and eventually no one will use it so much. We could not have stopped its use if we would, and we would not if we could. It came as all our inventions come. Necessity brought it forth, and it will take its place among the greatest of benefactions, but like all great inventions its attendant surprises permanently disarranged the existing order of things.

To restore the old order is impossible. We must meet and orderly adjust the new conditions. This, after all, is no new problem. In this progressive age, such problems are being constantly presented and solved. An intelligent and energetic application of sound fundamental principles will find the correct solution. The same necessity which brings forth the invention will bring forth the adjustment, and those of us who best do our part will most effectually promote this end.

The engineering and the economic problems are very closely related. We may well consider them as one problem, and, at the same time, endeavor to find a solution for both.

Seven years ago the New Jersey highway system was not only the pride of America, but of the world. Our engineers had learned how to build practically indestructible wagon roads. They had then built, of this quality of road, nearly twenty-four hundred miles, more mileage than had been built in all other States combined; and these roads had been laid over a territory comprising less than eight thousand square miles. This mileage has since been increased to approximately three thousand miles, and if these roads were to be reproduced to-day, it would cost over twenty million dollars to do it.

New York or Pennsylvania undertaking to duplicate this system in their own States, each State being six times our own area, would be compelled to spend approximately one hundred and twenty million dollars each; and when any citizen of New Jersey, touring in his automobile through either of these States, finds himself and his legislature criticised for lack of automobile reciprocity, he may well tell his critics that when their State spends approximately the money we have spent for that which makes automobilists happy, we may well consider reciprocal relations, but until then the whole debt is owing to us and not by us.

Up to seven years ago our repair charges had been nominal. Indeed, we then urged and supported our arguments by facts and figures, that improved highways once laid were so much cheaper to maintain than were the old dirt roads, that the saving thereby accomplished in our road tax would be sufficient to redeem our county road bonds at maturity.

But these roads were built to carry horses and wagons, not locomotives, either of large or small size, and with the advent of the motor vehicle deterioration speedily set in. In 1907 our repair charges amounted approximately to \$600,000; in 1908 they had jumped to \$800,000; in 1909, to \$1,000,000; in 1910 to \$1,421,000, and in 1911, on incomplete returns, \$1,565,000. Complete returns will doubtless considerably swell this amount. These charges are all in addition to the amount paid for new road building.

But the worst is yet to come. The roads have deteriorated much more rapidly than they have been repaired, and to-day we are confronted with the fact that this great road system, the pride of New Jersey, is in imminent

danger of being wholly lost; for if heroic measures are not taken, in two years these roads will be well beyond repair. A very conservative estimate is that, even to keep the roads in a passable condition during 1912, it will require an immediate outlay of perhaps \$2,500,000; that to put them in as good shape as they were when built, would cost from \$5,000,000 to \$8,000,000, and even then, we would be compelled to pay annually an increasing sum for maintenance. Indeed, many of our roads cannot be repaired as rapidly as they are being destroyed. It will be observed that the average annual increase in repair charges for the last five years has been approximately twenty-five per cent. If this rate of repair charges should be maintained for the next five years, I estimate that we will have spent, during the ten years next ensuing the passage of the Frelinghuysen automobile bill, over \$25,000,000 for repair charges alone. Are not these figures appalling? Can we stand the expense?

To revert again to my comparison with New York or with Pennsylvania, if either of these States had our system of roads and had our wear and tear, they would each be compelled to go down into their pockets for \$150,000,000 in ten years for repair charges alone, and then would be in the same condition that we are in the end, with the roads in worse condition than they were at the beginning. This is the engineering and the economical road problem presented to us by the automobile.

These conditions are of course unbearable. What then is the remedy? We would not outlaw the automobile, nor can we abandon to their fate our improved highways. Our troubles are not wholly the result of automobile traffic, for motor vehicles alone would not cause nearly the trouble. It is the motor vehicle, and the iron-shod horse and iron tire working together. These two methods of transportation cannot be separated except in very small part. Some way must be found to build roads which will accommodate both methods of travel, and such roads must be better built. I think it will be universally agreed that macadam has proven a failure. The shore gravel roads, where the gravel is easily available, are not only cheaper in construction, but much more durable. Then too, something more is needed in many parts of the State; a dustless as well as a permanent road must be made. The unfortunate experience with resilient binders in many sections of the State has been discouraging to many people who fondly hoped that by the use of this binder the road problem had been solved. There are, however, resilient binders in use which have proven eminently satisfactory and show every evidence of wearing indefinitely, but experience alone will demonstrate with reasonable exactness the actual duration, and there are roads where even such binder is inadequate. Many of our roads must be reconstructed, either with bitulithic, wood block, or some other form of permanent dustless pavement. They must also be made with a deeper foundation, a broader surface, and some at least should probably have a soft earth road alongside the pavement.

The engineering problem can be solved. The Romans two thousand years ago built permanent roads, and we can do the same to-day. The expense will be very great, but this too must be met. How can it be done in the least burdensome and most economical way? The money cannot all be raised at a single tax levy, and to go on and on temporizing, as we have been doing, spells ruin both to the roads and the taxpayers. We must meet the question as it presents itself. We must build permanent roads, suited to the demands of to-day. They must be built without unnecessary burden to either the taxpayer or the motorist, and they should be built without delay.

Colonel Gilkyson, who justly ranks among the world's greatest road builders, more than a year ago developed a plan which I believe will substantially solve the problem.

Colonel Gilkyson's plan is this. Improved highways shall be divided into two groups: State highways, and county and municipal highways. The roads upon which there is the greatest amount of motor vehicle traffic, particularly by non-resident motorists, which will be found to be the main

arteries of travel, and which will aggregate from 1,000 to 1,500 miles in length, shall eventually be set apart as State highways, to be rebuilt and thereafter maintained by the State and the automobilists. The remaining improved highways, amounting to about 1,500 miles, together with the new roads yet to be built either with or without State aid, and which it is estimated will amount to about 1,500 additional miles, shall remain county and municipal highways, to be wholly maintained by the respective counties or municipalities. This arrangement will relieve the counties and municipalities of the burden of caring for the roads upon which the automobile wear and tear is the greatest. It is roughly estimated that of the 3,000 miles, the repair charges on the 1,500 miles which would eventually be assumed by the State, would be equal to at least three-fourths, if not five-sixths, of the whole repair charges; so that if the repair charges this year be \$2,500,000, the amount which the State and the automobilists would have to bear would be at least \$1,900,000, while that which the county and municipalities must assume would be not more than \$600,000, a sum which will suffice to keep these roads as good as new, and will increase only as the mileage increases. Inasmuch as under the present plan the counties would assume the entire burden less about \$400,000 paid by the auto license fees, the actual saving to the counties would be about \$1,500,000. Furthermore, this latter sum will not be likely to rapidly increase; it would constitute a burden which the counties would not find it hard to bear.

But how are the State and the motorists to carry this load? The motorists, I think, quite generally expect to be called upon and are willing to pay a larger share. This year, at the present rate of licenses, we may reasonably expect approximately \$400,000 from automobilists. If the rates be increased fifty per cent. the amount this year would be \$600,000, which would annually increase at the ratio of from fifteen to twenty-five per cent. If the rate should be doubled, the revenue received would be \$800,000, with the same ratio of annual increase. But the repair charges of the roads so set off as State roads, even if repaired in the present indifferent manner, cannot be expected this year to be less than \$1,900,000, with an annual increase of at least twenty-five per cent. This would mean, though automobile license fees be doubled, the Legislature would be compelled to appropriate, this year, at least \$1,100,000 for repair charges alone, an amount equal to almost one-fifth of the entire expenses of our State government—an unthinkable amount, unless we are either to deprive our school fund of a part of the benefit of our railroad taxation, or to revert to a direct tax. Furthermore, this amount would annually increase by the annual rate of increase in road depreciation. It is, however, estimated that for \$10,000,000 the roads so designated could in from three to five years be rebuilt, not merely repaired, but rebuilt in such a manner that their annual depreciation would be nominal. It is believed that for this sum the entire system of State roads could be rebuilt, some with gravel, some with permanent resilient binder, and some with even more durable pavement, but all in such a way that a minimum repair charge would indefinitely keep them as good as new. The old saying, "A stitch in time saves nine," applies with especial force in this instance.

But this \$10,000,000 is available only through a bond issue. Will New Jersey consent to a bond issue? We have so long been free of a State debt that it will doubtless offend our State pride. But our State pride must be offended in some way. Either we must lose our prominence as road builders or we must rebuild our roads. To properly rebuild our roads, we must sell bonds. But in this case, we can not only issue the necessary bonds and redeem them at maturity without imposing any greater burden upon the motorists than they would carry in any event, but would actually relieve the State of assuming any additional burden.

How can this be done? I have just shown what the automobilists will probably contribute to the temporary repair fund. This sum will be sufficient not only to pay the interest on the \$10,000,000 bond issue, but to create a sinking fund sufficient to retire all these bonds in thirty years, and in

addition, to supply a fund adequate in the opinion of competent road builders with whom I have talked, to make the necessary repairs on this system sufficient to keep it with the present method of use in constant repair; that at the end of thirty years the roads would still be as good as when first built. By making such a bond issue, we would not only receive for ourselves and our automobilists practically at once the benefits of the rebuilt roads, but will be imposing no greater burden on motorists than they will bear in any event; will not add to our State financial burden, will relieve the counties and municipalities of a large part of their tax for maintenance of lateral roads now built and yet to be built by the counties either by their own efforts or through aid from the State. We will be going further than this; we will preserve our pre-eminence among the States of our country and of the world as advanced road builders, a distinction of which I am sure we would all be justly proud. Can we, can the motorists afford not to avail themselves of the undoubted benefits of such a bond issue? By adopting this plan will we not solve our engineering and our economic road problem? The only objection I have yet heard is will we not soon find ourselves where we were when the automobile came among us. Will not something else soon come to destroy our automobile roads, as the automobile destroyed our wagon roads? My answer is that that will present another problem to be met as we are meeting this one. Let the destroyer pay the damage, but make, if possible, the burden as easy for him to bear as we now make the present burden easy for the motorist to bear. As we before built our good wagon roads, let us now build good automobile roads, and when another demand is made upon us, let us find ways of meeting it, as we have found ways of meeting those already present.

Time will not allow me to discuss the different methods of road building and road repair at length. In general, I will say that in my opinion only reasonably permanent roads, reasonably adapted to indefinitely withstand the traffic to which they are subjected, should be built at any time or in any place. In repairing, the patrol system has been found the most economical and should be generally adopted, but it must not be understood that even this system will greatly reduce the cost of maintenance of roads built and used as many of ours now are. Nothing short of roads rebuilt to meet the increased demands will suffice. The patrol system will then be found to work well.

Let us now consider and undertake to solve the ethical road problem which, as I have already intimated, is like the engineering and economic problem, contemporaneous with the advent of the automobile. What duties do we owe fellow travelers? What are the proper rules of the road? What is the proper code of highway ethics? All this was settled before we began to use motor vehicles. Now all is unsettled. Motorists claim the right to use a code of their own. Non-motorists view their own and all motorists' rights and duties in different lights. Far too many of each class is trying to gain some selfish advantage. It is the old problem of human nature always selfish and always first trying to secure one's own happiness at the expense of rather than by promoting the happiness of others, only eventually learning that one's own happiness is best promoted by promoting the happiness of others. It is not a manifestation of inherent vice, but rather of inherent ignorance. We learn by experience how to obtain happiness. We learn by the same experience our duty. Experience taught us both happiness and duty on our highways before the automobile came. Experience will both teach us our duty and bring us happiness in using the automobile. We indeed are rapidly learning, though our patience is often nearly exhausted.

The ethical problem as it presents itself in New Jersey to-day seems to be divided into the duty of road users, rights of road users, to which may be added the rights of and our duty to our non-resident tourists. Perhaps the first duty of road users is to obey the rules of the road. But what are the rules of the road? Before the autoists came we quite well understood. We knew that when two vehicles met each other each must turn to the right, so that they might pass each other without interference. We knew that

when one vehicle overtook another that the vehicle being overtaken must make way for the overtaking vehicle. We knew that we must not interfere with another traveler's equal right, and beyond that we could pursue our journey as best suited our pleasure. We did not know, nor was it material that we should know, that in this case also the vehicle being overtaken must turn to the right, yet such was the law and had been in New Jersey since 1813. The fact that we did not know it was simply because the knowledge was of no use to us. It was just as well that the vehicle being overtaken should turn to the left as to the right. No harm could come from it, and legislative acts are not law until there is a reason, until custom demands their enactment, no matter how much they may assume the language of law.

With the advent of the automobile this was immediately changed, and the law which had remained a dead letter since 1813 was immediately galvanized into life.

We knew also how fast we might travel, either with horse or on foot, without interfering with the rights of others, but this knowledge did not serve us in using automobiles. The automobile injected so many new features, was capable of such tremendous speed, was so immediately responsive to the will of the driver, was so powerful and so dangerous in the hands of a careless or thoughtless operator that both those who drive and those who regulate the driving of automobiles are at a loss to know just where rights end and where duties begin. And here I shall probably offend the judgment of many well-meaning men when I say that perhaps no single thing has conduced to more trouble in this respect than maximum speed limits. While it is the law that no speed shall be maintained at any time that will endanger limb or property or interfere with the rights of others, yet that feature remains a complete dead letter entirely submerged by the maximum limits. Drivers, policemen and the public generally believe that a driver is always within his rights when he is within the maximum limits. This fact enables the driver to take many unjustified liberties, to transgress the rights of individuals.

For instance, a street where the maximum limit is eight and a half miles an hour is densely crowded, pedestrians and vehicles closely jostling each other. An automobile comes through the crowd within the limit, but blowing its horn—perhaps a siren whistle—an imperative command to everybody to get out of the way. Pedestrians hustle and horse-drawn vehicles make way, and the automobile passes, the driver believing himself wholly within his rights and an exceedingly careful driver, because he caused no accident. Of course, he caused no accident, because the people got out of his way, but they felt that their rights had been imposed upon. They felt that they had been injured, perhaps insulted, and they promptly laid up in their hearts a grudge not only against that particular driver, but against the automobile fraternity at large which they determine to pay at the first and at every subsequent opportunity.

One of the principal efforts of our department is to educate drivers that it is their business to respect the rights of others, even though it be necessary, as it frequently is, to bring their machine to a full stop. In this effort we are constantly meeting with the unanswerable argument that unreasonable maximum limits fixed in the law, which, if enforced, compels the motorist, in certain cases, to drive at an unreasonably slow rate, should at the same time allow him to maintain that rate even though under other conditions that rate be unreasonably rapid.

Another duty of great importance, and one about which far too little has been said, is the duty which the motorist owes the public on muddy streets. Many good clothes have been ruined through the thoughtlessness and the carelessness of motorists in driving rapidly through muddy pools of water adjacent to curbs or crossings. Likewise, while driving in the dust, motorists are equally thoughtless of the annoyance and suffering they cause by rapid driving in the neighborhood of others on the dusty roads. While, of course, it is impossible to prevent wholly at certain seasons and on certain roads, the formation of dust, yet a due consideration of the rights of others places an ethical duty on the motorist which he far too often neglects.

Next is the duty the motorist owes both himself and the public on slippery roads. The public danger growing out of motor skidding has already cost several lives in this State. The use of automobiles, except at a very slow rate of speed, and then the highest degree of protection during such weather conditions as we are just now passing through, is exceedingly dangerous, not only to the driver but to the public.

And now I want to discuss one of the greatest duties of a driver; that is, to avoid intoxication. I am not here to preach a temperance sermon. I am here to preach the doctrine of sobriety while using automobiles. More breaches of duty, more accidents from automobiles result from the use of liquor than perhaps all other causes combined; and, paradoxical as it may seem, the driver who has just taken a few drinks, who vigorously disavows intoxication, is more likely to be a dangerous driver than the one who has drunk to stupefaction. The effect of the few drinks on the average brain is to stimulate, to exhilarate, to make reckless. I am now going to propose an ethical rule which on several previous occasions has brought me into disfavor, and, I fear, ridicule, but one to which I still firmly adhere; and that is that no man should undertake to run an automobile within two hours after he has taken one drink of ordinarily intoxicating liquor. I know that no hard and fast rule regarding the amount of liquor necessary to exhilarate can be made, but total abstinence while driving seems to me imperative.

These, of course, are only a few of the duties of those who use automobiles. We could continue on this line almost indefinitely. The question which most men ask us is who prescribes these duties. What law, or what Legislature has made them? Are they indeed laws to be obeyed? No legislative enactment can be made sufficiently general, sufficiently comprehensive to include them all. No executive power could administer such a law. The true law of duty cannot be written in books. It becomes a part of each one's life. There is just one rule that I know which may safely measure our conduct toward others. This rule I invariably urge all road users to adopt. Never ask yourself what your rights are. Do not consider what duty another owes to you under the given conditions. Consider only your duty to others. Consider what you would expect from the other if you were in his place and he in yours. The Golden Rule only states this thought in other language. This is by no means a difficult task. The mental processes necessary to do this are no more complicated than are those necessary to enable us to ask ourselves, "Have I a right to go this fast or do that act?" "Do I not have the right to force this man or that wagon to get out of my way?" Could those who drive automobiles all understand their duty as autoists as they understand their duty as citizens; could they more generally apply this rule, the troubles of the Department of Motor Vehicles would be well nigh ended.

But this is wholly a matter of education. They must learn this by the same methods that they learn anything else. Education is the process of acquiring knowledge, not a process of coercion, of forcing, of dictation. We cannot make people do right until they understand not only what right doing is, but the advantages to be gained for themselves by right doing. Instead, then, of abuse, and of bitterness, let us approach the task in a spirit of friendship and a desire to benefit. Let us not approach the subject with the assumption that everybody is endowed with infinite knowledge and infinite discretion regarding it, but that all, even the best of us, have something to learn. Let us systematically organize for this campaign of education.

When the Department of Motor Vehicles was first created, I found a very active and efficient organization of State clubs exerting an exceedingly beneficent influence over its members. Unfortunately, the management of that organization has lapsed into a propaganda for the promotion of races, of long distance touring, and of abuse of New Jersey citizens and New Jersey legislatures, because they refuse to be coerced into seeing their duty regarding non-resident motorists in the same light in which the promoters of that organization see it. So that now we have in New Jersey only three militant organizations—the New Jersey Automobile and Motor Club of Newark, the Trenton Club, and the Camden Club exerting this influence.

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I am now going to suggest the advisability of some provision, if necessary, with legislative sanction, if not for the organization, at least for the encouragement of motoring clubs, having for their fundamental, not their collateral purpose, the promotion of motoring ethics. In this work, I know of no body more potential for good than the State Agricultural Society and the State Grange. No organization is more vitally interested, no organization better fitted by intelligence and breadth of view to aid in this work. I would greatly appreciate it if official action looking to a high standard of road ethics could be taken at this session.

And now, what are the rights of motorists or the duties which other road users owe to motorists? I cannot elaborate at length on this subject. Briefly stated, they owe to motorists the same duties which motorists owe to them. As it is the duty of the motorists to keep out of the rightful way of other road users, it is the duty of other road users to keep out of the rightful way of motorists. The driver of a dray or of a wagon loaded with hay has no more right to impede the passage of an automobile than the driver of an automobile has to force into the gutter the pedestrian or the driver of a light wagon. Both are manifestations of might rather than of right. The driver of horses or the pedestrian must not assume that because the motorist was the last to become a road user, he is not rightfully on the roads. By the same token that the horse and wagon acquired an equal right with the pedestrian, the motorist acquired an equal right with each; and as the road broadened from the foot-path of the primitive pedestrian into the well-worked highway to make room for both the pedestrian and the horse and wagon, so the road must now again broaden to make way not only for the pedestrian and the horse and wagon, but for the motor vehicle as well.

Perhaps the most discussed, though by far from the most important road problem, is that relating to the rights of and our duty toward non-resident road users, which, of course, means, in most instances, non-resident motorists. It seems to me that we owe them two specific duties. The first, the political duty of treating non-residents under our constitution exactly the same as we treat our residents. To do either more or less would be unconstitutional and morally wrong. I do not believe that the severest critic will undertake to charge that we have in any way applied a different, harsher, or milder rule in dealing with non-residents than we have applied in dealing with resident motorists; and any State which has done, or should do so, would be acting unconstitutionally. The other duty is the duty of neighborly courtesy, subordinate in all respects to the political duty. In this I believe it can be safely asserted that we have gone to the extreme limit of friendliness. We have extended to non-residents every facility for easy and speedy registration, for freedom from petty police annoyances in travel, the use of the finest system of highways in America, and many other courtesies, all without expense of any sort. The return we have received has been criticism and abuse of the most unbecoming and unwarranted nature. Not being satisfied with our splendid roads, something about which I have before shown you the cost of maintaining, not being satisfied with our admirable laws which protected the rights of all users of the highway so that persons touring in the State in an orderly manner have been practically free from the petty annoyances of the inadequate police systems of all our neighboring States, not being satisfied with our elaborate and convenient system of registration, far surpassing not only that of any other State, but all other States combined, we are continually being assailed for not having gone further. We are being assailed for not having unconstitutionally extended to our neighbors privileges which we cannot extend to our own motorists. And before I go further, I want to do non-resident motorists the justice of saying that they do not understand the true situation, that they are being blindly led by a dictatorial, domineering coterie of self-appointed gentlemen, who have openly and repeatedly, often in my presence, declared that unless New Jersey adopts such measures as they dictated without reference to the effect of such measures on our people and

our motorists, they would continue to assail us without regard to the justice of their charges. Of course, our answer to such men must be that they shall do, if they will, their worst. We cannot and will not be coerced in the doing of a single act. They have claimed that their policy should be adopted because it was a policy of reciprocity.

Let us for a few moments examine what reciprocity is, and determine whether or not their policy could not rather be designated as a policy of retaliation, hatred and revenge, a policy directly opposed to reciprocity. Let it be understood, once and for all, that New Jersey wants reciprocity; wants it worse than any other State can possibly want it, because it has more to give and is desirous of having something in return.

Reciprocity means giving as well as receiving. We cannot reciprocate unless some one gives us something. How can New Jersey reciprocate with Pennsylvania, for instance, in matters of road use? Pennsylvania, with her inadequate public highway system, with her toll-road system covering a very large area of the most traveled portions of the State, with her abominable methods of administering automobile laws, with her almost continuous system of speed traps and her vicious and ignorant police officers and magistrates, is in poor shape indeed to undertake to dictate to New Jersey on any subject touching reciprocity in the use of public highways. When Pennsylvania can offer us something in exchange for what we give them, when they will put themselves in a position where they can reciprocate, it will then be time to talk about reciprocity. Until then, we are giving everything; we are receiving nothing. The criticism from Pennsylvania of our policy is contemptible indeed. What is true of Pennsylvania is only true in a less degree of all the other States. But it is said by many thoughtless persons that notwithstanding what we have done, we should still be neighborly; that notwithstanding that we have done all these things, inasmuch as our neighbors think that we ought to do more, a spirit of hospitality would indicate that we should do more.

If that should be the policy adopted, I shall not object. But let it be known by its true name. Give us at least credit for pursuing an altruistic policy. Do not ask us to be altruists and at the same time try to make us and the world believe that we are only pursuing a reciprocal policy.

And now let us examine for a few moments what reciprocity is. You will first note that it is the antithesis of altruism. It is purely selfish. It has every element of barter. 'It says, I have something which you want as much or more than I, which I will give you in exchange for something which you have and which I want as much or more than you do. What State or nation ever engaged in reciprocal relations or made reciprocal treaties where they did not at least believe that it was to their own personal interest to do so? Whoever heard of a State doing something that it believed would be to its own disadvantage, simply because another State wanted it done. Of course, the idea is preposterous, and yet it is exactly what non-resident automobilists are asking us to do; are charging us with opposition to reciprocity because we are unwilling to do it. The charge is unjust, unfounded, malicious, and no one knows it better than the intelligent but insincere members of the propaganda to which I have just referred, who are insisting that it shall be adopted.

Furthermore, the whole history of reciprocal legislation in New Jersey clearly establishes the view I have just taken. Farmers will remember the policy for years of our neighboring States in refusing to admit, without the health tests, cattle from our own State, while we were admitting such cattle with little or no restrictions. The reason for it was that they did not want our cattle, while we did want theirs; and only last year we concluded that our policy in this respect was not worth the price we were paying; and we are now treating for the first time cattle from other States in the same manner in which the laws of other States for a long time have been treating cattle from our State.

Likewise our corporation laws. For matters of public policy, we found it

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to our advantage to admit with few questions and few restrictions the corporations organized under the laws of other States to do business in New Jersey; whereas the other States held that their advantage lay in pursuing the opposite policy, and, accordingly, New Jersey corporations have continually been subjected to embarrassments and restrictions both troublesome and expensive. Accordingly, no reciprocity between States on the corporation subject.

Again, for years, it has been to the advantage of New York to admit lawyers residing in New Jersey to practice in their courts on easy terms, and to impose hard terms upon New Jersey physicians who likewise desire to practice their profession in that State, while just the opposite condition has maintained in New Jersey. We do not want the New York lawyers. We do want the New York physicians, and have accordingly shaped our public policy to that end. No reciprocity between the two States on lawyers; no reciprocity on physicians.

These are only a few of the instances of many which might be cited to show that no State ever engages in reciprocal relations with another unless it is at least believed to be to their interest to do so. New Jersey has so much to give that she is extremely anxious that the other States procure something to give in return; she is extremely anxious for true reciprocity. Why, then, should we be held up to ridicule for doing that which we honestly believe would not be to our benefit. I wish I could talk all the afternoon on this subject. My heart is full of it. I most earnestly desire reciprocity, but I desire it with honor. I desire reciprocity which will bring something to New Jersey as well as give something, but I cannot and will not consent to lend my support to any false notion or false doctrine, simply because a few designing men, through the publicity agencies which they possess, have impressed upon a large number of people the idea that their policy comprehends true reciprocal relations. Their policy and true reciprocal relations are as far apart as the two poles.

But there is something which we can do which to my mind will pave the way for the accomplishment of true reciprocal relations. We can adopt a policy which will be so generous, so comprehensive, so efficient, that it will become the model for other States, whereupon reciprocal relations can be forthwith easily established. I have not time to outline this policy except in the briefest manner. It is, briefly speaking, increased automobile license fees, as I have before indicated, at least fifty, perhaps one hundred per cent.; universal automatic registration, and universal power of revocation, automatic registration which would, upon the necessary reciprocal laws being adopted, enable the person registering in one State to thereby register in all States through which he may desire to travel, thus submitting himself to the jurisdiction of such States, and which stated he would indicate at the time of registration. He would then be registered and subject to the jurisdiction of all States through which he traveled without the necessary trouble of registering in each separate State. This would be true reciprocity. In exchange for this we could well afford to give that which is so much desired and which is the only thing which we now receive from other States which we do not give—free privileges for a limited time, say ten or at most fifteen days. To do this would only be to sacrifice the revenues that we now receive from our eight-day licenses aggregating not more than fifteen thousand dollars, and we would receive in exchange for this sacrifice an increased revenue from non-residents who take out regular licenses of fifty per cent., or according to my calculation, an amount which this year would be probably in the neighborhood of \$90,000. We would sacrifice thereby fifteen thousand and gain ninety. As a financial proposition, this seems sound. As a practical proposition, it would relieve the legislature of the embarrassment of a contest. Does it not fulfill all the obligations of honor and constitutional requirement? Does it not give all that the most zealous free privilege man can or does honestly ask for? Would it not be an easy way for obtaining the additional revenue of which we are so much in need? Does it not conserve all the best interests of our State and its citizens? Would it not

place New Jersey's position still higher in the scale of right? Would it not make her position as the most progressive, the most liberal, most generous of all States, invincible?

President Frelinghuysen—Mr. Chairman, there is some unfinished business that I would like to have transacted.

First, your Chairman, by reason of a recent resolution, is required to appoint a committee of three to carefully consider the existing conditions, and, after mature deliberation, recommend a plan for the reorganization of the State Board of Agriculture. Said committee to consult with the Executive Committee of the State Board and the President of the Agricultural College and the Director of the Experiment Station.

By reason of the authority vested in me, I appoint William T. Reid, of Monmouth county, Walter Haines, of Mercer county, and George B. Randolph, of Somerset county, on that committee.

Yesterday there was some discussion regarding the Land and Irrigation Exposition, and Mr. Collins moved that it was the sense of this meeting that New Jersey be represented at the next Land and Irrigation Exposition in New York.

Another motion was made that a committee of one member from each county be appointed to co-operate with a member at large, appointed as the head, to collect, assemble, prepare by growing and getting ready exhibits to be grown, etc., for exhibition at the Land and Irrigation Exposition.

Now, I am ready to appoint that committee, but I want to call your attention to the fact that the committee at large has not been appointed, and to put this in an orderly manner you should, at least, appoint the committee at large.

A Delegate—How about the Executive Committee; the officers and Executive Committee, and then one member from each county?

Vice-President Cox—What is the pleasure of the Board?

Mr. Reid—I move that that be the course; that the committee on this matter be the officers and the Executive Committee, to be supplemented by one member from each county, as a committee at large.

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This motion was carried.

President Frelinghuysen—On that committee I appoint the following members:

EXPOSITION COMMITTEE.

1. Atlantic county—Henry Pfeiffer.
2. Burlington county—D. C. Ballinger.
3. Cumberland county—Frank O. Ware.
4. Somerset county—A. G. Van Nest.
5. Essex county—A. W. Fund.
6. Mercer county—Ellsworth Haines.
7. Middlesex county—Walter Havens.
8. Camden county—Harry Huff.
9. Cape May county—Ralph Schellinger.
10. Gloucester county—T. Woodwyne.
11. Ocean county—C. M. Rorer.
12. Union county—E. R. Collins.
13. Warren county—J. I. Cooke.
14. Sussex county—J. W. Van Horn.
15. Passaic county—Frank T. Torbett.
16. Morris county—Edgar C. Hopping.
17. Bergen county—Arthur Lozier.
18. Hunterdon county—John Q. Holcombe.
19. Salem county—Maxwell Buzby.
20. Monmouth county—D. Howard Jones.
21. Hudson county—Edwin Radford, Jersey City, N. J.

President Frelinghuysen—I now move you, Mr. Chairman, that a vote of thanks be extended to the Motor Vehicle Commissioner, Mr. Smith, for his excellent and able address, which will stand for a classic in this State, I know, for time to come.

This motion was carried.

Secretary Dye—Mr. Chairman, I would like to ask the Commissioner: is there any way of withholding or revoking the commission of a man who is guilty of intoxication or who is otherwise grossly negligent?

Mr. Smith—There is a way of revoking or withholding, and, in addition to that, it is a misdemeanor; anyone driving a motor vehicle while in an intoxicated condition is liable to indictment on a charge of misdemeanor.

Unfortunately, however, we have been unable to get our grand juries to the point in very many instances where they would consent to indict on that charge alone unless an accident results in addition. They seem to feel that they are not warranted in

bringing an indictment merely on proof of intoxication unless it results in an accident. We are not yet up to the point where we are any of us, I think, capable of seeing the real gravity that is connected with its influence. The moral sentiment of our communities, our own moral sentiment has not been aroused in a sufficient degree to deal, I think, conservatively and justly and, at the same time, liberally, with such a question.

Secretary Dye—I feel that we have a few joy riders in this town yet, and I have no doubt there are in other towns, who are apt to invite young people of a similar disposition to take a ride at midnight, or almost any other time, and are risking the lives of the whole bunch, as we have had an experience here just lately, and if there is any way of putting a restraint on that sort of business, I hope we may do it.

Mr. Smith—That is just the point I want to bring out in discussing the matter of education. The police force, even though they are equipped, as they are not equipped, and as we cannot hope they shall be equipped for some time to come, because they do not know how to handle the questions which come up. The thing we need is education, training, a better knowledge of what our rights and what our duties are, and then we will, perhaps, get at it better.

Your Secretary said that there were still a few joy riders left. I think I am almost justified in saying that there is not only a few, but that there are many, and the number is actually increasing. I think it is due to the fact of the want of certain educational influences which existed when I first took office. I wish there could be something done to take the place of this force which does not now exist. Clubs at one time exercised their beneficent influences. At the present time, with the exception of three clubs I have in mind, I do not think any effort is being made to organize motorists in that line.

A Delegate—Is there anything in the law governing the way of taxing automobiles according to horse-power and weight, as they are in other countries? In other countries they tax them by the weight, the heavy ones bear the largest share because they do the most damage to the roads.

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Mr. Smith—I think the question the gentleman wants to ask is if there is any way of taxing with reference to weight. The present method is to fix the license fee wholly upon the horse-power; and I think the gentleman wants to bring out the point that the horsepower combined with the actual weight should be taken into consideration.

The Delegate—That is what I meant.

Mr. Smith—There is no way at present of taking that matter of weight into consideration.

The Delegate—Those large ones wear out the roads much worse than the others.

Mr. Smith—So far as the heavier ones are of heavier horse-power that would be taxed, but there are many cars of heavy weight, slow-moving vehicles of the trade class, that are very destructive of the roads.

The Delegate—Do you tax them any more?

Mr. Smith—No; they are admitted solely on the horse-power, and, of course, in those cases the horse-power is low in proportion to the actual weight.

The Delegate—Is it not a fact that in other countries they tax those heavy machines which tear the roads up much more?

Mr. Smith—There are some countries, I am told, not all, that actually do take into consideration weight along with the power, but in this country, I think, there are no States that have yet adopted that rule.

I may say, for the benefit of the Board, that there are some experts figuring on that for our own State now with the idea of submitting it in a bill to the Legislature. Just what progress they are making I don't know. I asked some gentlemen to undertake to work out a scientific plan embodying that scheme, but they have not reported to me yet, and I don't know what they have determined.

The Delegate—Why isn't that entirely fair? The weight adds to the trouble. Why isn't that the practical way of getting at it? Taking the weight and the expense of the automobile, can

you tell us what proportion of the road tax it ought to pay; I mean going through the whole expense?

Mr. Smith—I don't quite understand that. The motor vehicles paid last year through their license registrations and fines and penalties approximately three hundred and twenty-five thousand dollars, out of the fiscal year, the last fiscal year ending November first. And, as I showed you, the year before that the repair charges amounted to \$1,424,000. Are those the figures which you wanted?

Now, of course, in addition to that, the automobilists claim that they pay as citizens of the State their regular property tax; in some localities, of course, automobiles are actually taxed as personal property, and in some others, I am told, that tax is merely nominal.

The Delegate—That raises the question, then; you say there is not one farmer in fifty, or even in a hundred, that rides one, and they are required to keep up this expense, either one way or another, for one man out of fifty, and when they make a road, a wagon road, that can be kept in repair in our section for twenty-five dollars a mile, and with the automobile it costs fifty dollars a mile. We do not object to that, but when it comes to the other ones taxing us, they have got the taxes in our place so that they have increased the tax on every farm, and they are like a mortgage on every farm; it is like a mortgage on every farm in my county of over a thousand dollars, in that way, that the tax amounts to the interest on that amount, and as long as those farms exist those farms in our counties are taxed for the extra roads, the road tax is so much, and of course, the school tax in proportion, and then there are all the other items.

Vice-President Cox—We will now take up the consideration of the next matter on the program, the report of the State Entomologist, by Dr. John B. Smith. This report will be presented and read by Harry B. Weiss, Dr. Smith's assistant.

Mr. Weiss—I have here two reports from Dr. John B. Smith, one is his report as State Entomologist, and the other is his report on the bee industry.

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Report of the State Entomologist.

BY JOHN B. SMITH, SC. D.

A very decided change in the administration and routine of the office work has taken place since my previous report. By making an emergency appropriation of \$2,000 additional available during the danger season, it was given a feeling of confidence that has permitted the engagement of a second man capable of recognizing the first signs of danger and of checking distribution of dangerous material at the start.

Subsequent to the report submitted at the meeting of January 19th, 1911, the following certificates of inspection were issued, making a total of 111 for the season of 1910.

No. 107. Alfred J. Kull, Far Hills (dealer).

No. 108. Wm. L. Ewing, Fishing Creek (blackberry).

No. 109. J. E. Kuhns, Cliffwood (strawberry).

No. 110. Ira B. Yawger, Lebanon (peach).

No. 111. Warren Shinn, Woodbury (dealer).

The observations of the foreign nurserymen were continued and their stock was kept under such scrutiny as was possible through the U. S. Department of Agriculture and through the machinery of the New York Board. Some notices of importations to the Port of Philadelphia also reached me and a few loads of stock were consigned to Newark in bond.

Quite a point was made early in 1911 to visit some of the private estates where heavy importations had been made during the preceding winter and, besides spending a day on the Duke grounds at and near Somerville myself, I had Mr. Weiss spend a week there in collecting. As it happened, nothing unsatisfactory developed. The plants were well bought, in the first place, were carefully inspected before being set out, in the second, and had been kept under almost continuous observation since, so that such insects as did develop were readily noted and dealt with.

All the ordinary scale insects were found, and most of these are well established with us and the usual run of occasional *Liparid* and *Bombycid* cocoon was soon discovered. There was no further appearance of *Liparis* or *Dasychyria*, and no traces near the points where the infestation had been reported last year. Inspections made in previously reported danger areas were all negative in result.

During the early part of the year much time was devoted to the shade-tree problem and to the matter of helping out commissions and authorities who had been intrusted with work of which they had really very little practical conception; but this also gradually worked itself down satisfactorily as the various municipalities became organized for the work they finally undertook. This work, in relation to the elm-leaf beetle, is more specifically referred to in the report of the Entomologist of the Experiment Station.

The examinations for the early part of the season of 1911 were made by Mr. Edgar L. Dickerson, but he accepted the offer of a teaching position in Newark during the early summer, and thereafter I associated with him in later inspections Mr. Harry B. Weiss, who gradually took charge of the entire work, as my failing health made it necessary for me to cut out the inspections and examinations heretofore exclusively made by me.

Mr. Harry B. Weiss was duly appointed by the Executive Committee of the Board, after examination and certification by the Civil Service Commission, as a special assistant, beginning March 1st, 1911, and was assigned by me to the examination of imported greenhouse plants and the study of imported greenhouse insects, chiefly in some of the localities in Burlington county. Mr. Weiss's preliminary studies and abilities had especially qualified him for that work, and the material gathered by him has proved very valuable and will prove very useful in constructive work when we are ready for it.

The heavy end of the information obtained, however, was concerning those insects that were constantly coming in from foreign countries and were not establishing themselves as notable out-door pests. This is a line of work not yet done in New Jersey, nor satisfactorily anywhere in the United States, and it was my intention to let Mr. Weiss specialize here, while keeping him in reserve in a strategic position where he could keep a close watch on importations and could recognize danger-points as soon as they developed.

As soon as Mr. Dickerson's plans matured, and his resignation, to take effect August 31st, was handed in, Mr. Weiss was advanced by the vote of the Executive Committee and by the Civil Service Commission to Mr. Dickerson's position, and since September 1st, 1911, has held the position and performed the duties of that office.

His attachment to this work is rather more close than Mr. Dickerson's ever was, because the latter grew into it gradually from the office work of the Entomologist of the Experiment Station and Mr. Weiss started at it directly. We have had, in consequence, during the late summer and fall, an unusually close inspection of nursery conditions, and these conditions, I think it is fair to say, are more satisfactory than those of almost any previous year, especially in the conditions of the foreign stock.

So far as routine work goes, the following inspections have been made and the following certificates have been granted in course:

LIST OF CERTIFICATES FOR 1911.

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| No. | 1. Henry A. Dreer, Inc., Riverton (general). |
| " | 2. Bobbink & Atkins, Rutherford (general). |
| " | 3. C. B. Horner & Son, Mount Holly (general). |
| " | 4. J. Murray Bassett, Hammonton (general). |
| " | 5. J. T. Garrison & Sons, Bridgeton (strawberry). |
| " | 6. Mrs. N. P. Creely, Burlington (strawberry). |
| " | 7. R. D. Cole, Bridgeton (general). |
| " | 8. Wm. L. Ewing, Fishing Creek (blackberry). |
| " | 9. John Casazza, Vineland (general). |
| " | 10. Michael N. Borgo, Vineland (general). |
| " | 11. Frank A. Breck, Vineland (privet). |
| " | 12. Victor J. Humbrecht, W. Windsor township (general) |
| " | 13. Charles A. Bennett, Robbinsville (general). |
| " | 14. Theo. A. Ball, Westfield (general). |
| " | 15. K. E. de Waal Malefyt, Ridgewood (general). |
| " | 16. Red Towers Nurseries, Hackensack (general). |
| " | 17. Geo. H. Peterson, Fair Lawn (general). |
| " | 18. Peter Henderson & Co., Jersey City (general). |
| " | 19. W. G. Eisele, West End (general). |
| " | 20. George A. Steele, Eatontown (general). |
| " | 21. John Moore, Little Silver (general). |
| " | 22. Ralston Bros., Allenhurst (general). |
| " | 23. C. W. Schneider, Little Silver (general). |
| " | 24. K. Herman Stoye, Eatontown (general). |
| " | 25. William Rose, Red Bank (general). |
| " | 26. James Ambacher, West End (general). |
| " | 27. T. C. Kevitt, Athenia (general). |
| " | 28. Carlman Ribsam, Trenton (general). |
| " | 29. Willard H. Rogers, Mount Holly (general) |
| " | 30. Arthur J. Collins, Moorestown (general). |
| " | 31. T. E. Steele, Palmyra (general). |
| " | 32. J. T. Lovett, Little Silver (general). |
| " | 33. Wm. C. Evans, Sewell (general). |
| " | 34. Charles A. Baird, Freehold (general). |
| " | 35. S. T. Pullen, Englishtown (peach). |
| " | 36. J. E. Kuhns, Cliffwood (strawberry). |

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- No. 37. Elizabeth Nursery Co., Elizabeth (general).
 " 38. Richard Evans, Wenonah (dealer).
 " 39. S. T. Hillman, West Cape May (dealer).
 " 40. J. F. Noll & Co., Newark (dealer).
 " 41. Samuel Brant, Madison (peach).
 " 42. Jos. H. Black, Son & Co., Hightstown (general).
 " 43. Chas. H. Totty, Madison (greenhouse stock).
 " 44. Alvah L. Reynolds, Madison (shade and ornamental).
 " 45. Charles Black, Hightstown (general).
 " 46. Wm. Henry Maule, Hightstown (dealer).
 " 47. Ellsworth Pedrick, Bridgeton (strawberry).
 " 48. American Nursery Co., formerly F. & F. Nurseries, Springfield
 (general).
 " 49. Hiram T. Jones, Elizabeth (general).
 " 50. D. de Haas, Plainfield (dealer).
 " 51. I. D. Cole & Co., Rutherford (dealer).
 " 52. John F. Randolph, East Rutherford (dealer).
 " 53. Charles L. Stanley, Plainfield (dealer).
 " 54. Wm. W. Lukens, Princeton (dealer).
 " 55. James L. Hall, Farmingdale (dealer).
 " 56. George A. Shultz, Jamesburg (peach).
 " 57. Mrs. W. S. Herzog, Morris Plains (shade and ornamental).
 " 58. Henry E. Burr, East Orange (general).
 " 59. W. A. Manda, Inc., South Orange (general).
 " 60. Samuel E. Blair, Nutley (general).
 " 61. Edwin Allen & Son, New Brunswick (general).
 " 62. W. S. Perry, Delaware (general).
 " 63. Peter Henderson & Co., Jersey City (special).
 " 64. Charles Bird, Arlington (general).
 " 65. J. M. Gerard, Dover (dealer).
 " 66. John Ryan, Basking Ridge (general).
 " 67. P. V. Drake & Co., Hopewell (peach).
 " 68. Wilfred Everingham, Woodsville (peach).
 " 69. North Jersey Nurseries, Springfield (general).
 " 70. Amon Heights Nurseries, Inc., Merchantville (general).
 " 71. J. C. Williams, Montclair (general).
 " 72. A. S. Wallace, Montclair (dealer).
 " 73. Benjamin Connell, Merchantville (dealer).
 " 74. J. H. Lindsley, White House (peach).
 " 75. Isaac Hildabrant, New Germantown (peach).
 " 76. Howard Philhower, Mountainville (peach).
 " 77. Mrs. E. B. Conover, Fairmount (peach).
 " 78. Willard Apgar, Fairmount (peach).
 " 79. James Apgar, Fairmount (peach).
 " 80. John W. Henry, Lebanon (peach).
 " 81. C. A. Conover & Son, Lebanon (peach).
 " 82. Luther A. Apgar, High Bridge (peach).
 " 83. Samuel H. Wilson, Lebanon (peach).
 " 84. Mrs. E. P. McColgan, Red Bank (general).
 " 85. John Bennett, Atlantic Highlands (general).
 " 86. Garfield Williamson, Ridgefield (general).
 " 87. Alfred J. Kull, Far Hills (dealer).
 " 88. J. D. Lindsley, Mendham (peach).
 " 89. James Clinton, Morris Plains (general).
 " 90. Mansfield Eick, Bissell (peach).
 " 91. James H. Vliet, Gladstone (peach).
 " 92. Mathias Fleming, Califon (peach).
 " 93. H. C. Steinhoff, West Norwood (general).
 " 94. David V. Higgins, Ringoes (peach).
 " 95. Cicero Higgins, Ringoes (peach).

- No. 96. Hartung Bros., Jersey City (dealers).
 " 97. Samuel C. De Cou, Moorestown (dealer).
 " 98. John McCleary, Sewell (general).
 " 99. W. H. Forristel, Plainfield (general).
 " 100. Charles Momm, Irvington (general).
 " 101. Frank Lenz, Irvington (general).
 " 102. Wadley Nursery Co., Bound Brook (general).
 " 103. K. M. van Gelderen, Long Branch (general).
 " 104. Max Rumprecht, Fort Lee (general).
 " 105. J. F. Randolph, Rutherford (general).
 " 106. J. H. O'Hagan, Red Bank (dealer).
 " 107. William Bryan, Elberon (dealer).
 " 108. Wm. H. Morgan, Westmont (dealer).
 " 109. Bergenfield Nurseries, Bergenfield (dealer).
 " 110. George W. Bassett, Hammonton (general).
 " 111. Jos. J. Ayars, Williamstown (dealer).
 " 112. Stanton B. Cole, Bridgeton (general).
 " 113. James W. Farley, Fairmount (peach).
 " 114. John Fleming, Califon (peach).
 " 115. Julius Roehrs Co., Rutherford (general).
 " 116. Charles C. Owen Co., Orange (dealer).
 " 117. Vineland Grape Juice Co., Vineland (grape vines).

One of the greatest difficulties that I had met with in the enforcement of the law was that while there was apparently power enough to keep the New Jersey nurseryman in line and to prevent him from illegal shipments of foreign stock, there was really nothing to prevent the freight or express agent from accepting for delivery within this State or from passing through this State, stock certified or uncertified, at pleasure. This condition of affairs seemed intolerable, especially in view of the rising tide of incoming foreign stock, and the matter was presented to the Legislature in the form of a proposed supplement to the inspection law. The supplement was approved and formed Chapter 22 of the laws of 1911, as follows:

A supplement to an act entitled "An act to prevent the introduction into and the spread of injurious insects in New Jersey, to provide a method for compelling their destruction, to create the office of State Entomologist, to authorize inspection of nurseries, and to provide for certificates of inspection," approved April fourteenth, one thousand nine hundred and three.

BE IT ENACTED by the Senate and General Assembly of the State of New Jersey:

1. It shall be the duty of every railroad, steamship or express company, or other carrier for hire, maintaining within this State any office or offices, station or stations for the receipt of nursery stock for transportation to points within or without the State, and of the servants and agents of such railroad, steamship or express company, or other carrier for hire, to determine, before accepting the same for transportation to points within or without the State, that the stock so offered for shipment at any station or office within the State is properly provided with a certificate as required by the act to which this is an amendment, signed by the State Entomologist for the State of New Jersey, and valid by its terms at the date at which it is offered for shipment. It shall also be the duty of every such railroad, steamship, express company, or other carrier for hire, and of his or their servants or agents, to refuse for transportation in and delivery at points within this State, all boxes, bales, packages or parcels of nursery stock which are not accompanied by a certificate of inspection as required by section eleven of the act to which this is an amendment. And for every violation of this act, and for every bale, box, parcel or package accepted or transported without such certificate, the railroad, steamship, express company, or other carrier for hire, shall be liable to a penalty of fifty dollars, to be recovered as prescribed in section fifteen of said act, as amended in chapter forty-seven of the laws

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of one thousand nine hundred and four; *provided, however*, that nothing in this act shall be construed as requiring a certificate for stock specifically excepted in section six of the act to which this is an amendment; *and provided also*, that shipments of nursery stock from countries foreign to the United States, and bearing a certificate signed by a proper official of the country from which such stock was received, may be accepted at any port of entry within the State for transportation to points within or without the State; *and provided also*, that nothing in this act shall prevent the delivery within this State of nursery stock bearing a proper certificate of inspection valid at the point where the shipment originated.

2. This act shall take effect immediately.

Approved March 14, 1911.

It was attacked by the Wm. H. Moon Co., of Morrisville, Pa., who claimed the right to ship from a more convenient New Jersey station upon compliance with the laws of Pennsylvania within which the nursery premises were actually situated. The Attorney-General of the State agreed with this point of view, and the edge of the law is somewhat dulled in this direction, but there is no question that we have improved our control over the transportation problem, and that all common carriers are much more particular in their handling of nursery stock.

A very great advance has been made in the dealing with Belgian stock. Heretofore their system has been purely farcical, and certificates were of absolutely no value or importance. Now, another chief has been appointed, there is at least a pretense of carrying out a system, and the certificates are evidence of a certain kind of supervision which is exercised over growers. Furthermore there is a personal responsibility that never existed before—an authority that has something to lose in case a statement is found false or inaccurate and a scientific man who finds that he cannot afford to let his name be used upon a routine statement by an irresponsible tradesman.

Furthermore most of the railroad companies have instructed their agents in reference to the requirements of certificates, so that very few parcels are now forwarded for any but very short hauls without a formal authorization.

As is usual I have made a spring and early summer trip in New England to cover the Gypsy and Brown-tail ground kept in control by the United States Department of Agriculture and by the various State authorities. There seems to be on the whole a better feeling among the authorities, to which I have drawn attention in my report to the Experiment Station, and there seems to be a greater confidence in the ability to maintain the limitations of the species.

It is certain that while there has been no material contraction of the infested area, no definite lessening of spread, there has not been on the other hand any startling jump or sudden energy of development to cause apprehension.

We have, of course, kept our suspicious areas under close observation in the State, and have had a number of "scares" from common species early in the season. In no cases were these scares well based, and in each instance it was easily run down.

During the season of 1910 an unusual amount of dirty Japanese stock was received, and among other things large sendings of infested hemlock came to hand. On this the most obvious species was a form of armored scale (*Aspidiotus*), which was at once referred to Mr. Marlatt, and a more interesting if less abundant and less dangerous Tineid, which was turned over to Mr. W. D. Kearfott for study.

Mr. Kearfott found the species undescribed, of a group containing dangerous forms, and he named it *Ptochoryctis tsugensis*, under which name it is referred to in my Experiment Station report for 1910.

Mr. Marlatt found the species submitted to him of the typical group, not a prominent one, and did not describe it until November, 1911, in volume xxii of "Entomological News," p. 385, under the name *Aspidiotus (Diaspidiotus) tsugæ* Marlatt, crediting me with the collection. A beautiful figure of the anal lobe is given on pl. xiii.

It may be interesting to note that I believe that the entire infestation in New Jersey has been destroyed, and if any specimens do exist they are accidental escapes left on the grounds when all infested plants were supposed to have been destroyed. There was no sale out of this stock through the New Jersey nurserymen, but the Yokohama Nursery Company, which supplied the order for the New Jersey firm, may have delivered similar stock elsewhere. There is a stock of specimens suitable for collections in the laboratory should any be desired by individuals or experiment stations.

Thousands of foreign shipments were examined by Mr. Dickerson during the early winter months of 1911, and, according to his report of March 29th, the following notifications were received of foreign stock sent into New Jersey:

	<i>No. Cases</i>
Holland,	13,597
Belgium,	2,602
Germany,	272
France,	203
England,	321
Scotland and Ireland,	8
Venezuela,	45
Mexico,	10
Columbia,	95
Italy,	17
Austria,	1
Japan,	39
Total cases,	17,210

There were also received 354 notices of stock sent in from the New England States.

During the months of October, November and December, 1911, 3,982 parcels of nursery stock have come into New Jersey from abroad. Of this number, 3,247 parcels were consigned to three large nurseries, namely, Bobbink and Atkins, The Henry A. Dreer Co., and The Julius Roehrs Co. The remaining 735 parcels were distributed among other nurserymen, florists, and, in a few cases, private individuals.

The number of cases from each foreign country is as follows: Holland, 1945, mostly boxwood, a few shade trees; Belgium, 1624, bay trees, palms, azaleas and greenhouse stock; Germany, 295, Ardesias, Acalyphas, greenhouse stock; France, 18, fruit trees and ornamental shrubs; England, 69, mostly roses, small amount of fruit stock; Ireland, 24, roses; Japan, 6, roots and maple trees; Italy, 1. Total, 3,982 cases.

In the above stock nothing serious was found. The roses, azaleas, fruit stock, shrubs and shade trees were all clean. A slight infestation by the oyster shell scale was found in a few cases of boxwood, and here and there a stray scale was noted on palms. As to the bay trees, these were exceptionally clean. Of course, there existed a very slight infestation on the majority of them; but a rather successful attempt had undoubtedly been made to clean them up before shipping.

Bee Work in New Jersey.

For several years last past the New Jersey Bee-Keepers' Association, and others interested in keeping bees in New Jersey, have made somewhat ill-directed efforts to obtain legislation to improve the condition of the industry, but they somehow failed to

get into touch with either the State Board of Agriculture or the Experiment Station authorities so as to obtain their co-operation. The importance of bees in relation to the horticultural interests of the State is fully realized by me, and has been published on my report for 1894, so I was pleased to get into co-operation with the committee, and to prepare for them a law which, covering the conditions existing in New Jersey, gave us a basis for a practice fully equal to that of any other portion of the country. The following law was submitted not only to the bee-keepers of the State, to those of other sections of the country, but to students of bee culture generally, and its general purposes and the methods of reaching them are generally approved.

There is no pretense that we have perfection in law making, and some defects in the practical working of the act have developed, but a good start has been made which will make it possible for bee-keepers to do much to build upon.

CHAPTER 60.

LAWS OF 1911.

An Act to supplement an act entitled "An act to prevent the introduction into and the spread of injurious insects in New Jersey, to provide a method for compelling their destruction, to create the office of State Entomologist, to authorize inspection of nurseries and to provide for certificates of inspection," approved April fourteenth, one thousand nine hundred and three; to provide for the inspection of apiaries and for the suppression of contagious or infectious diseases among bees.

BE IT ENACTED by the Senate and General Assembly of the State of New Jersey:

1. It shall be unlawful for any person, firm or corporation to have or keep in his or their possession or in any apiary, any colony of bees infested by the diseases known as American foul brood or European foul brood or by any other disease which is contagious or infectious in its nature and injurious to honey bees in their egg, larval, pupal or adult stages, and any person, firm or corporation so having in his or their keeping or in his or their possession any colony of bees so infested, after notice of the existence of such disease given as hereinafter provided, shall become and be subject to a penalty of twenty-five dollars, to be collected as hereinafter provided.

2. It shall be the duty of any person, firm or corporation in the State of New Jersey who is engaged in the rearing of queen-bees for sale, to have his or their apiary inspected at least twice during each summer, and it shall be unlawful to ship from such queen-rearing apiaries any package or parcel containing queen-bees without having attached to it a certificate from the State Entomologist, giving the date of the last inspection, and containing the statement that the apiary in which such queen-bees were reared was, at the time of such inspection, free from American or European foul brood, or other discoverable contagious or infectious disease. Any person violating the provisions of this section shall be liable to a penalty of fifty dollars, recoverable as hereinafter provided.

3. It shall be the duty of the State Entomologist, designated as provided in the act to which this is a supplement, by himself or by a deputy appointed as provided in said act, to investigate, or cause to be investigated, all apiaries or other places where bees are kept or raised in New Jersey, and to study and investigate, or cause to be studied and investigated, outbreaks of bee disease and other conditions unfavorable to the development of bees within the State. It shall also be the duty of said entomologist to investigate all complaints of the existence of disease of any kind in apiaries or other places where bees are kept, and to inspect or cause to be inspected at least twice in each season, when requested by the owner, all apiaries where queen-bees are reared for sale. It shall further be the duty of said State Entomologist, whenever he finds any apiary where queen-bees are raised free from foul brood or other discoverable infectious or contagious disease, to furnish the owner of such apiary with a certificate stating that fact, and such certificate shall state the date beyond which it will not be effective.

4. Whenever in the course of the inspections or investigations made or carried on as provided in this act by the State Entomologist or under his direction, said State Entomologist shall become aware of the existence of American or European foul brood or other infectious or contagious disease in any apiary or colony of bees, it shall be his duty to notify forthwith the owner or owners or manager of such infested or diseased apiary or colony, of the character of the infection and of the means to be taken to treat the same for the eradication of such disease. Said notice and order for treatment shall be in writing, and the directions for treatment may be written or printed, and may consist of a bulletin or other publication of the New Jersey State College Experiment Station. Said notice and order for treatment shall also specify the time within which the prescribed treatment must be made, which shall not be less than eight days after service of the notice or order upon the owner, owners or manager of the apiary or colony. And in case of doubt, where the presence of disease is suspected but cannot be definitely determined because of the character of the hives used, said State Entomologist may, in his discretion, order any owner of bees in box hives without movable frames, to transfer such bees to movable-frame hives to facilitate inspection and supervision. It shall thereupon be the duty of the owner, owners or manager upon whom such a notice and order is served, to comply with it in all respects within the time limited in said notice and order, and in case of a failure so to comply, such owner, owners or manager shall be liable to a penalty of twenty-five dollars, recoverable as hereinafter specified.

5. It shall be unlawful for any owner or other person having diseased bees or their larvæ, or infested hives or combs, or other appliances or utensils for keeping bees, to expose, sell, barter or give away or allow the same to be moved, until after treatment as prescribed by the State Entomologist, and it shall be unlawful to expose, sell, barter or give away such infested bees, larvæ, hives or combs or other appliances after treatment, until such materials are declared safe and permission is given by the State Entomologist or his deputy. Any person offending against the requirements and provisions of this section shall be liable to a penalty of fifty dollars.

6. In case the State Entomologist or his deputy shall find any apiary or colony of bees, in his opinion, so badly infested by American or European foul brood or other infectious or contagious disease that he shall deem it necessary to order the destruction of some or all of the hives, combs, bees, larvæ or other material as part of the treatment, and the owner, owners or manager of such infested apiary or colony shall dispute the diagnosis made by the State Entomologist or his deputy, or the necessity for the destruction of the hives, combs, bees, larvæ or other material, it shall be the privilege of such owner, owners or manager to appeal within three days after the service of the notice and order upon him or them, to the committee of appeal provided for in section twelve of the act to which this is a supplement, and the proceedings of such appeal shall be in all respects as provided in said

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section. Said committee of appeal shall have the same power to reverse, modify or confirm the order of the State Entomologist made under this act, that is conferred upon them in the act to which this is a supplement.

7. Any person who offends against the provisions of this act and becomes liable to the penalties prescribed in any of its sections shall be prosecuted as prescribed in section fifteen of the act to which this is a supplement, as amended by chapter forty-seven of the laws of one thousand nine hundred and four, approved March twenty-second, one thousand nine hundred and four, and if the order of the State Entomologist commanded the destruction of any bees, larvæ, hives or combs, or other utensils or materials used in keeping bees, the judgment of the court imposing the fine shall include also an order to the officer enforcing its judgment to seize and destroy the specified colonies of bees, larvæ, hives or combs or other utensils or material used in keeping bees, in accordance with said order, which the said officer shall thereupon be fully authorized to do.

8. For the purpose of making the investigations and inspections specified in this act and to enforce the provisions of the same, the State Entomologist or his deputy shall have free entry upon or into any apiaries or premises where bees are kept, or infested hives or combs are stored, and any interference with or obstruction made to the Entomologist or his deputy while engaged in the performance of the duties herein imposed shall subject the offender to punishment as a disorderly person under the general laws of the State, upon a charge made against him by the officer interfered with.

9. The sum of two thousand dollars annually is hereby appropriated to the State Board of Agriculture for the purposes of this supplementary act; *provided*, that no payment shall be made pursuant to this supplementary act until the amount thereof shall have been included in the annual appropriation bill.

10. This act shall take effect immediately.

Approved March 28, 1911.

An appropriation of one thousand dollars (\$1,000) was made to carry this law into effect, and through the Civil Service Commission and the Executive Committee of the State Board of Agriculture Mr. C. S. Sharp was appointed, July 1st, at a salary of \$83.33 per month as deputy inspector. Mr. Sharp began work enthusiastically, and continued a thorough and satisfactory service until November, when a very much better offer from commercial life induced him to give up his public service.

I consider it a great misfortune to the service that Mr. Sharp was compelled to give up his employment, because his abounding vitality, his intense interest in the subject and the absorption in the topics opened up for study would have kept him at work throughout each season, preparing for the work of the one to come and for a continuous campaign of education, which proves to be so highly necessary in our State. I present his draft report almost as he handed it in to me. It is supplemented, of course, with the daily reports of inspections made, which contain many

comments, and there is very little record now of the plans that were made for the education of bee-keepers in general, and which will have to be left over to await the selection of an equally satisfactory man.

Prior to sending Mr. Sharp into the field I consulted with Dr. Burton N. Gates, of Massachusetts, in charge of the practical bee work in that State, and Dr. E. F. Phillips, of the U. S. Department of Agriculture, as to the extent of the work that could be done for individual bee-keepers during the first year of the service at any rate.

It was the guidance given by these men, as well as the practical experience which bore out their advice, that determined the final practice. All the quotations are from Mr. Sharp, and the interjections are my own.

“During the summer 205 inspections were made, covering 191 apiaries, containing 2,533 colonies. The average number of colonies per apiary is 13.4. Two hundred and sixty-eight colonies in 55 apiaries were found unmistakably infected with European foul brood. Practically 30.3 per cent. of the apiaries inspected had one or more cases of European foul brood. American foul brood was found in 27 colonies, located in six apiaries. This gives a total of 61 infected apiaries, or 32 per cent., for the total number inspected.”

“Investigations were made in 14 counties; every complaint received has been investigated, and every request for inspection or assistance has been complied with.” Full details relating to individual outfits have also been prepared for filing, so that future inspections in some localities may be simplified and the characters and methods of some bee-keepers understood.

“During the inspection work 95 colonies more or less infested with wax worms were noted, and evidence of the ravages of this pest were to be seen on every side, especially in the southern portions of the State, where the largest percentage of the bees is black. The average bee-keeper makes no attempt to prevent hives in which the bees have died or the colony has been weakened from any cause from being used as a breeding place by wax moths. In one case I counted over 1,000 cocoons in the super of a hive, and gave up without trying to count the number

in the hive body, which was covered, sides, bottoms and frames." As a result of these conditions wax worms spread quickly when conditions become in the least favorable, and do injury out of all proportion to their rank as a pest to bee-keepers generally. They are present in many apiaries and in many hives where there is absolutely no excuse for them, and in numbers that alone furnish a commentary on the character of the bee-keeper.

"In 61 apiaries box hives constituted at least part of the hive equipment, and, in the majority of cases, the entire equipment. If to this number was added the apiaries equipped with frame hives in which the frames are immovable from one cause or another, the number would be largely increased. As it is, it constitutes 32 per cent. of the apiaries inspected. The term box hive is used to cover store boxes, nail kegs, butter tubs, tin pails, old milk cans, barrels of various kinds, sections of hollow tree trunk, and, in one instance, a box marked U. S. A. Powder was occupied by a fine swarm of Italian bees.

"Hives using Hoffman frames are almost universally used. The 8-frame s. w. dove-tailed hive is the most popular, followed by the 10-frame s. w., and the chaff hive, in the order named. The Danzenbaker hive comes fourth on the list, but no large apiary has a complete equipment of this style."

"The production of honey is divided as follows—no attempt being made to keep a record of the small apiaries: Fifty apiaries, containing 1,669 colonies, were run for comb honey; six apiaries, containing 106 colonies, produced both, while seven apiaries, containing 139 colonies, were managed solely for extract honey."

"Out of 191 apiaries visited 56, or 30 per cent., had no equipment, not even a smoker. Most of these bee-keepers admitted that they took up a hive or two each fall. That means that they killed the bees with sulphur, and it seems safe to assume from these figures that practically 175 bee-keepers of the State are keeping bees the way they were kept 100 years ago. Fifty apiaries contained all black bees, while forty-eight contained pure Italian bees. The remaining ninety-three contained nearly every combination of races or kind of bee."

“Usually my reception by the bee-keepers was cordial, and in numerous cases I was provided with transportation and meals. There were a few exceptions, however. One man, after shaking his fist at me for awhile, stood a shot-gun by the door, and then, taking a seat within reach of the gun, invited me to touch his bees. Another turned his dogs loose. Several ordered me from their places, and one went to the trouble of seeing that I got off.”

Mr. Sharp's instructions were, in all cases, not to force a conflict, but to make a full report, presenting especially the sore point on the part of the bee-keeper that led him to look on the inspector as an enemy rather than a friend and assistant. The law is, of course, quite sufficient to protect the inspector, but the avoidance of friction was considered so much a matter of importance that I took it up personally in almost every case with the disgruntled bee-keeper, and in several instances Mr. Sharp afterward succeeded in making a friend of him. In fact, it proved not so bad a scheme to permit Mr. Sharp to beat rather a prompt, good-natured retreat, to follow up with a letter of explanation applicable to the peculiar case in hand, and also stating the legal powers available should we choose to be ugly, and then to make another good-natured call.

“A custom very general through the State, of allowing bees to rob out combs and hives in which bees have died from any cause whatsoever, should be discouraged and, if possible, stopped.”

“A knowledge of up-to-date methods is urgently needed by a large percentage of the bee-keepers in the State.”

The reports were received.

The Board adjourned to meet this evening, at eight o'clock, at the Normal School building.

REPORT ON RESOLUTIONS.

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SECOND DAY—SIXTH SESSION.

The Board met in the auditorium of the State Normal School, and the meeting was attended by a large number of visitors, the room being filled.

The meeting was called to order by Vice-President Cox, who said: The Philomena Glee Club of the State Normal School will favor us with a selection to start the exercises of the evening.

Several musical selections were presented by the club.

A highly entertaining and instructive lecture on the subject, "The Government Introduction of Foreign Plants," was delivered by David Fairchild, Agricultural Explorer, in charge of Foreign Seed and Plant Introduction Bureau of Plant Industry, United States Department of Agriculture, after which the session adjourned.

 THIRD DAY—SEVENTH SESSION.

The meeting was called to order by Vice-President Cox.

Vice-President Cox—We will now proceed with the order Unfinished Business. Mr. Secretary, is there any unfinished business to bring up? Is there any committee ready to report?

Mr. Hendrickson, Chairman of Committee on Resolutions—Mr. Chairman, the Committee on Resolutions report the following resolutions:

WHEREAS, The question of extended trolley facilities in the rural communities of this State is a matter of vital interest to the farmers and citizens of the State generally, and

WHEREAS, The present condition of the granting of franchises has a tendency to restrain such development; therefore, be it

Resolved, That we, the delegates of the State Board of Agriculture in convention assembled, do hereby petition the Legislature of the State of New Jersey that the laws regulating the transportation of freight and express matter by trolley lines be made uniform without municipal regulation.

The Committee reports favorably on this resolution.

The report was adopted.

Mr. Hendrickson—The Committee also present the following resolution:

Resolved, That the present crowded condition of the winter courses in Agriculture at the State Agricultural College should be relieved by providing a larger building and that the State Board of Agriculture urge the Legislature to make such a provision.

The Committee report favorably on that resolution.

Vice-President Cox—You have heard the resolution and the report of the Committee, what is your pleasure.

A Delegate—I move the adoption of the resolution.

This motion was seconded.

Vice-President Cox—The motion is to adopt the resolution. Are there any remarks? We will be glad to have an expression of sentiment on the motion of the members present.

Mr. Van Horn—Mr. Chairman, I made a few remarks yesterday and I would say, as one of the gentlemen who took the short course there, I can testify to the great value of the education. The lectures there are not only very useful and interesting, but the experience he gains there brings him out ready for the work on the farm and how to make use of the capital invested in the farm. The work was started a few years ago, and the class was small then, about thirty, and it kept growing and growing, until last year it was something over seventy, and this year it is about double, about a hundred and thirty students there.

I was down there in Farmers' Week and they told me then that the conditions were so crowded that they could only have laboratory classes once a week, that is, they had to divide the classes up into smaller classes, and if you took work in the laboratory you could only get into that laboratory once a week, and then the rooms were crowded, the lecture rooms were crowded. There was only one room which was large enough to accommodate the class, and in every way there were insufficient facilities. That, with the advent of more young men who would come there to receive the education, it would be necessary for the staff to be enlarged, so that it was, and that appropriations

should be obtained to help them more immediately in the matter of buildings.

While there are a hundred and thirty there now, if we can judge from those meetings and the interest shown and the way this work has grown, there will probably be twice as many applying next year, and the year following, no doubt, will grow much greater as the interest in agriculture is growing throughout the State and throughout the country, and I think we in New Jersey ought to take care of those people and give them the education they ask. In other States, where this movement was adopted years before, they have very much larger facilities, many times as large, as they have in New Jersey, and they are promoting many hundreds of young men from there.

I think New Jersey ought to provide facilities to promote their education equal to the facilities of any one in the United States. And so, Mr. Chairman, I second the adoption of this resolution.

Mr. DeCamp—Mr. Chairman, I think that we should do something for our boys. I have been one of the Board of Visitors there for a number of years, and this is one of those steps that we have been taking forward in New Jersey. Those gentlemen go there not only to get an education, but they go there to learn how to do something, and that is what we want, men who shall do something, and I have been wonderfully pleased when I was there and saw those boys at work; it is a practical education that they do not get in the higher schools nor in the colleges. There they have something they learn how to do, and they are coming out of there and going out into the State of New Jersey, and I believe they will have more influence on the farming in New Jersey than any other thing we have or do.

They have a hundred and twenty-nine there now, and I believe they are overcrowded, and they keep on increasing and we have either got to have this appropriation or forsake the work, which would certainly be a step backwards.

A Delegate—Mr. Chairman, I agree thoroughly with what Mr. Van Horn has said. I know three years ago I took a course there at an expenditure of a hundred and some few dollars, and I would not sell it now at any price if I could not get it back.

The report was unanimously adopted.

The Committee on the Treasurer's Report made the following report:

We, the members of the Auditing Committee, have examined the accounts of A. J. Rider, the treasurer. We find that he has received from the State Comptroller the sum of \$7,403.12. We also find that he has paid bills by checks for the same amount and report that his book and accounts are correct.

Signed GEORGE E. DeCAMP,
THEO. BROWN,
R. C. GRAHAM,
Auditing Committee.

I want to say that we have always reported on the vouchers, but the vouchers are in the Comptroller's care; but the books and his checks agree.

We offer the report on the amount our Treasurer has received and the amount disbursed. There are other things which have been disbursed besides that, but we have nothing to do with them.

Vice-President Cox—This report only covers, of course, the amount of money that passed through the Treasurer's hands, and while the State of New Jersey, through its Legislature, makes an appropriation to the State Board of Agriculture, they only allow us to handle a part of the money. Of course, we cannot hold our Treasurer accountable for that part of the State appropriation which does not come from the Comptroller down to him. I believe you all understand the situation, and now what will you do with the report?

The report was adopted.

Mr. Allinson—Mr. Chairman, your Committee on Credentials finds that all the Pomonas and other agricultural societies are represented except Cumberland county, and if they are here and have failed to let us know before this, I wish they would let us know now. Otherwise, I present this as the report of the Committee.

The report was adopted.

Mr. Allinson—Mr. Chairman, your Committee in regard to the meeting place for the next meeting of the Board have the following report:

EMPLOYERS' LIABILITY ACT.

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Your Committee appointed on the next place of meeting for this Board realize that the law requires the Board to meet in Trenton, it would seem therefore that the meeting place should be here. Outside of the present meeting place here in the State House, the Committee on such short notice sees no other suitable place except the armory, and we understand that such will not be available unless legislation to that end is enacted, and we would suggest that inasmuch as there are a number of matters that seem to require legislation the coming winter, that the President appoint a Committee on Legislation to attend to such matters on legislation.

President Frelinghuysen—Mr. Chairman, I think that is a very good resolution. We have all suffered this year from the cramped quarters and ill ventilation, and I think it is due to the farmers of the State that the State provide what would be a suitable place for this State organization, which is established by law and required to meet in this city. I move the adoption of the report.

The report was adopted.

A delegate offered the following resolution:

WHEREAS, The Employers' Liability Act, passed at the last session of the Legislature, has worked great injury to the agricultural interests and small employers of labor; and

WHEREAS, We believe that such a law curtails the output of all productive industries; therefore be it

Resolved, That this State Board endorse Senate Bill No. 16, introduced by Senator Gaunt, which provides that domestic and farm laborers be exempt from the provisions of the Employers' Liability Act of last session of the Legislature.

Vice-President Cox—You have heard the resolution read. Are there any remarks?

Mr. Brown—Mr. Chairman, I don't know whether anybody realizes the effect of this act, but you know as well as I do that there are thousands of employers of labor in this State on farms and housekeepers that are not worth as much money in case of an accident as this act makes them responsible for, and I claim that the State has not any right to put a greater responsibility on any person than they are able to bear. Take a young man, for instance, just starting farming; possibly he has a few dollars; possibly there is just somebody backing him up; he starts farming; he has an accident, and is liable for at least from five dollars a week up for three or four hundred weeks. Where is he going to get it? Take a laboring man who employs a domestic in his family, and something happens. Say the laboring man is worth

ten or twelve or fifteen dollars a week. In no case can this compensation be less than five dollars a week. Supposing he is held up from three hundred to four hundred weeks. I tell you it is not a good policy, it is not a good law. Something should be done. Either that law wants to be modified so as not to apply to farm laborers and domestics or some protest wants to be made. Is there any justice in placing this responsibility all upon the employer? I cannot see that there is. I hope this resolution will be passed.

Mr. Hopping—I want to say that at the last meeting of the Morris County Board of Agriculture this same question was discussed at considerable length, and, no doubt, our Secretary, Mr. Dye, will remember that he received a notice from the Secretary that the Morris County Board of Agriculture ordered that this matter be discussed by the people of Morris county, and a notice was published in the paper asking the people of Morris county to notify our Secretary, Mr. W. F. Ely, if they wished him to call a meeting for this important matter, and the meeting will be called immediately.

I agree with the sentiment of the last speaker in his remarks, and it was our sentiment in the Morris County Board of Agriculture that this bill be adopted.

Secretary Dye—I have not received any such notice.

Mr. Quick—Mr. Chairman, this matter comes before a jury, does it not, before a verdict is rendered?

Vice-President Cox—No, as I understand the law is very definite and prescribes the amount of liability of the employer.

Mr. Brown—There is no defence in court whatever.

Vice-President Cox—The employer has no defence in court. The law is specific in its application and declares what the compensation must be.

Mr. Quick—Instead of changing the law as my friend's resolution calls for in exempting or excepting domestic labor, it seems to me there ought to be some other change there providing for domestic labor where the employer might be perfectly

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able to pay this five dollars. For instance, there are many rich farmers and rich men employing domestic labor on farms where there might an accident happen on their gasoline engines or hay forks, and such machinery, that would be very well able to pay that five dollars or that remuneration, whatever it might be, and if the domestic laborer is employed on such a farm and the law is changed they would have no redress. Can't we have that law adjusted so that it would make the domestic laborer in such a case protected and yet exempt it in the other case where the employer might not be able to pay it? If it should come before a jury and a judge, of course, those matters would be considered on the evidence, and probably the sentence would be suspended altogether if the defendant was not able to pay.

President Frelinghuysen—Mr. Chairman, this law was enacted after a commission had been appointed by the Governor, consisting of two members of the Legislature, two members of the labor unions and two capitalists. The law is divided into two parts. The first part provides that where an employer and employe agree to enter into a contract under this law that they shall come under its provisions. If that contract is not made, they come under the old common law and take their chances with a jury; am I right?

Senator Gaunt—Section one of this act provides that they take their chances with the common law and a jury with the contributory negligence and fellow-servant doctrine eliminated. Their principal defences are gone. Section two of this act is the compensation section of the act, which provides that they shall receive a maximum of ten dollars or a minimum of five and fifty per cent. of his wages, which is arranged automatically, and the compensation section is the section that this has reference to. Of course, if there is not anything said, if I employ a man and say nothing whatever about whether we are to accept section two or section one, automatically he is under section two and that provides for the compensation in case of injury.

President Frelinghuysen—Now, as I understand the gentleman from Somerset, he wants to eliminate from this provision—the domestic servants of the rich farmer and the employes of

the rich farmer—and have the poor farmer have the advantage of the exemption.

Now, where are you going to draw the line? It would be unconstitutional. The law is general and treats all citizens alike, poor and rich, they are not classified in the law. It is a question of right or wrong. If it is wrong to repeal those provisions of the law, then they should not be repealed. If it is right, they should be repealed.

The situation is this: Every humane farmer and every humane householder takes care of their employes. If he has a cut finger or a cut foot, they generally pay the doctor's bill. But, under this law there is placed upon the producer a burden of taxation which is probably greater than his liability, and greater than the value of his earnings on the farm.

It would seem as if a burned finger of a domestic servant, caused practically by her own negligence, or a cut finger or cut foot of a farm laborer, when he had been warned time and again that the circular saw had teeth, that the farmer should not be liable for the liability. Now, under the law, it seems he is, and he has no redress. And there seems no doubt but that there was grave doubts in the minds of the Legislature when they passed this provision that domestic servants and farm laborers should be included.

It is a question of whether it is right or wrong, and you must decide that question when you pass this resolution.

Mr. Anderson—How would it work in this case? I put my farm out, contract it with another party. If that party employs help, and that help is injured on that farm, who is the liable party for it?

President Frelinghuysen—The gentleman is, isn't he?

Senator Gaunt—I think there is a provision there whereby the sub-contractor is exempted. I think the gentleman who leases the farm is held.

President Frelinghuysen—I think the gentleman who leases the farm is liable, the owner.

Senator Gaunt—I think that is the way it is; that is the way I understand it.

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I want to say this: the law was passed not because the representatives of the agricultural interests in the Legislature wanted it passed, but because the Senator and myself could not hinder it from being passed. We took the lesser of two evils. The bill that was introduced by Mr. Ford, and passed, would have put every industry out of business. It would not have been possible to have any employer of labor do his own business or control his own business under the provisions of that act if that was enacted into a law. I worked all winter in co-operation with the Senator from Somerset trying to find some means whereby we could eliminate these classes. But we are up, perhaps, against a constitutional proposition on this act. We do not know. Massachusetts has an act which includes farm laborers and domestic servants, but it is not worded quite as the act that I have introduced in the Legislature. It is differently worded. This is sweeping, and it is a question that we have got to face, whether it will be constitutional or whether it will not be. The parties who put the bill through last year, who were so enthusiastic for it, after this bill was introduced, said, "You are not going to push that bill?" I said it was not introduced for fun; that it was introduced because I knew that there was a great demand that such a law would be enacted. "Why, you will put the whole law unconstitutional, and you will have the sympathy of thousands and the thanks of the thousands of employers of labor and manufacturers throughout the State," was the reply that was made.

I believe that the law, as it stands to-day, on the small employer of labor, it does not make any difference, it does not make any difference how dreadful the accident in many instances, after that accident he had better make out a deed for his farm and let the fellow have it, and he go out and work for somebody else, and perhaps he will stand a show of getting that back in some way. That is about what it resolves itself into. At least under the present provisions of the act.

A Delegate—I undertook to farm some time ago in Somerville, and I lived on a rented farm for over twenty years. I have a family of seven children depending on my work mostly. The way I understand this act, I employ one man steady the year

around and several by the day ; if they should meet with an accident, according to this law, it would put me out of business, and myself and my family would have to go to work for somebody else, or be liable to an accident with somebody else and put somebody else out of business.

Mr. Van Horn—Mr. Chairman, at the last meeting of the Sussex County Pomona Grange we passed a resolution to support any measure approved by our State's grange, and this act introduced is looking in this direction, exempting farmers and small employers from the provisions of this act, and we endorsed that.

Senator Gaunt—In line with what Mr. Van Horn has said, I hope that the different counties here represented will not only pass resolutions, but they will take due care that the representatives of their counties understand what those resolutions mean. We are not going to have it all our own way ; we are going to have a fight to put this bill through. Don't think for a moment that this is going to be an easy proposition. This is going to meet with the most bitter opposition. But the agricultural interests ought to have a pretty good organization in New Jersey through the granges and the county boards, and unless your people are in favor of it when you get home, and so inform your members from that county, we won't get very much results on it.

If you are in favor of it while you are here, then when you go home and keep that favor under a bushel somewhere and don't let it get outside of your farm to your home representatives, they won't know very much about it, and you have got to speak in pretty plain terms to them in reference to a proposition of this kind, and I hope that you will take that back home and get everybody interested.

Mr. Brown—One thing more, Mr. Chairman, we want to talk a little plain about this thing. The farmers in this State have got to have a remedy from that law at this session of the Legislature or it will be necessary to repeal the whole law. There is no question about that. We have got to have this thing put in shape so that the farmer can live. There is no justice in putting a responsibility on the employer when possibly the man who

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is employed is worth just as much as he is. It is all right for the employe to get compensation, but some other way must be found than to saddle it on the other fellow. He should also have some responsibility. And either we must get this that we are working for or we will have to repeal the whole bill. We are employing labor that is irresponsible. Now, have we got to take all their responsibility? If they want a compensation law the employe should pay something towards that. It should take the form of a compulsory insurance law, that the employe should be compelled to pay some part of it as well as the employer, possibly the State; but in its present form it is an outrage.

Mr. Camp—Mr. Chairman, as secretary of the Cape May County Pomona Grange, I want to assure Senator Gaunt that he will have my support in regard to this bill, and I will assure him that our representative from Cape May county will be in line or else there will be something doing.

Senator Gaunt—I want to say that the Senator from your county last year was with us and voted against the bill.

Mr. Camp—Well, he wants to be right.

Senator Gaunt—He was against it all the time.

Mr. Camp—That is right. Now, this is what we want. We are a body of men and intelligent men, and when we find what we want, we are going after it and see that we get it. That is all there is to it. We have got as good a looking audience here this morning of intelligent men as there is in the State of New Jersey. That is what we have got right here on this floor, and if we set out to do something we can do it. I would not give a cent for the man who has no backbone and would not stand for what he thought was right. But let us get right and tell the other fellow what to do and make him do it. That is business. Stand for what is right and stand for it as a unit. In unity we stand, divided we fall. Let us stand for it, one and all. Go back to the farmer and tell him. We have got the right to say what we want as well as the capitalist.

Senator Frelinghuysen said that this commission was made up of capitalists and the representatives of the labor unions. He

did not say there were any farmers on the commission. He never said a thing about the farmers on that commission.

President Frelinghuysen—I am glad the gentleman has noted the exception.

Mr. Camp—There was never a thing said about the farmer. I, for one, think that this bill would have been differently arranged if there had been a farmer or two on it. And we need the farmers on these commissions; we need to have the State recognize the farmer if they have got a commission to make up; put a farmer on it; that is what we want; let us stand for that. (Applause.)

A Delegate—Mr. Chairman, I employ quite a number of men on the farm, also on the cranberry bogs, and I assure you I do not feel very secure under the present law. It is only a question of time, I think, when something may happen that will make us sell out our bogs.

Mr. Anderson—In regard to the farm help that we are employing on the farms, there are lots of those men who would put themselves in the position of having some accident so as to receive the compensation for it and not have to work. I know; I have employed help for the last fifty years, and I have been up against a good deal of it, and I am satisfied with the help that we have got up on the farm—the help that we have got to employ—that there is lots of it will do that very thing. We had a man who got injured some two years ago before this law came into effect, and I took him down to the hospital, or started to take him down there, and the very first saloon he came to he wanted me to stop and go in and take a drink with him. Now, is that the sort of thing we have got to submit to? And then to be dictated to? I don't think so. I think we, as farmers of the State, ought to have something to say.

Mr. Lippincott—Mr. Chairman, I am glad this resolution has been introduced. And I would like to say this one thing. About three weeks ago I happened to be in a bunch of farmers in our community. Some of them were wealthy men, some of them had just started out to farm, and had not anything to back them,

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and I know the outcome of that. I guess most of you people here in this audience would know them if I called them by name. There was nine of that bunch had papers written out, had deeds for farms written up, all ready to sign, in case of accident to any laborer on their farm; that if they had to meet those bills, they were going to sign the property over to another man in trust.

(The motion was then put to a vote, and carried.)

President Frelinghuysen—Mr. Chairman, there is one subject I want to take up with the State Board of Agriculture before its adjournment, and I want to be very frank with them, and I want the gentlemen who represent the county that I am going to speak of, to understand that what I am going to say is from a sense of duty and not from any desire to criticise them in any way. There is just one thing I want to say to preface my remarks about organization.

The State Board of Agriculture, being a State organization, is composed of County Boards all over the State, and the gentleman from Cape May has given me a bit of a text in saying "In unity there is strength."

Now, we, to be unified, and to be strong, must have strong county organizations. They must be alive to the conditions in their county. They must be active in spreading the education for which the State pays, throughout their community, and all together, they must stand, as one body, for the cause of agriculture; demanding their rights, not unjustly, but justly, demanding their rights from the Legislature; demanding their rights from the State; their just rights.

A farmer in my community came to me once not long ago with the suggestion; he said to me, "I think the Legislature should pass an enactment compelling every farmer to call his farm by name so that it will be localized, instead of R. F. D. No. 2, and 3." And it gave me a thought, and that is, that the farmer has certain rights in the Legislature, and, unless he asks, and through some spokesman or through some organization shows the Legislature or to the State that they have a uniform policy, he will get nowhere. That the farm is not a place

where a man ekes out a scanty existence, but a home where he can be surrounded with the happy memories of a lifetime; where he can look in the faces of his children and the mother of his children and realize that they have as full opportunity and uniform opportunity for the comfort and advantages of life as his rich city neighbor. (Applause.)

And that, gentlemen, is one of the foundations of the State Board of Agriculture and County Boards of Agriculture, in order that we may meet from time to time and discuss these subjects and present to the Legislature our views as one class of the community, and that, too, the producer class.

Now, some comment was made last night, that we had discussed probably one or two topics, the dairy farm and tuberculin was done to death, and there came a man from Morris county, a fruit raiser, and he said, "I came down here in order that I might learn something about spraying." And another farmer, a boy, from the short course, came and said, "I have just bought a farm, an abandoned farm in Morris county, and we have got a County Board of Agriculture that is active." And he said, "There is nowhere to go where I can learn about the problems on my farm." And another farmer told me about the same thing.

Now, gentlemen, we might spend three weeks in profitable discussion here on these subjects, and we would not be at the end yet. The subject is one of such great magnitude. Why, when you come to realize the subjects that you have to deal with, in their great extent, it confuses and almost embarrasses you, and I said to those who wanted to know about spraying, "Why, the dissemination of education should be through a county organization." "Well," they said, "we have not got any. At least, we have got merely the skeleton of one."

Here is Morris county, a great county, the watershed of New Jersey, virtually, and her roads lined simply with unprofitable farms. At one time it was the great peach-growing county of the State, and to-day the blackened stumps of those peach trees mark the monuments of the pestilence and the scourge of the San José scale. How many more orchards would be

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springing up if that County Board of Agriculture had been active and had brought the lecturers from the Experiment Station, from the institutes and from the State Board of Agriculture, and invited the farmers all around to come there and to learn of these problems?

And, gentlemen, I have here a report, and I believe it is my duty to say it, and I say it without any feeling of resentment, that here is the record of the County Board of Agriculture of Morris county: "Organized, met, elected president and secretary, and then adjourned." And here is the report this year.

I met a gentleman who came to me and said, "I understand this question is going to be brought up before the Board of Agriculture, and some comment made upon it?" I said, "Yes, I hope you will get up in the open meeting and tell me why the County Board of Agriculture of Morris county has been inactive." He said, "We have published in the newspapers that we would hold a meeting to discuss this subject if the people desired, but they have not shown that they desired." That is not it. The duty of the officers of the board is to hold meetings and invite the people to come. Not invite the people by notification asking them if they want to have a meeting held. But ask them to be there at the meetings which you hold, and I tell you, gentlemen, that the progress of Morris county will be wonderful if such is done, and I stand here, independent in thought and action, because I am prompted only by feelings of interest in the State Board of Agriculture. This organization is not for the personal ambitions nor the political ambitions of any man, but for the progress of our great industry, and I stand here doing my duty as president of this State organization asking Morris county why it has not gotten busy and why it does not invite the institutes and the men from the Experiment Station to come there and help the citizens of Morris county to solve the problems of the soil, which so many earnestly desire. And I should be very glad to hear from the representatives of Morris county who are here present. (Applause.)

Mr. Young—Mr. President, I am one of the skeletons from Morris county, and I was with it some twenty-five or thirty years

ago. I think I was one of the first ones to join that Board. Since that time I have only missed two meetings, and we have had meetings; we have had meetings in Morristown. We have called Prof. Voorhees up there and I was ashamed to see what few came there from the farmers. It was published, I think, in the county papers, and when they got there we only just had a small bunch there to hear such a fine address.

Now, this last fall we had, I think there was a dozen or fifteen or so, and we met there and waited to see if any more would come, and no more came there and we went on with our business. We adopted our motions and we debated over these different subjects, and we wanted to know if there was anything that we could do to get up an interest, to go to Morristown or any other place—there is where the Board was first organized twenty-five or thirty years ago, and I don't think there has been a time but what we have had a meeting since that time if anybody wants to come in and join with us there.

For years our Secretary, Mr. Ely, had a hall there, before it was burned down, and he gave it free gratis. Since that time we have had to put our hands in our pockets and pay for the room. Now, we have the Borough Hall, and the borough gives us that, so we don't have to pay anything, and at that time we made a report of all that was there. I travel quite a good deal all over the county and I tried to get from the principal ones the crops, noted them down, and I gave them to the best of my knowledge, and what I could find was those crops to send into the State. And I think that we have done what we can do. I know several times that we had to go around out there to try to get them out. One had something to do, another one had something to do. I said, "Why don't you go up there and attend the Board?" "Well, they had to go away, and their man is away, and all that."

I have a small place there, three or four hundred acres, but I don't want to lease any of that ground out to any young man if any loss by accident comes back onto me; I would sooner let the land lie idle.

At any time, if anyone wants to come in there and join with us, if there is any subject they want to come before us, we are

only too glad to have them with us, just to have them say so, so that we can call a meeting at Morristown or Dover or any other place.

Senator Gaunt—Mr. Chairman, I think I have a suggestion that might help the Morris county members a bit.

We have noticed in our past ten or twelve years' experience, as members of the State Grange, that whenever we get a good Grange going, or get a county well organized, we have noticed that their County Boards have been more active, and for the benefit of our friends from Morris county we have been doing a little organizing in Morris county. We organized a Grange there in Chester, and I am going up in that county on the twenty-fourth of this month and expect to address a meeting at Chester, and I have found that the Grange has had a great influence in bringing more activity into the County Boards. The two are simply working in common, they are both the same, working for the same objects, they are both working for the advancement of agriculture and agricultural questions and agricultural interest, and we have one advantage over the County Boards in the Grange, we take our wives with us, we take our daughters and our sons with us, and that assists us in a fraternal way and brings the neighborhood in more close relationship than they have been previously to the organization of the Grange. And I think that with the co-operation of the Granges of Morris county we will be able to see results in the near future, and I stand here ready to say to the gentlemen from Morris county that anything that possibly can be done as master of the State Grange to revive the County Board of Morris county he can count on my earnest support. (Applause.)

Mr. Geo. E. Felch—Mr. Chairman, in regard to the Morris County Board, I am President, I believe, at the present time; and you have heard what Mr. Young has stated here. That is practically the business that was done at our last meeting. He is a gentleman who has belonged to the Board, as he has stated, a number of years. Now, I have not, I have belonged to it, perhaps, ten or twelve years, and, of course, I don't know the business that was done, as Mr. Young has stated, but I do know that

at this last meeting, as he stated there were perhaps fifteen or twenty people there, and this business was brought up. The Board was organized and the officers elected for another year, and other business transacted, and this business in regard to the Employers' Liability was brought up, and the Secretary was requested to print notices, or have notices printed, in the different papers that anyone that was interested in the county should reply to the Secretary of the Board if they desired to have a meeting called at Morristown or any other place that they wished, that it would be called, and I heard from Mr. Ely, he said he had only had two or three replies, and after that I saw in the paper somewhere some accounts of the bill that was going to be introduced in the Legislature in regard to the exemption of the farmers and domestic help from the farm, and I thought when I saw that that there would be no need of the Board calling a meeting anyway when so few were making replies, and I don't think it is the fault of the Board as much as it is the people, the people do not show the activity. Now, they have had many times a notice published, every year, to that effect, if they desired a meeting called the Board would call it, but there has never been enough interest taken for the Board to have called a meeting. As Mr. Young has stated here, at the meeting called at Morristown, there were not enough there represented to amount to much, so I am sure that if the people of Morris county wish to have meetings called that the Board would be willing to call those meetings, or if the State Board wishes to undertake it, and wishes to have a meeting called, the Board would only be too glad to call those meetings, or anybody else.

President Frelinghuysen—May I ask a question?

Mr. Felch—Yes; what is it?

President Frelinghuysen—Is Morristown the center, practically, of the farming population in Morris county, of the farming district?

Mr. Felch—Yes, sir, it is the county seat.

President Frelinghuysen—I know it is the county seat. But wouldn't you get more people out if you were to call one of those meetings at Dover or Boonton?

Mr. Felch—I hardly think so. I think Morristown would be the proper place. Still, I am sure the Board would be willing to call them wherever the people would desire to have them called.

Secretary Dye—I would like to say, Mr. Chairman, that the Morris County Board has done good work in past years. A number of years ago, way back in 1888, I, myself, attended a meeting, I think at Afton, and the first address ever delivered in New Jersey on the road question was delivered by myself at that meeting. Mr. Cutter was then president of that Board, and they had a good meeting. That address was used here in the Senate by Senator Miller, of Union county, to get the Union County Road Law passed. It was also used by Governor Voorhees, then a member of the Legislature, in the House, for the same purpose.

I remember that meeting with a great deal of pleasure. They have had good meetings there years ago, but somehow or other, of late years, the interest seems, as has been stated, to have died out. Something needs to be done.

Perhaps we might go up to Morristown and hold a Farmers' Institute, under the auspices of the Board, and stir up a greater interest. What do you think of that? We might do that in the near future. We expect to plan for about ten more meetings in February to cover the entire State. The State Board is ready to do its part, and the money appropriated is for all the people, all the farmers, and we feel that Morris county ought to have its share.

There are other counties where the County Boards of Agriculture are lagging. Morris county is not alone. Let us get up a new interest in this great work; as Mr. Frelinghuysen has said, "Let us co-operate and show the Legislature, as well as other people, that we are alive, that we mean business." The Morris County Board report this year—here on a strip of paper—simply states that they met and the officers were elected, and does not give any information to people outside of the State of what Morris county contains, or what it is doing. One of the objects of the State Board is to disseminate information by our reports

and by correspondence, and we must rely on the County Board for county information. We get inquiries asking about Morris and other counties every few days, and we need this information from the County Board.

A gentleman said yesterday, "I have lost a thousand dollars for the reason that we have not any of those meetings in Morris county giving us this information."

I say that the object of the State Board is to promote agriculture by disseminating information on agricultural matters, and we want the various counties to have it, and they ought to have it.

Mr. ——— ——— —Mr. Chairman, I feel it my duty to take some exception to the remarks of the President of the State Board of Agriculture which he made in regard to the stumps that are left in Morris county. Perhaps he doesn't know as much about Morris county as he might. Perhaps more. But I will say that we have one of the largest peach orchards in Morris county that there is in the State. Why, that land grows hundreds and thousands of baskets, and Morris county is growing them to-day.

In regard to Mr. Ely, I want to testify that we had a lengthy report from our secretary, why it is not published is a mystery to me; that is what I would like to know. It must lie either between the Secretary of the State Board or our secretary. one or the other. I would like to know.

Secretary Dye—No such report has reached me.

Mr. ——— ——— —As for our County Board, if you gentlemen had been down there this year you would not have found us dead, but you would have found us quite some alive. I have not been a member more than perhaps fifteen years, but I want to say I have frequently seen in different papers in Morris county a call that our Board was going to meet, yet we got no more than a few people, possibly four or five miles away. I do know that meetings have been called, and that in Morristown, and I do know that there were hardly enough men in that meeting to make it appear as a Board meeting, and I am sure our Senator from Somerset does not live so far away but what he can get

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there easily, easier than to get to Trenton, if he wanted to come and speak to us, and at our meetings everybody is privileged to get up and ask questions of any of us.

Those meetings have been frequently called and also we have had some of the professors from the Agricultural College in New Brunswick.

We had a meeting last year or the year before, right on Mr. Ely's farm. And Mr. Ely was appointed a Committee to look over the affairs in Morris county and give his advice in reference to this subject.

I want to say right here, though, that Mr. Ely is one of the largest fruit growers, probably, there is in Morris county, and can show some of the finest apples grown in the State or in any State in the Union, and has for nine years, and never missed one month in all that time but what he sold apples in the market. That is more, I think, than any other fruit grower in the State of New Jersey can say, and possibly any State in the Union.

Mr. Ely was appointed a Committee of one to look around and at the orchards and see the farmers and advise us about the matter.

It does seem to me as though the State Board is misinformed in regard to Morris county. We send out notices, we print notices of the meetings; whether that was done this last year or not I cannot say. I have seen it in different years.

I am informed by a member of the Grange from Passaic county that he did not know anything about it, and yet we had a member right close by, not far away, that did know all about it, and I don't see if he wanted to get there why he could not get there if the rest got there. But maybe they were not active members.

Now, it does seem to me that there has been some little friction somewheres or other between somebody and the Agricultural Board of Morris county or we would have been probably in as good order as some others. And I think if you will sift over the Agricultural Boards of the counties you will find we do not stand down to "Z."

Vice-President Cox—The information that comes to the State Board usually comes from the Secretary of the County Boards. The officers of the State Board may not have been misinformed, but it is just barely possible that they have not been informed.

The record of the Morris County Board during the past year, which is not an exception from previous years, is contained in this slip of paper which I have here. The information coming down from the County Board of Morris county to the officers of the State Board is contained in that slip of paper.

Now, certainly, if there is active work done in Morris county, the officers of the State Board should have the information and they are not in a position to acknowledge that fact. We do not know it. It is our right to know it. The officers of the State Board have a right to know from the officers of the County Board what the various County Boards of the State are doing, what they have been doing. And I think the suggestions offered by the President of the State Board are directly in line. If the County Boards are going to maintain the State Board, they have got to get busy, and if the members connected with the County Boards do not get busy, and do not awaken an interest in their own counties, how can they expect the officers of the State Board, the President of the State Board, to support and maintain the county organization in Morris county, for instance, that will be a credit to the county. The reports that come in from Morris county, and a few other counties, are not a credit to the County Boards of the different counties.

I think the suggestion of the President will be carried home, not only by the representatives from Morris county, but by the members representing other counties in the State, and it is fair notice; boys, now, get busy and do something.

We will have to take up the regular order of business at this time, and we will receive the report of the E. B. Voorhees Agricultural Society, presented by Mr. Charles S. Van Nuis, of New Brunswick.

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Report of the E. B. Voorhees Agricultural Society.

At a time when farming was far from popular and when agricultural education was lightly esteemed by the masses, Dr. George H. Cook inaugurated the work of agricultural experiment and instruction in New Jersey and at Rutgers College.

Dr. Edward B. Voorhees, whose name our Society proudly bears, was largely instrumental in elevating agricultural education to its present high plane of popularity and helpfulness. He, it was, who denominated the farmer as "Scientist," and we may accept his statement as authoritative, because he qualified early in life as farmer and later received the degree of Sc. D.

Dr. Voorhees' native ability and scientific training gave him a broader view of the chosen field of his life work than is accorded to most men. His keen foresight depicted for him what our State is now realizing from the profound research work of his worthy successor as director of the New Jersey Agricultural Experiment Station, Dr. Jacob G. Lipman, whose work is familiarizing the student of agriculture with the possibilities of the soil as a laboratory of natural forces which await his intelligent direction to produce an abundant harvest.

The short courses in agriculture at Rutgers College are being more largely attended each succeeding year, the attendance this year taxing the lecture rooms and laboratories of the Short Course building to their utmost capacity.

A very large percentage of the short course students each year become members of the undergraduate division of the E. B. Voorhees Agricultural Society, and, upon graduation, most of these become active, sustaining members of the graduate body. The membership, however, is not restricted to graduates of the short courses, but anyone engaged in farming, or in the advancement of agricultural knowledge, is eligible.

Such a body of men as I have the privilege of representing before your honorable board to-day, with its annual increment of student members, together with the more gradual increase in numbers from other sources, is destined to exert a leavening influence upon the farming communities of our State, possibly exceeding our most sanguine hopes.

In former years co-operative experiments were planned by our Executive Committee and enthusiastically received by members who agreed to carry out the specifications of several tests and demonstrations.

One dozen experiments were outlined for the season of 1910, most of which fell far short of the desired goal because of the lack of the important factor of supervision.

During the season of 1911, fewer experiments were proposed and these were carried on by our farmer members under the guidance of a visiting member who in turn received direction from the State Experiment Station staff.

It was considered advisable to extend the experimental operations over as large a field of varying conditions as the available funds of the Society would permit. Accordingly offers were accepted from members grouped near convenient railway lines, or accessible by a moderate expenditure for travel, to conduct three lines of experiments, covering a territory from Sussex county to Salem county.

1. Eight experiments were conducted to study the comparative values of four different top dressings for meadows. Commercial valuations of marketable hay, in pounds, and chemical analysis of digestible food nutrients contained in samples of these were determined and compared.

2. Two experiments gave valuable information in the matter of staking early field-grown tomatoes for market.

3. Three experiments, to compare relative value of three different spraying materials containing both insecticide and fungicide ingredients for the spring and summer spraying of apple trees, gave overwhelming evidence in favor

of such spraying, with approximately equal efficiency of the spray materials experimented with.

The tabulated results and details of these experiments are now in press and will be available for distribution in bulletin form at our annual meeting in March.

Plans are being formulated for a continuation of some of these tests as well as additional experiments in other lines of agriculture, horticulture, feeding, etc. We have on file offers from members, and from those who will become members, to conduct new experiments as our financial strength for supervision will warrant.

If properly encouraged and directed these co-operative experiments will be sources of valuable information for record not only, but object lessons of no small significance. The gospel of good agriculture will be preached by these missionaries of the short courses in agriculture and of the E. B. Voorhees Agricultural Society. The sermons will be illustrated lectures, which are as much more potent than the printers' ink of bulletins as are the enacted plays of Shakespeare more impressive than the lines. The converts will be so grounded in the faith that their possible indifference to the experiment station and all that emanates therefrom, will be changed to a brotherly affection and desire to help and to be helped.

An overwhelming majority of the farmers of the State own allegiance to the experiment station, and will confess to large benefits derived therefrom, beside enjoying the sense of confidence and security in claiming so able an ally in confronting new problems in agriculture or in combating noxious insects or threatening disease. The all-too-numerous minority, however, through ignorance of the plan and scope of its work for them, are not in accord with the station.

That New Jersey has no monopoly upon this type of farmer was illustrated by a statement made during "Farmers' Week," at the College Farm, by that live exponent of truck farming, Prof. T. C. Johnson, of Virginia, when he related his early experiences in connection with the Virginia station in overcoming the antipathy for that institution and its works as shown by some of the truck farms of the region. After conversion these same farmers became Prof. Johnson's most loyal supporters.

Continued association with those tillers of the soil, who devote long hours of arduous labor to their life work, reveals a condition of mind among this class difficult to understand. Many such accept little as of practical value to them unless obtained from a source where an equal amount of manual labor is expended. Such men emphasize the value of brawn and belittle the benefits of brain to average farm conditions.

It is evident the Experiment Station cannot live up to its full measure of usefulness, nor can the farmers of the State receive the benefit from the station that is their due, until a bond of sympathy is established between the station and every farmer within the bounds of the State.

I can conceive of no medium so efficient for the consummation of this happy result as the farmer who "does things" and who gives due credit to the State institutions for their share in his agricultural advancement.

As evidence of the above, the township of Newton will probably use more material for the summer spraying of apples in 1912 than in all her history, due to the object lesson of one E. B. Voorhees Society experiment in 1911. A section near Bridgeton will reap a similar benefit from the same source. These cases are like "Mahomet going to the mountain."

There is literature a plenty pointing the way to short cuts to agricultural success, but palpable practice seems more convincing than printed precept. However, this same literature will become more valuable in any community after interest has been awakened by experimental demonstration conducted by farmers themselves.

Dr. Voorhees, of tender memory, was heard to remark, a few years since, that the West Jersey and Seashore Railroad Company, took too much credit to itself for the greatly increased freight traffic over its lines following the lectures and demonstrations from the educational trains furnished by the

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railroad company. He estimated the influence of the several short course students settled in the adjacent territory had accomplished more toward this increased productiveness than had the combined educational work of the trains and farmers' institutes.

Prosperity seemed to pervade the atmosphere in that section of the State just referred to, during my visits there in 1911; but there, as elsewhere throughout the State, I found the fields of the short course graduates giving evidence of the most advanced methods and generally being the most closely studied by those having similar interests in the community. In several instances, too, these short course men were found to be masters of their respective granges and men of prestige in their home communities.

In several States, where direct appropriations of large sums of money are made for the type of extension and demonstration work now being done by our Society, similar societies are conducting experiments in improvement of live-stock, fruit production, vegetable gardening, field crops, floriculture, poultry husbandry, use of fertilizers, spraying, soil improvement and marketing.

One of the more aggressive of these societies is the Students' Experiment Association of Wisconsin, with a membership of several thousands.

The States publish the reports of these societies so the farming public may profit by the experiments.

Our sister society, connected with the Guelph, Ontario Experiment Station, last year conducted over 4,500 experiments.

The possibilities of the E. B. Voorhees Agricultural Society will increase with increased membership and nothing will so conduce to growth as activity. Accordingly, it is the purpose of our Executive Committee that the experimental and demonstration work of the Society shall be as comprehensive and as exhaustive as our corps of workers and the facilities of the State Experiment Station can make it.

President Frelinghuysen resumed the chair.

President Frelinghuysen—The last address upon the program before closing the business of this convention of the State Board of Agriculture will be a rare treat for you.

New Jersey, in times past, has had, as a means of transportation, waterways across the State, and from Trenton to New York, and those waterways have come into disuse. There has been a national campaign carried on for ship canals and deeper waterways, not only that the farmers should prosper, but that the merchants and manufacturers can have better facilities and lower rates for transporting their merchandise to the market.

There is one man who has been the pioneer in this cause, who has fought aggressively for it. He is the Congressman from Pennsylvania to the Federal Congress at Washington. He is a man well versed in the subject, and has come to-day to tell you farmers of New Jersey about waterways as a means of transporting farm produce.

I now have the honor to introduce to you the Honorable J. Hampton Moore, Member of Congress from Pennsylvania. (Applause.)

Mr. Moore—Senator Frelinghuysen and gentleman, I am glad I am the last speaker this morning, because the topic which I have agreed to speak on, at the request of your secretary, Mr. Dye, is one that may be extended indefinitely. But, I have been looking over the timetable and have found that it will be necessary for me to leave a little after twelve o'clock. Hence you need not expect a complete exposition of the subject of deeper waterways this morning. I will do the best I can in the summary which I hope to present.

Being a native Jerseyman, it is always a matter of great pleasure for me to come to this State. I was born upon a farm in Woodbury, and I have that love of the soil which is sometimes not understood in Wasington, when I attempt to talk in the interest of the factories and the congested centers along the Atlantic seaboard. A young boy, brought up upon a New Jersey farm, of the old type New Jersey family, never forgets his training, and, I trust, never loses his love of the old soil from which he sprang. It is a matter which those who sometimes take the jocular view are inclined to press upon people elsewhere, that those of us who are natives of New Jersey, sprang from the Sweet Potato Hills, that we come up in the Cantaloupe Patches; and I have always had a great pleasure in admitting the fact and in praising the quality both of the cantaloupes and of the sweet potatoes. (Applause.) I recall nothing that has come out of the soil, even with the advantages of modern scientific farming, cultivated, as it were, by the Department of Agriculture, that was so succulent, that is to-day so attractive as the old Jenny Lind cantaloupe that we used to raise in the southern section of this State. And even in these days, when we are beginning to bring potatoes from abroad, and the question is arising which some of you necessarily must discuss, whether we want Irish potatoes to continue to come into the United States, I am proud, I am proud when I think of these questions arising which affect you in New Jersey as they do those who raise vegetables along this seaboard. I am glad that we are able to boast of the quality of the New Jersey potato, and to say that in its productivity along the Atlantic seaboard, east of the Appalachian chain, at

least, we are fourth amongst all the States from Maine to Florida.

The other night, in discussing this matter hurriedly at a meeting of the New Jersey Society in Pennsylvania, contending that New Jersey's products stood foremost and gave her a fine rank both as agricultural and as a manufacturing State, the Governor of Virginia interrupted me to say that Virginia exceeded New Jersey. But I took him back to the statistics and found that there are but three States along this seaboard that exceed New Jersey in the cultivation of potatoes, to wit, Maine, New York and Pennsylvania. We are still fourth, in New Jersey, in rank in the cultivation of potatoes.

When it comes to manufacturing wealth, and you understand that the test of all branches of wealth is the product of the soil. We must first till and produce from the soil before we can develop the factory; and when it comes to manufacturing industries along the Atlantic seaboard, and we are supreme along the Atlantic seaboard in the manufacturing line, New Jersey stands fourth again, being exceeded only by New York, by Pennsylvania, and by one other State which I have forgotten for the moment.

And then when it comes to actual wealth, production both in agriculture and in manufactures, we are exceeded by but three, New York, Massachusetts and Pennsylvania.

Now, when those of us who spring from New Jersey want to boast of the fact that we first see the sun, before it sets upon the far west, and that we have just some little advantage in that respect, since we get up earlier than they do, it is a pleasure to be able to say that while fourth in manufactures, fourth in potato production, fourth in wealth of all the States, we are but eighty-two hundred square miles as against three million square miles in the whole United States proper, or the merest thumb check upon the map of the several States. (Applause.)

It is a matter of some satisfaction, it is a matter of some pride, probably to us, when we look at that splendid map covering an area of millions of square miles, to say we come from New Jersey; you can scarcely see it there, but we are fourth in wealth

production of all the States along the Atlantic seaboard. (Applause.)

I mention these little matters pertaining to our native State because I want to make some comparisons in a broader sense, and treat the subject of waterways from the broad view if it is possible. And, first, I will tell you that I was driven into the study of the question of waterways through a primary desire to promote and develop the Delaware river from the sea to the port of Philadelphia, a distance of sixty miles from the ocean, to what was once the greatest port of all the ports of the States.

I found that while we were struggling to obtain some recognition for the Delaware, that there were three hundred and ninety odd Congressmen from all sections of the country struggling to obtain recognition for their streams, some of which we had never heard of. And when I became rather vociferous in behalf of that stream which we all love so well, and which has such vast historic interest, there were six of the three hundred and ninety who came out of the far West, who even asked me, "In the name of heaven, where is that river Delaware at?" Since they had never heard of it before (laughter), I said, "This is amazing. Perhaps you have heard of George Washington. Perhaps you have seen the picture of Washington crossing the Delaware. If that is the nearest I can bring you to a realization of the importance of the Delaware river, then please run back to your school days and give us credit at least for having heard of the father of your country. But if this does not satisfy you, let me tell you that all throughout this whole country, the Mississippi, with its twenty-five hundred miles of length from the lakes to the gulf; the Missouri, with its two thousand miles of length from way up the far Northwest down to the Mississippi, with all the other fifty thousand miles of navigable and unnavigable rivers thrown in, there is no river in the United States comparing, none that compares in commercial importance with the river Delaware, flowing sixty miles to the sea out of the port of Philadelphia. (Applause.)

And, as a result of this kind of bantering, we realized that it was necessary to teach the people in the West and to teach the people in the East, who had forgotten it, that we had something

to work for and something to contend for in this section of the country.

The trouble was that you men upon the farms, adhering very much to the old methods, coming out of your shells as it were, only after scientific farming came into vogue, beginning to fraternize and to associate and to assert your rights, to confer and determine upon what you wanted only after you began to form your granges and your associations and your State boards. But there you had been getting along on a hundred acres, or, as my father used to try to do, on two hundred acres, which broke him, and you were not watching these fellows out West who had hundreds of thousands of acres and striving to feed the world while you were content to feed the villages.

And while all this was going on with the agriculturalist, the manufacturers of the East, having a sort of a monopoly of the markets of the West, were satisfied with existing conditions. They did not strike out to meet the competition which was inevitable, since we ourselves were sending the best fruit into the West, and they were energetic and forceful fellows there. Both manufacturers were full of their trades, content with their local environments, until we woke up. I, for instance, started this question of the Delaware in the halls of Congress, and found that they had the voting power. That they had nearly three votes to our one. That they had the population; that they had nearly three citizens to our one.

We were still content while they were building railroads, great terminals, taking money out of the treasury for their waterways, getting money out of the East for the construction of large improvements, when we were going on with the conditions which prevailed when our forefathers started here a hundred or a hundred and fifty years ago.

Now, I said I wanted to speak to you on this topic in a broad sense, and I am going to show you the reasons which culminated in the formation of the Atlantic Deeper Waterways Association, of which I happen to be the President, and through which during the last four years we have conducted an agitation along this coast that resulted last week in the United States

engineers sending to Congress, under its authorization, a report upon our entire Atlantic seaboard, which means that if we want now to lift ourselves out of the lethargy, the comparative lethargy in which we have fallen, we may do so if we get active along the Atlantic seaboard, as our friends in the Middle West are active for the Mississippi.

In the resolutions adopted by the Atlantic Association, at its recent convention in Richmond, a convention attended by representatives of every State along the seaboard, from Maine to Florida, these provisions are found:

We direct attention, the resolutions say, to the facts that,

First, between the years 1900 and 1909, a period of ten years, just one decade, disasters to shipping along the Atlantic seaboard involved nearly six thousand vessels, the loss of twenty-two hundred human lives, and the destruction of nearly forty million dollars' worth of property. All of which could have been saved and all future loss prevented by the expenditure of a few millions of dollars for the opening of an interstate inside deep waterway.

Second, that while one dollar—I want you gentlemen who are dealing in the freight business once in a while to catch this paragraph—that while one dollar will carry a ton four miles on a dirt road, at twenty-five cents per ton mile for every ton hauled over a dirt road, the most expensive method of hauling your freight; that while one dollar will carry a ton of freight four miles on a dirt road, ten miles on a first-class stone road, and 127 miles on a railroad, it will carry a ton of freight no less than 1,250 miles on the Great Lakes or upon a well ordered river bed or deep artificial channel.

I cannot give you the figures literally, but it was summed up by experts in 1909, and they showed that the rate per ton mile for roads, the dirt roads, which are the roads of the farmer, was twenty-five cents per ton mile. People complain of the increase in the cost of living. Some of us in the cities have the habit now of charging it up to the farmer, saying that he gets it. There are others who dispute that and say it is the employers; and then there are others who find other causes. But, if it costs twenty-five cents per ton mile to get your truck over the

earth roads in the country, either you pay it or those of us who are consumers in the cities pay it, and it is a charge against the commodity that perhaps ought to be seriously considered by those most concerned.

By roads which the farmers chiefly use, dirt roads, then the cost per ton mile is twenty-five cents.

On the railroads, which, of course, are the superior and the best means of transportation, we have nothing to equal the railroads in the methods of transportation in this country. I have never failed to give them that credit, because they have helped to develop the country; they have tended to build the country, they brought the wilderness to the city, they have civilized communities, they have helped in the organization of great peoples, they have brought Territories into States, they have brought the coasts to the coasts, the lakes to the gulf; but upon this superior means of transportation, when you ship by freight to the consumer or when you take back the material that you buy from the cities to run your farm, you pay from seven to eight mills per ton mile, less than one cent, but so far below the earth road rate as to simply be startling in the difference.

But, when you get upon the waterways, when you get upon the canals, when you get upon the rivers, when you get upon the ocean, the rate per ton mile falls from the twenty-five cents on earth roads, and the seven and eight mills on the railroad, to one mill and a fraction of a mill upon the waterway.

When you are discussing in your conventions the problem of the increase in the cost of living, bear in mind the relative effect of the cost of transportation. And if I have not made this clear to you, let me cite to you the report of the Boston Chamber of Commerce for the year 1909, and parenthetically, it is known to us all and it is not necessary to tell Jerseymen that the Boston Chamber of Commerce is presumed to be the most scientific and the most learned trade body in this country. In their report for 1909, hedged up as they are with their colleges of learning round about them, with their manufacturing institutes, and their lack of farming, then find that the hundred millions of dollars that they pay annually for coal to run their great industries and to warm their homes, that that coal was

worth just thirty millions at the mines, and that they paid in transportation rates seventy millions of dollars, or two dollars per ton for every one dollar's worth of coal they received.

Now, when I make some remarks with reference to the Middle West again, you want to bear in mind these facts, because we are not so far away from Massachusetts. Some day this question may affect us as seriously as it does them. They have not yet thoroughly awakened to it, because they have been subject to one means of transportation, except such as would be brought in by ocean-going vessels and by those barges that never should go to sea, which are being so constantly wrecked upon the Massachusetts coast, carrying down coal, carrying down the product of the farmers, carrying down the lives of the men, standing in the way of navigation in their long trains and ropes stretched out far behind, which in times of fog and storm are simply a menace to the legitimate navigation of the high seas.

If I may present to you here but one or two other brief illustrations, showing the difference in rates, you may realize it; let me say that it is a matter of frequent comment here in the City of Trenton, that you cannot get your heavy freight to the City of Philadelphia as expeditiously by rail at times as you can by shipping it to New York, putting it on a steamer, schooner and sending it with all the insurance risk down the shoals of Barnegat, around the dunes of Cape May and up the Delaware river to that city.

I say the railroad method is the best; but this morning I was in a train crowded, when I asked for a seat in a parlor car, I was told to go into the smoker. If I go to New York and ask for a seat to Boston, I am told they are sold out. They are doing a profitable passenger business. They take all the profitable freight business that comes, but when it is a question of moving perishable freight such as yours, or moving those heavy commodities such as stone and iron, coal, sand, mortar and brick and materials that enter into building construction, the same celerity is not observed, and there is need for relief from the congestion that creates demurrage and delay and leads to expense and increased cost.

I have said that in the city of Trenton it has been a matter of frequent comment. The facts have never been disputed. That you can bring in on ocean steam lines from most any port in France, a ton of clay suitable to being worked up into fine pottery in the city of Trenton, and it will cost you less to bring it more than three thousand miles across the ocean than it will cost you to ship it from Jersey City by rail to the city of Trenton. And by the same deduction, you can bring tons and tons of material, to be worked up by the American workmen in this country, and you can land it cheaper at the port, you can work it up cheaper, and you can work it up in the city of Trenton and haul it over the seas cheaper than you can ship it to the Baltimore market, cheaper than you can ship the finished product from Trenton to Baltimore.

When it comes to farm produce, I think there are those of you who have observed the use to which the Chesapeake and Delaware canal has been put in active farming seasons. We raise many tomatoes in New Jersey that do not develop as early as they do in Florida and in the Southern States, but we raise many of them, and there have been times, and I have witnessed the period myself, when our produce from South Jersey was used in the canneries in Baltimore and in Wilmington and in points along the route of the Delaware and the Chesapeake and Delaware canal. I have found it as the barges carried the produce down, taking it away from our farmers and finding a market for it when we were glutted, that they brought back material from the South, sometimes lumber, occasionally cotton, and they got it to the northern manufacturer, for the northern market, cheaper and easier than they did in the old-fashioned way.

The State of New Jersey has been doing a great deal lately in the matter of waterways, and I don't know whether you are ever going to get it, but the promoters of the inland waterway along the coast of New Jersey, to my mind, deserve a monument at your hands some day. Whether you will build it or not is a question, because the moment a man starts anything in these days, starts anything for the benefit of the common people, he always runs up against somebody else who understood it all before,

but who has some objection, some specious argument. You have got to look out for obstructions as you go along. But, I say, you have done a great deal already along the coast of New Jersey. Have you been wise as farmers? Have you been wise as statesmen, Senator Frelinghuysen and Senator Gaunt? Have you been wise in spending a little New Jersey money opening up those channels along the coast?

Well, I presume you are in business in this State. I have shown it by the figures I presented a moment ago, that you are growing wealthy in New Jersey. You are getting tied up like they are in Massachusetts. Your means of getting in and getting out are limited. But you have found you had productive land there. You have found also you had the mosquito there, and you needed water to flow through. You have also found that the railroads have built there and people came with automobiles and also left their money, and you have found in this waterway, or these waterways where you are struggling with six feet of depth along the Atlantic seaboard, that maybe a motor boat has come and he has come and settled and left his money on the way. And you have found this, down on the southern end, with which I am more familiar than I am at the upper end, that the oysterman has begun to realize that he can get out now that you furnish him the means, and he can get his stuff to the market cheaper than by waiting until it perishes at the station.

And the proof of it is in the loss of two vessels at Atlantic City, one last year, one this, struggling to get a haven there where they ought to have had a haven long ago. With the produce of the New Jersey farmers going to the markets in Philadelphia and New York, and with the merchandise and the stores and the farming implements coming out of the factories of Philadelphia and New York going back to the farmers on the New Jersey coast.

Let me tell you, because I am taking your time now, and I get enthused when I start and have so much to say it sometimes is disjointed, let me tell you now, if I have said anything to convince you that an improved system of waterways in New Jersey would be a good thing, then let me tell you of the movement in

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the Middle West, that ought to make you move here even as a matter of self-protection.

We had a meeting of the Rivers and Harbors Congress in Washington two weeks ago. And to that Congress there come representatives from every State, and New Jersey has hers; they are strong, earnest men. Some of them come from the boards of trade, some of them come from organized bodies that have suspicions with regard to this thing and finical ideas which are two hundred years old in this country, and have been hauled back from time to time for cause. Some of them are earnest, patriotic men, who want to see something done for their communities, and are willing to labor unselfishly. And at that Congress what do we find? Let us compute the figures a little. Let us make comparisons and see where we stand, and see whether it is worth while for the agriculturists to join the other interests of this country and build up an effective means of transportation and make it free.

We have appropriated, we find, for all rivers and harbors in the United States down to 1907, a total of about five hundred and fifty million dollars. That is what the government contributed. Some people say that is an enormous sum, but it stretches over a period of three-quarters of a century, since Daniel Webster in his reply to Haine referred to the uncompleted breakwater at the mouth of the Delaware river. Five hundred and fifty million dollars for all rivers and harbors, and we have got fifty thousand miles of navigable and unnavigable rivers in the United States since way back in the early twenties.

You say that is a large sum for a government like this to appropriate for a country three million square miles in extent?

Yes, and that sum will throw in some improvements made in the Philippines and Hawaiian Islands and some others of our Colonial possessions.

Why, the single State of France, which you could put inside the single American State of Texas, spent seven hundred and twenty millions since 1814 alone, improving its navigable waterways, putting barges on its canals, putting the grain and the feed and the potatoes and the cattle and the live stock and fruit

and second and third class matter, putting that on the water-way and sending it at the lower rate that the water affords, relieving the railroads of congestion, giving them an opportunity to carry the personal freight and passengers and the live freight.

I do not think the comparison hurts us; but so long as we spent five hundred and fifty millions up to 1907, let us see where it went.

Now, you have been busy here, and, oh, they have been frightfully busy in New England, because they are very smart people up there. We have been so slow in Pennsylvania and New Jersey and other manufacturing centres, that of that five hundred and fifty millions of dollars spent in that period of about seventy years, by the active hustle on the part of the western representatives who now control Congress, about two hundred and twenty millions went into the Mississippi valley, from the lakes to the gulf. Pretty nearly half the whole amount.

You have been sitting here on your farms and potato hills in New Jersey, content with the old methods, while the harbors of the rivers have been closing up and the Tuckahoe has lost its shipbuilding and the opportunities which were at hand have been neglected to make that a means of business and the opening of every farm in the vicinity right down by Egg Harbor and down through there. You have allowed all that to go by, and the streams have sealed up. But the Middle West gentlemen have been taking the money, and, of course, you have contributed the most of it.

You may agree with me and you may not, with regard to the tariff system, but the fact remains that that furnishes one-third of our revenue. We take it in at the custom houses. I am not raising this for political purposes, but to state the fact. We take in more than three hundred and thirty millions of dollars per annum at the custom houses in this country, and we take in eighty per cent. of that in four custom houses, New York, Philadelphia, Boston and Baltimore.

Then, when we come to apportion our money for rivers and harbors, we find then what we found in the division that I stated before. that the West comes in, it has got more people

than we have got, more demand for it than we have got, greater area than we have got, greater projects than we have got, and we give it out of our custom houses. It is not our business exclusively. The whole country contributes in a way. But eighty per cent. of all is collected at those four custom houses, and about half of the revenue of the country for rivers and harbors goes into the Mississippi valley.

Now, will you let me tell you something about that. It is not offensive at all. I believe in the great Middle West. I am just as proud of the man who comes forward from Missouri and tells me he is an American and animated by the same impulses that we are in New Jersey and Pennsylvania, as I can be. I like the spirit of the man from California and from Oregon who comes forward and says our interests are kindred, we should stand together for the protection and development of the whole country. Or, I like that man from the South who tells me and boasts of it that he still retains the Anglo-Saxon blood while we are constantly drifting into foreign population in the East. The facts are as he stated them. We are no longer native Americans along the Atlantic seaboard. There the population is a mixture and we are gradually going over to the alien population. There is an excess of it in all the large cities and the Atlantic seaboard to-day, and when the southern man, out of a sort of native pride, tells me that he is the old America, I will hear him tell about it. But when he comes up and tells me that he has got the voting power, and when the western man tells me he has got the voting power, and they want a million dollars this year for the Trinity river in Texas, which has not got the business of the Tuckahoe in New Jersey, I begin to say, "Well, you are all right, on your Americanism, but I wish you would be fair on your appropriations." (Applause.)

Take the great Mississippi valley. The father of waters. And when they were getting these appropriations two or three years ago, holding us down a little bit on the Delaware, they spoke of it as the bread-basket of the country.

And it is a mighty line right down through the country to the sea. God Himself ordained that this stream should be made.

There it goes, right down to the gulf, right on up to Canada. An immense highway. Why this is the dream of the engineers and the constructors of the ages. There is your Delaware and your Chesapeake over there, but you are effete, you have gone. The trend is westward. Bishop Berkeley said the trend of empire was westward. And he was right. Why, it is proven for us by every bit of history. First, the movement out of the Mediterranean to the West, then the trend toward the Mississippi valley, then the trend toward the Pacific coast, show the trend. Hr. Hill sees it—James J. Hill sees it, and he is doing business with it on that line now. (Applause.)

But that is what our western friends say, and I have been trying in my feeble way as a Jerseyman and as a Pennsylvanian to say, "Hold on, we have got thirty-seven million people yet east of the Appalachian chain, and that is one-third of your entire population." But I want to tell you this my western and southern friends, and I want to say this to you, my Jersey friends, that while we are thirty-seven millions east of the Appalachian chain, and have a population of ninety-nine people to every square mile, while west of the Appalachian chain they have a population of thirty-one people for every square mile, showing the vastness in the area; they have been shrewd enough taking our money and their money, but taking our money for investment and taking our money by appropriation, they have been shrewd enough to build up railroads until they have got seventy-two per cent of all the mileage of the United States, and we with our congestion have got but twenty-three per cent. of the total mileage of the country here. And in St. Louis, where they have just exceeded Boston in population, and where they have, despite the fact that nobody but Massachusetts can make shoes, and Burlington, New Jersey, where they have exceeded Boston in shoe manufacture—look it up for yourselves—they have got fifteen or twenty trunk lines and railroads running everywhere, in all directions. While in Boston they have got a coast line with some steamships, and, the truth might as well be stated, they are all run by the railroads. I am not an anti-railroad man at all, but the facts ought not to be disputed nor concealed.

They have got just one line of railroad, under one control, and I thought they had two up until last year, but they have consolidated them, and you get in and out in the same old way.

Can Boston stand that very long? Is it a competitor of St. Louis? Well, then, it had better get a little move, had it not? Better begin thinking about getting material in and out, had it not? Better begin to think about saving that two dollars a ton on coal, hadn't it?

I don't see how long it can last, and I don't want anything like that to overcome New Jersey and Pennsylvania. It can't hurt us much on the coal question, because we furnish it very largely, and I suppose we are getting a great deal of benefit out of the freight, but we are still a pretty big growing State in Pennsylvania, and on some lines we exceed any State in this Union. Particularly in the matter of rye production. People don't know it. We are only third or fourth in dairy products. There are very few lead us. We can take care of ourselves. And Jersey, with her fertile soil, probably can take care of herself, but Massachusetts could not. She has not got the soil. A rock-bound coast and rocky land. Raise chickens. Probably that would bring down the price of eggs if that is desirable, but that is about the limit of their ability to produce for themselves.

Now, as to the Middle West. I told you they took nearly half of the appropriations made up until 1907.

Now, what has it done since?

Since 1907 the government has appropriated, or Congress has—and I have told you the voting power is in the West—has appropriated an additional one hundred and seventy-nine millions of dollars for rivers and harbors in the United States. Now, we have been fairly active these last four years. We have got more than we have ever had before proportionately. We have got guaranteed a thirty-five-foot channel in the Delaware; we have got a guarantee of a twenty-five-foot channel to Trenton, and have got a guarantee of the engineers to carry that channel to New York and to Boston if the engineers will help us. We have got a great move forward. But of that one hundred and seventy-nine million dollars appropriated since 1907, we find the Pacific

coast, which has not very many rivers to look out for, has taken nineteen millions. Keep the figures in your mind, nineteen millions for the Pacific coast. They have got nearly everything they wanted up there for the Columbia river, and far more for it than we have for the Delaware. Think of it. A river, the commercial use of which has been in vogue for thirty or forty years, has taken more money out of the treasury of the United States for vast improvements, construction of dams and other work. What would the men say if we ever thought of doing such a thing here. The whole Pacific coast since 1907 got nineteen millions out of the hundred and seventy-nine millions appropriated. The Atlantic coast, with its increasing activity from Maine all the way down to the gulf, east of the Appalachian chain, I have had it all figured out, got fifty millions, an average of ten millions a year for all the work we have to do.

That leaves a hundred and twenty millions. Your mental arithmetic is as good as mine. That leaves a hundred and twenty millions. Now, where do you think it went? It is the same old story. It went from the lakes to the gulf, in the Mississippi valley.

Now, farmers, scientists, financiers, experts, in the world's economy, statesmen, do you think they are taking that two hundred and twenty millions they got out of the first big appropriations and this hundred and twenty millions they are getting out of the appropriations during the last five years since 1907, for the purpose of dredging rivers only? Does it occur to you that if we spent that money, some of it, along the line from here to New York, from Bordentown, getting into Trenton and going on to New York from Trenton, and on the Delaware down to Philadelphia, that we would not hold our population a little better than if we would not give the boys something to do? That we would not create a little more business? That we would not see a factory rising here and there? That we would not find a farmer coming down that way instead of taking the chances he does to-day to get his stuff shipped in the old-fashioned way? Don't you think that land values would go up a little? Don't you think there would be a new court-house once in a while? And don't you think we

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would stay a little bit of this opinion that we must all send our boys to the West in order to have them prosper? And don't you think we have got plenty of opportunity here for improvement?

I spoke of congestion a little while ago. I don't know how many of you have thought of it, but we are not so awfully congested in the three hundred and seventy-five thousand square miles east of the Appalachian chain, except about the cities. We have left the farms, and three-fifths of all our population in that area to-day lives in the cities. We need the farm and we need the farmer. But I want to say to you gentlemen, and some of you have not thought it out, that when you first started in this country, when my forefathers first started here, we lived along the line of the streams and we were pretty good farmers. We had to be. We took care of ourselves and we sold our surplus. We drew the water ourselves and we got down under the hills instead of up on top of them; because we wanted to be out of the cold and wanted to be near the water. Why? To be near the means of transportation.

When the railroads came, we began to move away from the water, to get along the lines of the railroads, and we turned from farming to manufacturing. Instead of ruralists we became city dwellers, and that restricted the power of production. The farm you found was not profitable living off from the waterway before but then it was not profitable to farm down on the waterways because everybody else was getting alongside of the railroad, where more business could be expeditiously handled. I think those conditions prevail to-day. I can take you through certain parts of New Jersey where lands are still waste. I can take you through many parts of Maryland, Virginia, North Carolina, South Carolina, Georgia, where the lands simply wait and cry out for a man to till them. And the Department of Agriculture has time and time again said that no more fertile land exists anywhere than exists along this coast. But all the people had gone along the lines of the railroads, and the carrying capacity as well as the productive capacity of the country has been limited to the carrying they can do for you.

Now, we want to open up the waterways and want to give more people employment in this State as in other States. I tell you of the enormous appropriations to the Middle West, and I ask you whether you thought all the money was merely for the purpose of dredging streams? Why, they will never hold the Mississippi, so long as you and I live. Turbulent, violent, uncertain stream. With its Missouri and Ohio. Twenty million dollars is to be spent in a contract on the Missouri until the work is supposed to be completed.

How much business have they in the way of tonnage, commerce, on the whole Mississippi system, from the lakes to the gulf? I will throw in the Mississippi, I will throw in every tributary of the Mississippi with that great extent of soil, and tell you that the engineers' statistics, the best that can be collected for the year 1907, show that the total tonnage on this vast stream or system of streams on that great lateral, which it seems the Lord planted there for the benefit of those people, and for the country; they did just 4,003,000 tons. And that is just about one-sixth of the tonnage of the river Delaware on the sixty miles from Philadelphia to the sea. We got about thirteen millions for the Delaware river, and they got two hundred and twenty millions up to 1907 for the Mississippi, and they did not do one-sixth the business that we did.

I would like to see a system in New Jersey and other States like prevails in England. A stream comes in from the east and one from the west. They are not very far apart. Unite them. Unite the Tuckahoe with Timber creek. Take the river that runs east out of the Delaware and connect it with that which runs west out of the ocean, or with the inland waterway across New Jersey. Will it benefit the farm? Will it make it worth while to live upon the farm?

My judgment is when the farmer finds he can do business he would rather work upon the farm than in the factory. My judgment is if the question of transportation is to be solved for these extensive products which cannot get in connection with the consumer, that the farmer will do it, and that then we will all do more business, because the prosperity of one depends upon the prosperity of the other.

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Gentlemen, I have exceeded my time. I will simply say to you that I appreciate the privilege of coming before the New Jersey State Board of Agriculture, and I regret if I have wandered a little bit. I have done it merely because I hoped to convey to your minds such thoughts as I hoped would be interesting and material. (Applause.)

President Frelinghuysen—After hearing the Congressman's address, in which he referred to me in glowing terms as a statesman, I must say I am willing to give up any title to that high office I ever had.

This is a subject of vital interest to New Jersey, bounded as she is on three sides by waterways. It is of vital interest not only to the State by reason of her present waterways, but by reason of contemplated waterways. Congressman Moore has spoken of his feeble efforts. I think those efforts have been anything but feeble. I think that he has handled this question in the Federal Congress with the tact of a general, because when we point to the fact that the Delaware is now navigable to Trenton, when we point to the fact of the dredging of the lower bays and inland waterways of South Jersey, and know that Congressman Moore has been the missionary who has raised his voice for these projects and the improvement of these waterways, we realize that it has been his deeds and not entirely his words which have accomplished those important improvements.

But there is more. There is a great subject of interest to New Jersey in this waterway question, and that is the building of a deeper waterway across the State, or from Bordentown, through the Delaware & Raritan canal, or from the Delaware at Bordentown straight across. I don't know what the project is of the Federal government, but I know that the Legislature last year passed a bill authorizing an appropriation of five hundred thousand dollars, when appropriated by the Appropriation Committee of the Legislature, to co-operate with the Federal government in any project on inland waterways that they might have, running from the Delaware down inland to the Southern States.

Now, I think that after hearing this splendid analysis of this question by Congressman Moore, who has come here to-day to meet the farmers, that it is up to us to urge our Congressmen and our representatives in the Legislature to do all they can for this project and to uphold the hands of Congressman Moore in the Federal Congress.

I ask you now to rise and offer a motion thanking the Congressman for coming here in our interest and explaining this matter in such a splendid manner to us.

Mr. Brown—Mr. President, I move that we thank Congressman Moore for coming here, and that we endorse the deep waterways proposition.

The motion was unanimously carried.

President Frelinghuysen—Before closing the business of the session, is there any other business?

The secretary has a resolution to read.

Secretary Dye—This is a resolution which has been handed to me:

WHEREAS, The farmers are suffering at the present time from excessive taxes for roads, caused largely by extensive repairs to our roads:

Further, that it is recognized that this excessive expense is caused by automobile traffic; be it

Resolved, That a committee be appointed to examine Commissioner Smith's report specifically, and to wait upon the members of the Legislature and ask for such legislation as will give the farmers immediate relief in the matter of road repair expense and speed regulation.

The resolution is signed by Mr. Quick, of Bound Brook.

The resolution was adopted.

The following resolution was offered by Secretary Dye:

WHEREAS, The law providing for nine trustees in rural districts of our public schools has proved unsatisfactory in its operation, and that we are suffering from lack of books and teachers of the proper kind;

Resolved, That a committee be appointed to take this matter up with our Legislature and ask for immediate action.

President Frelinghuysen—Does Mr. Quick wish to say anything on this subject?

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Mr. Quick—No. I think the president could make some remarks to enlighten us on this subject. I feel that the rural districts are all affected alike. I may be mistaken in that regard. The resolution speaks more specifically in regard to the nine trustees being there to displace the old rule of three, which seems according to the experience throughout the State to have been the better rule.

President Frelinghuysen—I will say for the information of the Board, as I said to Mr. Quick this morning, that last year, after an investigation of three years by a committee which I headed, we found that the conditions of the rural schools of our State were such that they needed better supervision and stronger effort on the part of the State Board to bring to the country districts the same advantages that were being obtained for the city districts. We feel, and I say it without hesitation, although I am not yet a member of the State Board to which I have been informed by the Governor that he intends to appoint me, whether I will be confirmed or not I don't know, but I understand that that is the plan—but I say this after having investigated this subject, that we believe that the schools of the country districts have not been properly looked after, and that it is the mission of the new board to direct to the country districts better supervision and better standards of education.

I might say that after investigating this subject we also felt that boards should be non-partisan; that all politics should be kept out of the school system of this State. That it is far too sacred a question to allow politics to enter.

We also feel that we have been drifting away from the old fundamental rule of the three R's. That we have been going into fads and fancies, so to speak. When we realize that not over ninety-five per cent. of the children that are educated in the State of New Jersey ever go beyond the seventh grade in the grammar school, we realize that we must up to the seventh grade prepare our children with the firm foundation of education. (Applause.)

And, therefore, we have incorporated a stipulation in the law that they shall be examined in reading, writing, geography, arithmetic, English, spelling, and that the proper tests shall be

made to give to the farmer's child and to the laborer's child and to the workingman's child, the proper foundation.

Now, we have our plans as to how to do this, and I want to say very frankly that very often the township boards themselves are to blame, because, rather than pay fifty or seventy-five or a hundred dollars more for an efficient and good teacher, they quibble, fearing to place a burden on the taxpayers. Gentlemen, in not properly providing an efficient teacher, and saving that seventy-five dollars, you are spending a great deal more and placing a greater burden on the taxpayers.

Now, when you realize that a young girl can go to New York or to the cities and can make from fifty to eighty dollars a month in typewriting and bookkeeping, when you are paying a school teacher three hundred and fifty to four hundred dollars a year, do you blame them for going?

Now, in regard to this question of reducing the number from nine to five. It was the policy of that investigating committee. They believed that the number should be reduced, and a bill was introduced and it was passed relating to boroughs. We introduced a township bill reducing it to five and it passed the Senate, but it did not pass the Assembly.

I am very glad, in view of the fact that after a three-year investigation we thought that the only sensible plan was to have the smaller board, that the gentleman has introduced the resolution, and I hope you will vote for it, and it can be sent down to the Legislature as the will of this board.

Are there any further remarks?

A Delegate—Mr. President, do I understand that the law in regard to members of the board of education does not allow any district, especially a rural district or borough, to reduce by vote of that borough its membership from nine to five or three?

President Frelinghuysen—I think they can do that, reduce its number, but this is a mandatory law making the townships five, that is the purpose of the resolution, is it not?

Mr. Quick—Yes, sir.

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President Frelinghuysen—And that was the purport of the recommendation of the committee, and it was passed by the Senate that all township boards should be five.

The Delegate—That is the law now, is it not?

President Frelinghuysen—No, nine.

The Delegate—Then we have certainly been laboring under a misapprehension, because we have acted under the direction of our county superintendent and our board is five. I understand the law says that we have that privilege to reduce to five.

President Frelinghuysen—You have that privilege and you have done it properly and have moved legally. This, however, is a law which compels boards which are now nine to reduce themselves to five. The resolution makes it mandatory that they shall be five, reducing the present boards of nine to five. That is the object of the resolution.

Mr. Quick—I think perhaps you have just misunderstood the wording of the resolution in this respect; it was my desire to have a law passed entirely eliminating or doing away with the board of nine for the township and restoring us to the old law which provided three trustees for each school district. That takes it out of politics. Five is just as bad as nine. It allows the political sides to have an influence, and as long as politics dominates our boards of education we cannot have those teachers or proper books, because everything is zigzag from one end of the township to the other. The influence is political instead of for the home or for the benefit of the children or the proper fitness of the teachers or the proper distribution of the money. Under the old law we raised our own money, we had our proportion, we could select our own teachers, any teacher who taught two weeks or a month and was not satisfactory they could be discharged and we would only have to call our three trustees together. In other words, we had a family affair, it was a matter that was within our own control. Now, it is a township matter, and we may have the control way over in the other side of the township and it may not be a unanimous board; it may be that there is a matter of political favor sticking up one

way or the other, and we lose our chance of having any proper relief under those conditions.

A Delegate—Mr. President, I fail to see the argument, especially in the rural districts, for a reduction of the board, and that it would be advantageous. In our experience, since the number of our board has been increased to nine, we find less politics and really less friction than when the board was small. Particularly in the men on the boards in townships we find they have ideas on education, etc., that are very much diversified. There are farmers, mostly farmers who composed our board of education, and there are nine of us, and I suppose each one has a different idea for managing schools. Now, suppose they were reduced to five, would that make them more unanimous in their ideas? Now, I question whether that would be advantageous or not. Perhaps those five men, or, as the gentleman has said, three men, would have certain particular lines and they would work together on those lines and the lines of education in that township or that particular district would be limited to those particular subjects or ideas. I am a firm believer, while the committee, as our President has said, has made an investigation and most likely their report is correct, but from my own personal experience in our own little township I feel that the large board is working together very advantageously and we have made progress, while perhaps not as much as we should have in the last few years, we have made progress in our models and general educational plans throughout the township.

A Delegate—How would that work together where townships and boroughs are connected together in one school district? That is our case. Would that be three for our township and borough or three for the whole district?

President Frelinghuysen—Do you mean to say you have a borough now in the township, a board for the borough and township combined.

The Delegate—All one, yes; the borough is located in the township.

President Frelinghuysen—I suppose the borough would take three and give the township two.

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But I misunderstood the gentleman. He now means three for each school district, don't you?

Mr. Quick—Yes, sir.

President Frelinghuysen—How many school districts are there in your township?

Mr. Quick—Five.

President Frelinghuysen—That would amount to fifteen.

Mr. Quick—Yes, sir.

A Delegate—It strikes me that this resolution would do away with the township schools. The old idea of the district has been done away with, and this new law which constitutes the township schools and constitutes the joint high schools has gone in and we have got working on that plan now, and this resolution would mean the repeal of the township school act which I do not think is intended. They have already gone to work in some of the townships and built fine schools and high schools. While it don't work well with the little old schoolhouse plan, yet the old plan I know did not work at all with us. At the same time we are sending our children, carting them by stage to school, to the central high school. The township school law I don't think could be repealed and the condition put back to the old district school any more. I think that is a thing of the past.

Mr. Van Horn—Why change the method of the township school? I think the old system was better, but we have been acting under this township system a great many years and our central high schools have been built and the whole thing is established upon that system and to change back now to the old system would mean the complete reorganization of our school system in the rural communities, and I don't think our board ought to put itself on record in favor of that change without greater deliberation.

A Delegate—I would just like to say a word in regard to this question. We have done this thing you are now talking about, reducing the board, as Mr. Hopping has stated, we reduced the board from nine to five, as we understood the law we had the right to do that, and as the president of the board, when we

had nine members, there were several times we had meetings and there would not be a quorum, and the board talked it over and they thought it was advisable, and as Mr. Hopping has stated we got our authority from the county superintendent that we had a right to reduce the board, and it was presented before the people and voted and they decided to reduce the board from nine to five and now we have five members, and since we have reduced the board from nine to five there has not been any time when we have not had a quorum to do business. We are going on doing business very nicely, very satisfactory, and when we had nine members, there was more discussion and there seemed to be more irritation. Now, the thing goes along very nicely and we have a quorum, as I said, every time since we reduced the board and we find it is more satisfactory than having nine members.

President Frelinghuysen—I misunderstood the resolution of the gentleman. It provides for a return to the old district school system. The report of the committee on the reduction of township boards was as follows:

The average number of members of each board is nine. In cities of the first and second class, this number does not appear to be too large. In smaller districts we have been unable to see any necessity for so many members. In some localities it is often difficult to get so many.

That large boards were not necessary was apparent in a number of communities where the minority members were found on committees with little or nothing to do, and sometimes on committees that had no voice in the expenditures or the employment of teachers or help of any kind. In some sections the minority members could invariably be found on the library committee. The very fact that there was a minority led us to inquire what it meant and we were promptly informed that it was a board divided along political lines and that the members of the dominant party controlled all the expenditures and the selection of those to whom contracts or work of any kind was awarded.

Sometimes we found critics and those who believed in pursuing strict business methods upon the library committee and

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from them we frequently obtained light as to how school affairs could be and were managed on other than a business basis.

The larger the board the more difficult it is to place the responsibility for improper practices. We believe more efficient work can and will be done by small boards. We also believe that the fewer there are to shoulder the responsibility for improper conduct the less likely it is to occur.

That was the report of the committee, and therefore we recommended that the township boards, where they were not now five, be reduced from nine to five. That passed the Senate and did not pass the House.

I understood that was the purport of the gentleman's resolution, but it is not. He now explains that he means that each district shall have a board composed of three. The question is, gentlemen, what will you do with it.

Secretary Dye—Mr. President, I do not think we are in a position to vote intelligently, or perhaps as we would like to on this question, and I move that the resolution be laid on the table.

The motion was carried.

President Frelinghuysen—The Chair is empowered to appoint a committee to examine in regard to Mr. Smith's report and wait upon the members of the Legislature and ask for such legislation as is desirable as to the taxation and speed regulation. I appoint on that committee, Senator George W. F. Gaunt, J. Warren Fleming and H. H. Hutcheson.

I ask the Executive Committee to meet with me in the office of the State Board of Agriculture.

Is there any further business? Are there any other resolutions?

I want to thank the delegates for their kindness and consideration, and I hope that next year when we meet we also can report much more progress.

I now adjourn this, the thirty-ninth annual meeting of the New Jersey Board of Agriculture, without date.

Officers of the State Grange of New Jersey, P. of H., 1912.

—————

Master—G. W. F. GAUNT,Mullica Hill, Gloucester county
Overseer—JOHN M. WOOLMAN,Elmer, Salem county
Lecturer—DAVID H. AGANS,Three Bridges Hunterdon county
Steward—FRANK O. WARE,Deerfield, Cumberland county
Assistant Steward—C. C. BASLEY,Farmingdale, Monmouth county
Chaplain—EVI VANDRUFF,Sussex, Sussex county
Treasurer—CHARLES COLLINS,Moorestown, Burlington county
Secretary—JOHN T. COX,Three Bridges, Hunterdon county
Gate Keeper—D. HOWARD JONES,Freehold, R. D., Monmouth county
Ceres—HESTER G. HILDRETH,Rio Grande, Cape May county
Pomona—ELIZA PERRINE,Cranbury, Middlesex county
Flora—LOUISA MABIE,Westwood, Bergen county
Lady Assistant Steward—PHEBE HUTCHINSON, ..Robbinsville, Mercer county

Executive Committee—GEORGE W. F. GAUNT, Mullica Hill, Gloucester county; ALBERT HERITAGE, Mickleton, Gloucester county; A. G. VAN NEST, Neshanic Station, R. D. No. 1, Somerset county; H. M. LOVELAND, Cohansey, Salem county; C. C. HULSART, Matawan, Monmouth county; JOHN T. COX, Three Bridges, Hunterdon county.

State Grange meets first Tuesday in December, 1912.

County Deputies.

Atlantic—Henry Pfeiffer, Cologne, Atlantic county.
 Bergen—A. I. Ackerman, Ridgewood, R. D. No. 2, Bergen county.
 Burlington—Joseph Engle, Mount Holly, Burlington county.
 David L. Ballinger, Moorestown, Burlington county.
 Camden—John M. Garwood, Ashland, Camden county.
 Cape May—A. T. D. Howell, Dias Creek, Cape May county.
 Cumberland—Walter E. Davis, Shiloh, Cumberland county.
 Essex—A. W. Fund, Chatham, R. D., Essex county.
 Gloucester—Charles H. Brown, Swedesboro, Gloucester county.
 I. B. Pancoast, Clayton, Gloucester county.
 Hunterdon—Joseph Bodine, Flemington, Hunterdon county.
 Frank V. D. Fisher, Stockton, R. D. No. 2, Hunterdon county.
 Mercer—C. Newton Hutchinson, Robbinsville, Mercer county.
 Middlesex—Frank O. Nelson, New Market, Middlesex county.
 Monmouth—D. Howard Jones, Freehold, Monmouth county.
 Morris—A. W. Fund, Chatham, R. D., Morris county.
 Ocean—D. Howard Jones, Freehold, Monmouth county.
 Passaic—David F. Duncan, Paterson, R. D. No. 1, Passaic county.
 Salem—Maxwell W. Buzby, Woodstown, Salem county.
 Somerset—H. W. Kline, New Brunswick, R. D. No. 6, Somerset county.
 Sussex—E. W. Clark, Sussex, Sussex county.
 Sanford J. Crawn, Newton, R. D., Sussex county.

Union—Frank O. Nelson, New Market, Middlesex county.
 Warren—James I. Cook, Delaware, R. D. No. 2, Warren county.
 Women's Work Committee—Mary R. Brown, Swedesboro; Sadie E. Collins,
 Moorestown; Eudora N. Rue, Windsor.

Pomona Granges, 1912.

MASTERS AND SECRETARIES, WITH POST-OFFICE ADDRESS.

- Burlington, No. 1. Master, Harry Dubell, Mounty Holly, R. D., N. J.
 Secretary, G. L. Gillingham, Moorestown, N. J.
 Meets fourth Tuesday in January, April, July and October.
- Sussex, No. 2. Master, Thomas W. DeKay, New Milford, N. Y.
 Secretary, Frank Stoll, Branchville, N. J.
 Meets first Saturday in January and October, third Saturday in April
 and July.
- Hunterdon, No. 3. Master, John V. Painter, Lebanon, R. D., N. J.
 Secretary, William Y. Holt, Flemington, N. J.
 Meets second Friday in January, April, August and October.
- Cumberland, No. 4. Master, N. E. Diment, Cedarville, N. J.
 Secretary, L. F. Glaspey, Shiloh, N. J.
 Meets second Tuesday in January, April, July and October.
- Mercer, No. 5. Master, Emerson Yard, Allentown, N. J.
 Secretary, T. A. Bolmer, Rocky Hill, N. J.
 Meets first Wednesday in March, June and September at Hightstown,
 Windsor and New Egypt; third Wednesday in November at Allentown.
- Salem, No. 6. Master, John Moore, Elmer, N. J.
 Secretary, Minnie C. Wilkinson, Woodstown, N. J.
 Meets at call of Executive Committee.
- Camden and Atlantic, No. 7. Master, Benjamin Barrett, Blue Anchor, N. J.
 Secretary, Harry E. Horner, Merchantville, N. J.
 Meets second Saturday in January, last Saturday in April, July and
 October at Haddonfield, Blackwood and Berlin.
- Gloucester, No. 8. Master, William B. Nichols, Franklinville, N. J.
 Secretary, Elizabeth B. Kirby, Mullica Hill, N. J.
- Central District, No. 9. Master, August W. Fund, Chatham, R. D., N. J.
 Secretary, E. Oscar DeCamp, Roseland, N. J.
 Meets January 24th, April 24th and October 23d.
- Warren, No. 10. Master, N. Warne, Broadway, N. J.
 Secretary, J. H. Albertson, East Stroudsburg, Pa.
- Bergen, No. 11. Master, James D. Carlough, Allendale, R. D. No. 1, N. J.
 Secretary, Leonard Pikaart, Midland Park, R. D. No. 1, N. J.
- Monmouth, No. 12. Master, L. H. Stemler, Matawan, N. J.
 Secretary, S. B. Wells, Marlboro, N. J.
- Middlesex and Somerset, No. 13. Master, A. G. VanNest, Neshanic Station,
 R. D. No. 2, N. J.
 Secretary, H. W. Kline, New Brunswick, R. D. No. 6, N. J.
 Meets third Thursday in January, April, August and October.
- Cape May, No. 14. Master, Joseph Camp, Pierces, N. J.
 Secretary, Eli Townsend, Clermont, N. J.

Subordinate Granges.

- Pioneer, No. 1. Master, W. H. Havens, Cranbury, Middlesex county.
 Secretary, J. Edward Chamberlin, Cranbury Station, Middlesex county.
 Lecturer, Mrs. W. H. Havens, Cranbury, Middlesex county.
 Meets second and fourth Tuesday at Cranbury.

SUBORDINATE GRANGES.

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- Marl Ridge, No. 2. Master, Wm. H. Davis, Cream Ridge, Monmouth county.
 Secretary, I. E. Harrison, Jacobstown, Monmouth county.
 Lecturer, Violet Tantum, New Egypt, Monmouth county.
 Meets first and third Friday afternoons.
- Hammonton, No. 3. Master, Manley Austin, Hammonton, Atlantic county.
 Secretary, Helen Burgess, Hammonton, Atlantic county.
 Lecturer, Jennie Kind, Hammonton, Atlantic county.
 Meets first and third Fridays.
- Swedesboro, No. 5. Master, Clifford L. Homan, Swedesboro, Gloucester county.
 Secretary, Caddie J. Gill, Swedesboro, Gloucester county.
 Lecturer, Alvin Gaventa, Repaupo, Gloucester county.
 Meets every Wednesday evening in Black's Hall.
- Somerset, No. 7. Master, H. W. Kline, New Brunswick, R. D. No. 6, Somerset county.
 Secretary, L. R. McCracken, New Brunswick, R. D. No. 6, Somerset county.
 Lecturer, Mrs. F. F. Fuess, Middlebush, Somerset county.
 Meets second and fourth Saturday evenings.
- Moorestown, No. 8. Master, Edward A. Mechling, Moorestown, Burlington county.
 Secretary, Mrs. Sadie E. Collins, Moorestown, Burlington county.
 Lecturer, Emily H. Lippincott, Riverton, Burlington county.
 Meets Thursday afternoon December to April; first and third Thursday evenings balance of the year.
- Woodstown, No. 9. Master, Lewis Edwards, Woodstown, R. D. No. 1, Salem county.
 Secretary, Bertha V. Harris, Woodstown, Salem county.
 Lecturer, Elsie Edwards, Woodstown, R. D. No. 1, Salem county.
 Meets every Wednesday evening in Peterson's Hall.
- Vineland, No. 11. Master, Wm. C. Parsons, Vineland, R. D. No. 5, Cumberland county.
 Secretary, Mrs. M. E. Hendricks, South Vineland, Cumberland county.
 Lecturer, J. A. Vanaman, Millville, Cumberland county.
 Meets Saturday afternoons.
- Ringoes, No. 12. Master, Edward H. Wilson, Ringoes, Hunterdon county.
 Secretary, J. S. Williamson, Ringoes, R. D. No. 2, Hunterdon county.
 Lecturer, Miss Jessie Fullerton, Ringoes, R. D. No. 1, Hunterdon county.
 Meets second and fourth Saturday afternoons; other Saturday evenings in Grange Hall at Ringoes.
- Hopewell, No. 16. Master, George J. Schaible, Bridgeton, R. D. No. 2, Cumberland county.
 Secretary, Walter E. Davis, Shiloh, Cumberland county.
 Lecturer, Mrs. John R. Tomlinson, Shiloh, Cumberland county.
 Meets Wednesday nights in Grange Hall at Shiloh.
- Cumberland, No. 18. Master, Samuel L. Watson, Greenwich, Cumberland county.
 Secretary, Morris Goodwin, Greenwich, Cumberland county.
 Lecturer, Anna T. Goodwin, Greenwich, Cumberland county.
- Fenwick, No. 20. Master, Harvey Hancock, Quinton, R. D., Salem county.
 Secretary, Anna E. Harris, Harmersville, Box 25, Salem county.
 Lecturer, Lucas Carll, Hancock's Bridge, Salem county.
 Meets every Thursday evening, Grange Hall, Harmersville.
- Mannington, No. 25. Master, Leon A. Crispin, Woodstown, Salem county.
 Secretary, Lena D. Crispin, Woodstown, Salem county.
 Lecturer, Acsa Austin, Woodstown, Salem county.
 Meets in Mannington Grange Hall.

- Harrisonville, No. 26. Master, C. E. Kirby, Mullica Hill, Gloucester county.
 Secretary, Elizabeth B. Kirby, Mullica Hill, Gloucester county.
 Lecturer, Belle Kirby, Harrisonville, Gloucester county.
 Meets Tuesday evenings in Grange Hall.
- Elmer, No. 29. Master, John Gantz, Monroeville, Salem county.
 Secretary, Mary W. Gaunt, Monroeville, Salem county.
 Lecturer, Laura A. Evans, Elmer, Salem county.
 Meets every Wednesday evening in Garrison's Hall.
- Bridgeport, No. 32. Master, Willard B. Kille, Swedesboro, Gloucester county.
 Secretary, S. Lewis Kille, Swedesboro, Gloucester county.
 Lecturer, Mary E. Hager, Swedesboro, Gloucester county.
 Meets Tuesday evenings in Grange Hall at Bridgeport.
- Cedarville, No. 34. Master, M. B. Husted, Cedarville, Cumberland county.
 Secretary, N. E. Diament, Cedarville, Cumberland county.
 Lecturer, Mrs. E. W. Lanning, Fairton, Cumberland county.
 Meets first and third Thursday evenings in Jerrel's Hall, Cedarville.
- Medford, No. 36. Master, Edmund Braddock, Medford, Burlington county.
 Secretary, Anna P. B. Engle, Medford, Burlington county.
 Lecturer, Gula E. Haines, Medford, Burlington county.
 Meets Thursday afternoons from October 1 to April 1, every two weeks,
 in the evening; balance of the year in I. O. O. F. Hall.
- Haddon, No. 38. Master, Everet Garwood, Ashland, Camden county.
 Secretary, Wesley R. Stafford, Marlton, Camden county.
 Lecturer, Amelia Bates, Haddonfield, Camden county.
 Meets Wednesday afternoons, November to April; Saturday evenings,
 April to November.
- Mantua, No. 39. Master, John Foster, Woodbury, Gloucester county.
 Secretary, Harry C. Viereck, Wenonah, Gloucester county.
 Lecturer, Anna Sweeten, Wenonah, Gloucester county.
 Meets Monday evenings in Noblitt's Hall, Wenonah.
- Windsor, No. 40. Master, David D. Gordon, Robbinsville, R. D. No. 1, Mer-
 cer county.
 Secretary, Runey D. Perrine, Windsor, Mercer county.
 Lecturer, Margaret Ely, Robbinsville, R. D. No. 1, Mercer county.
 Meets second and fourth Tuesday evenings at Windsor.
- Hope, No. 43. Master, Wm. French, Bridgeton, R. D. No. 14, Cumberland
 county.
 Secretary, Mary D. Miller, Bridgeton, R. D. No. 2, Cumberland county.
 Lecturer, Mary Uhland, Bridgeton, R. D. No. 4, Cumberland county.
 Meets first and third Tuesday evenings.
- Marlton, No. 45. Master, Henry S. L. Lippincott, Marlton, R. D. No. 2,
 Burlington county.
 Secretary, Walter B. Winner, Marlton, Burlington county.
 Lecturer, Caroline S. E. Wills, Marlton, Burlington county.
 Meets first and third Tuesday evenings from March to December; bal-
 ance of year every Tuesday afternoon.
- Pemberton, No. 50. Master, Clifford M. Emmons, Pemberton, Burlington
 county.
 Secretary, Frank M. Hargrove, Vincentown, Burlington county.
 Lecturer, Mrs. A. J. Rosbach, Pemberton, Burlington county.
 Meets first and third Friday evenings in I. O. M. Hall, Pemberton.
- Mullica Hill, No. 51. Master, William R. Skinner, Glassboro, R. D., Glou-
 cester county.
 Secretary, Anna G. Tonkin, Mullica Hill, Gloucester county.
 Lecturer, Deborah Kirby, Mullica Hill, Gloucester county.
 Meets Tuesday evenings in Grange Hall, Mullica Hill.

SUBORDINATE GRANGES.

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- Deerfield, No. 52. Master, J. W. Bishoff, Deerfield, Cumberland county.
 Secretary, Allen D. Ackley, Deerfield, Cumberland county.
 Lecturer, J. F. Lenon, Deerfield, Cumberland county.
 Meets every Wednesday evening.
- Centre Grove, No. 57. Master, Wm. H. Taylor, Millville, R. D. No. 1, Cumberland county.
 Secretary, Elizabeth Taylor, Millville, R. D. No. 1, Cumberland county.
 Lecturer, Miss Evelyn Earle, Millville, R. D. No. 1, Cumberland county.
 Meets second and fourth Wednesday evenings, Centre Grove School House.
- Columbus, No. 58. Master, John B. Burtis, Bordentown, Burlington county.
 Secretary, Reba Sharp, Columbus, R. D. No. 2, Burlington county.
 Lecturer, Eliza B. Deacon, Columbus, R. D. No. 2, Burlington county.
 Meets every other Friday evening in Grange Hall.
- Thorofare, No. 59. Master, T. Wood Wyne, Thorofare, Gloucester county.
 Secretary, Charles H. Budd, Thorofare, Gloucester county.
 Lecturer, Beulah Clement, Thorofare, Gloucester County.
 Meets Monday evenings at Thorofare.
- Courses Landing, No. 60. Master, Morris D. Purtell, Sharptown, Salem county.
 Secretary, Gertrude W. Freas, Sharptown, Salem county.
 Lecturer, Bertha Hackett, Woodstown, R. D., Salem county.
 Meets every Tuesday evening in K. of P. Hall at Sharptown.
- Crosswicks, No. 61. Master, John G. Taylor, Chesterfield, Burlington county.
 Secretary, Howard M. Rogers, Crosswicks, Burlington county.
 Lecturer, Carrie Bowers, Yardville, Burlington county.
 Meets second and fourth Saturday evenings at Crosswicks.
- Pennington, No. 64. Master, A. T. Blackwell, Harbourton, Mercer county.
 Secretary, S. T. Cox, Pennington, R. D. No. 1, Mercer county.
 Lecturer, Mrs. E. E. Bunn, Pennington, Mercer county.
 Meets second Saturday afternoon, fourth Friday evening, I. O. O. F. Hall.
- Vincentown, No. 67. Master, Samuel J. Cliver, Birmingham, Burlington county.
 Secretary, Mrs. F. Githens, Vincentown, Burlington county.
 Lecturer, Kizzie Atkinson, Vincentown, Burlington county.
 Meets every Saturday evening, Grange Hall, Vincentown.
- Ewing, No. 73. Master, John W. Hendrickson, Trenton, R. D. No. 1, Mercer county.
 Secretary, Wm. H. Cadwallader, Trenton, R. D. No. 1, Mercer county.
 Lecturer, Mrs. Ada Verman, Trenton, Mercer county.
 Meets first and third Tuesday evening at Ewing Church House.
- Mercer, No. 77. Master, N. Stout Voorhees, Woodsville, Mercer county.
 Secretary, J. M. Dalrymple, Hopewell, Mercer county.
 Lecturer, Miss Carolyn Sheppard, Hopewell, Mercer county.
 Meets second and fourth Saturday afternoon, Grange Hall, Hopewell.
- Wantage, No. 78. Master, W. W. Titsworth, Jr., Sussex, Sussex county.
 Secretary, Frank S. Martin, Sussex, Sussex county.
 Lecturer, S. M. Parcell, Sussex, Sussex county.
 Meets first and third Wednesday evening in Grange Hall at Sussex.
- Hamilton, No. 79. Master, F. S. Hulick, Trenton, R. D. No. 2, Mercer county.
 Secretary, M. V. Nutt, Hamilton Square, Mercer county.
 Lecturer, Mrs. Myra B. Nutt, Hamilton Square, Mercer county.
 Meets first Tuesday evening and third Tuesday afternoon.
- Friesburg, No. 81. Master, George Hitchner, Elmer, Salem county.
 Secretary, Mrs. Anna B. Rook, Elmer, Salem county.
 Lecturer, Mrs. Atlie Loveland, Cohansey, Salem county.
 Meets Tuesday evenings at Friesburg.

- Williamstown, No. 85. Master, R. Howell Tice, Williamstown, Gloucester county.
 Secretary, Mrs. Grace Ritchie, Williamstown, Gloucester county.
 Lecturer, Mrs. Edith V. Wilson, Sicklerville, R. D., Gloucester county.
 Meets every Tuesday evening, November to May; second and fourth Tuesday evenings balance of year.
- Locktown, No. 88. Master, Wm. H. Wagner, Flemington, R. D. No. 2, Hunterdon county.
 Secretary, Wm. B. Smith, Stockton, R. D. No. 2, Hunterdon county.
 Lecturer, Mary D. Bodine, Flemington, R. D. No. 2, Hunterdon county.
 Meets Tuesday evenings in Grange Hall, Locktown.
- Blackwood, No. 90. Master, A. J. Severns, Blackwood, R. D. No. 1, Camden county.
 Secretary, Martin Schubert, Laurel Springs, Camden county.
 Lecturer, Maria Stetser, Blackwood, R. D., Camden county.
 Meets every Saturday evening in Grange Hall.
- Monmouth, No. 92. Master, Chas. H. Okerson, South Freehold, R. D. No. 2, Monmouth county.
 Secretary, Charles H. Okerson, Jr., South Freehold, R. D. No. 2, Monmouth county.
 Lecturer, D. H. Jones, South Freehold, R. D. No. 2, Monmouth county.
 Meets first and third Wednesdays at Freehold.
- Hightstown, No. 96. Master, Howard Pickering, Hightstown, Middlesex county.
 Secretary, Frank C. Dawson, Hightstown, Middlesex county.
 Lecturer, Wm. M. Cox, Hightstown, Middlesex county.
 Meets Saturday afternoon December to April, balance of year second and fourth Saturday evenings.
- Allentown, No. 98. Master, C. R. Havens, Cream Ridge, Monmouth county.
 Secretary, Sara G. Chamberlin, Robbinsville, R. D. No. 2, Monmouth county.
 Lecturer, Ella Schooley, Allentown, Monmouth county.
 Meets first, third and fifth Saturday evenings, Grange Hall, Allentown.
- Liberty, No. 99. Master, G. C. McDowell, Wickatunk, Monmouth county.
 Secretary, S. B. Wells, Marlboro, Monmouth county.
 Lecturer, Kate H. Kelly, Wickatunk, Monmouth county.
 Meets every other Friday at Bradwelt, Monmouth county.
- Sergeantsville, No. 101. Master, Egbert T. Bush, Stockton, Hunterdon county.
 Secretary, F. V. D. Fisher, Stockton, R. D. No. 2, Hunterdon county.
 Lecturer, Mary H. Dilts, Sergeantsville, Hunterdon county.
 Meets every Saturday night in Grange Hall.
- Livingston, No. 104. Master, Mrs. A. W. Fund, Chatham, R. D., Essex county.
 Secretary, A. W. Fund, Chatham, R. D., Essex county.
 Lecturer, Dr. D. J. Edwards, Chatham, R. D., Essex county.
 Meets second and fourth Thursday evenings in Collins' Hall.
- Morris, No. 105. Master, A. M. Webb, Hanover, Morris county.
 Secretary, A. L. Renimann, Jr., Hanover, Morris county.
 Lecturer, Mrs. Charles Young, Whippany, R. D., Morris county.
 Meets second and fourth Tuesday evening in Hanover.
- Kingwood, No. 106. Master, James S. Kerr, Frenchtown, R. D. No. 1, Hunterdon county.
 Secretary, Ellis B. Huffman, Frenchtown, R. D. No. 1, Hunterdon county.
 Lecturer, Katie Thatcher, Frenchtown, R. D. No. 1, Hunterdon county.
 Meets Saturday nights, Grange Hall, Barbertown.

SUBORDINATE GRANGES.

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- Caldwell, No. 107.** Master, E. O. Wettyen, Cedar Grove, Essex county.
Secretary, Miss Mary V. Lindsley, Verona, Essex county.
Lecturer, R. C. Campbell, Caldwell, Essex county.
Meets second and fourth Friday nights.
- Roseland, No. 108.** Master, Marcus W. DeCamp, Roseland, Essex county.
Secretary, E. Oscar DeCamp, Roseland, Essex county.
Lecturer, Emma L. Campbell, Roseland, Essex county.
Meets second and fourth Tuesday evenings, Grange Hall, Roseland.
- Warren, No. 110.** Master, Frederick Housel, Broadway.
Secretary, Miss Mae Oberly, Broadway.
- Mickleton, No. 111.** Master, Edward W. Borden, Mickleton, Gloucester county.
Secretary, Walter Heritage, Swedesboro, Gloucester county.
Lecturer, Maud Owen, Paulsboro, Gloucester county.
Meets every Thursday evening at Mickleton.
- Hurffville, No. 115.** Master, Charles Turner, Sewell, R. D. No. 1, Gloucester county.
Secretary, Walton H. Chew, Box 105, Pitman, Gloucester county.
Lecturer, Mrs. Mary A. Gardner, Sewel, R. D. No. 3, Gloucester county.
Meets Saturday nights, Davenport's Hall, Hurffville.
- Rockaway, No. 116.** Master, Van Young, Phillipsburg, R. D. No. 2.
Secretary, Warren Herman, Phillipsburg, R. D. No. 2.
- Washington, No. 117.** Master, Samuel T. Bowman, Washington, R. D., Warren county.
Secretary, Mrs. Jos. Bodine, Box 45, Washington, R. D., Warren county.
Lecturer, Melville L. Rush, Washington, R. D., Warren county.
Meets first and third Thursday at home of S. T. Bowman.
- Oak Grove, No. 119.** Master, George Mathews, Pittstown, Hunterdon county.
Secretary, Andrew R. Allen, Pittstown, Hunterdon county.
Lecturer, Burris Snyder, Pittstown, Hunterdon county.
Meets in Grange Hall, near Pittstown, Tuesday nights.
- Spring Mills, No. 120.** Master, Eli P. Burgstresser, Milford, Hunterdon county.
Secretary, Mary E. Woolf, Milford, Hunterdon county.
Lecturer, R. T. Crouse, Milford, Hunterdon county.
Meets every other Tuesday night in Grange Hall, Spring Mills.
- Stewartsville, No. 121.** Master, J. Manning Smith, Stewartsville, Warren county.
Secretary, Myrtle R. Frey, Stewartsville, R. D., Warren county.
Lecturer, Margaret Frey, Stewartsville, R. D., Warren county.
Meets first and third Thursday evening in I. O. O. F. Hall.
- Aura, No. 122.** Master, H. D. Newkirk, Clayton, Gloucester county.
Secretary, Harry C. Ivins, Aura, Gloucester county.
Lecturer, Carrie Newkirk, Clayton, Gloucester county.
Meets Wednesday evenings at Aura.
- Cross Keys, No. 123.** Master, George Thompson, Cross Keys, Gloucester county.
Secretary, G. E. Tomlinson, Cross Keys, Gloucester county.
Lecturer, Stella Hurff, Cross Keys, Gloucester county.
Meets Saturday evenings in Hurff's Hall.
- Grand View, No. 124.** Master, Edward P. Nief, Flemington, R. D., No. 2, Hunterdon county.
Secretary, Charles Welts, Flemington, R. D. No. 2, Hunterdon county.
Lecturer, Mrs. Augusta Higgins, Flemington, Hunterdon county.
Meets Wednesday nights, October to April; Saturday evenings, April to October, in Grange Hall, two miles west of Flemington.

- Riverside, No. 125. Master, Abram D. Schomp, Whitehouse Station, R. D. No. 2, Hunterdon county.
 Secretary, W. W. Foster, Three Bridges, R. D. No. 1, Hunterdon county.
 Lecturer, Mrs. Cora Agans, Three Bridges, Hunterdon county.
 Meets every Saturday night in Grange Hall, Three Bridges.
- Delaware, No. 126. Master, Irvin S. Appleman, Columbia, Warren county.
 Secretary, J. H. Albertson, East Stroudsburg, Pa.
 Lecturer, Elizabeth Hartung, Delaware.
 Meets first and third Friday evenings from December 1st to May 1st.
- Iona, No. 127. Master, David Atkinson, Franklinville, Gloucester county.
 Secretary, Frank A. Henry, Monroeville, R. D., Gloucester county.
 Lecturer, Mrs. A. Holmes, Franklinville, Gloucester county.
 Meets Saturday evenings.
- Cape May, No. 128. Master, E. B. Scull, Dias Creek, Cape May county.
 Secretary, Edw. W. Tuttle, Dias Creek, Cape May county.
 Lecturer, A. T. D. Howell, Dias Creek, Cape May county.
 Meets every Tuesday evening in I. O. M. Hall, Dias Creek.
- Bergen, No. 129. Master, August C. Ohle, Hackensack, Bergen county.
 Secretary, Arthur Lozier, Ridgewood, Bergen county.
 Lecturer, Lillie Banta, Hackensack, Bergen county.
 Meets first and third Wednesday in Grange Hall, Spring Valley.
- Franklin, No. 130. Master, William J. Ellis, North Haledon, Bergen county.
 Secretary, Mrs. J. Vanderhoff, Wyckoff, Bergen county.
 Lecturer, A. R. Dougherty, Midland Park, R. D., Bergen county.
 Meets every Tuesday evening in hall at Wyckoff.
- Rancocas, No. 131. Master, Aaron W. Johnson, Burlington, R. D. No. 1, Burlington county.
 Secretary, Mrs. Nancy M. Leeds, Rancocas, Burlington county.
 Lecturer, Mrs. Annie S. Engle, Bougher, Burlington county.
 Meets first and third Wednesday afternoons, April to December; every Wednesday balance of year, at Rancocas.
- Cold Springs, No. 132. Master, Frank E. Bate, Fishing Creek, Cape May county.
 Secretary, Jennie H. MacPherson, Erma, Cape May county.
 Lecturer, Minnie Bate, Fishing Creek, Cape May county.
 Meets Monday evenings in Mechanics' Hall at Cold Springs.
- Hickory, No. 133. Master, Wm. P. Dougherty, Bloomsbury, Hunterdon county.
 Secretary, A. B. McCrea, Pattenburg, Hunterdon county.
 Lecturer, Mrs. K. Dougherty, Bloomsbury, Hunterdon county.
 Meets Wednesday evenings in Hickory Grange Hall.
- Vernon Valley, No. 134. Master, T. B. Storms, McAfee, Sussex county.
 Secretary, Mrs. C. L. Giveans, Vernon, Sussex county.
 Lecturer, Miss Agnes Storms, McAfee, Sussex county.
 Meets first and third Tuesday evenings in Vernon.
- Ramsey, No. 135. Master Edward H. Smith, Allendale, R. D. No. 1, Bergen county.
 Secretary, Mrs. Elizabeth Furgeson, Ramsey, Bergen county.
 Lecturer, Mrs. H. J. Winter, Allendale, R. D. No. 1, Bergen county.
 Meets Tuesday evenings, I. O. O. F. Hall, Ramsey.
- Lincoln, No. 136. Master, F. J. Ludwig, Westwood, R. D. No. 2, Bergen county.
 Secretary, Mrs. M. L. Ludwig, Westwood, R. D. No. 2, Bergen county.
 Lecturer, C. H. Devoe, Westwood, R. D. No. 2, Bergen county.
 Meets second and fourth Wednesday evenings at Westwood.
- Mt. View, No 137. Master, D. C. Howell, Sussex, R. D., Sussex county.
 Secretary, Mrs. Dolson Ayers, Beemersville, Sussex county.
 Lecturer, W. D. Haggerty, Sussex, R. D., Sussex county.
 Meets every other Saturday evening in Grange Hall at Beemersville.

SUBORDINATE GRANGES.

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- Berlin, No. 138. Master, John T. Baumgartel, Berlin, Camden county.
 Secretary, X. F. Ottiger, Berlin, Camden county.
 Lecturer, Clara Baumgartel, Berlin, Camden county.
 Meets every Tuesday evening in Grange Hall, Broad street, Berlin.
- Upper Township, No. 139. Master, Walter L. Yerkes, Tuckahoe, Cape May county.
 Secretary, Z. A. Townsend, Tuckahoe, Cape May county.
 Lecturer, Mrs. A. Homan, Tuckahoe, Cape May county.
 Meets first Friday, April to October, first and third balance of year in Mechanics' Hall at Tuckahoe.
- Montague, No. 140. Master, Henry J. Schneider, Port Jervis, R. D. No. 1, New York.
 Secretary, Rose A. Reinhardt, Port Jervis, R. D. No. 1, New York.
 Lecturer, John Sheets, Port Jervis, R. D. No. 1, New York.
 Meets second and fourth Saturdays in Grange Hall, Millville, Sussex county.
- Pascack, No. 141. Master, John M. Myers, Westwood, R. D. No. 2, Bergen county.
 Secretary, E. M. Lyman, Park Ridge, Bergen county.
 Lecturer, Mrs. I. E. Mabie, Westwood, Bergen county.
 Meets second and fourth Saturday evenings in Borough Hall, Woodcliff Lake.
- Olive Branch, No. 142. Master, F. C. Bedle, Matawan, Monmouth county.
 Secretary, J. H. Douglass, Matawan, R. D. No. 1, Monmouth county.
 Lecturer, Ira Sheppard, Matawan, Monmouth county.
 Meets every Thursday evening from October to April, every two weeks April to October.
- Delaware Valley, No. 143. Master, Ira Stoll, Layton, Sussex county.
 Secretary, Geo. E. Hursh, Layton, Sussex county.
 Lecturer, Frank Stoll, Layton, Sussex county.
 Meets first and third Saturday evenings in George Hall at Layton.
- Saddle River, No. 144. Master, T. N. Woodruff, Saddle River, Bergen county.
 Secretary, J. F. Koopmann, Waldwick, Bergen county.
 Lecturer, Mrs. J. F. Koopmann, Waldwick, Bergen county.
 Meets first and third Wednesday evenings, Association Hall.
- Wayne Township, No. 145. Master, D. F. Duncan, Paterson, R. D. No. 1, Passaic county.
 Secretary, H. M. Berdan, Paterson, R. D. No. 1, Passaic county.
 Lecturer, Mrs. H. M. Berdan, Paterson, R. D. No. 1, Passaic county.
 Meets first and third Thursday evenings in Grange Hall at Preakness.
- Egg Harbor, No. 146. Master, Henry Tapken, Egg Harbor, R. D., Atlantic county.
 Secretary, Mrs. Henry Tapken, Egg Harbor, R. D., Atlantic county.
 Lecturer, Carl F. Schirmer, Egg Harbor, R. D., Atlantic county.
 Meets first and third Saturdays in Krein's Hall.
- Wrightstown, No. 147. Master, Herman Croshaw, Wrightstown, Burlington county.
 Secretary, Samuel S. Fort, Wrightstown, Burlington county.
 Lecturer, Mrs. Mary Meany, Wrightstown, Burlington county.
 Meets second and fourth Wednesday evenings in Mechanics' Hall.
- Stanton, No. 148. Master, Watson Anderson, Lebanon, R. D., Hunterdon county.
 Secretary, J. B. Anderson, Lebanon, R. D., Hunterdon county.
 Lecturer, Mrs. J. Rose Schomp, Stanton, Hunterdon county.
 Meets every Thursday evening in Grange Hall, Stanton Station.
- North Arlington, No. 149. Master, F. A. Koch, Stuyvesant avenue, Arlington, Bergen county.
 Secretary, Mrs. Effie G. M. Steup, North Arlington, Bergen county.
 Lecturer, Celia Brandenburg, North Arlington, Bergen county.
 Meets second and fourth Saturdays.

- Burlington, No. 150. Master, Clarence H. Adams, Burlington, R. D. No. 1, Burlington county.
 Secretary, Matthew N. Elder, Burlington, R. D. No. 2, Burlington county.
 Lecturer, Florence E. Sutton, Burlington, R. D. No. 3, Burlington county.
 Meets from December to March Saturday afternoons; March to December every other Saturday evening.
- Milltown, No. 151. Master, Geo. Redshaw, Jr., New Brunswick, R. D. No. 3, Middlesex county.
 Secretary, Frank H. Smith, South River, Box 18, Middlesex county.
 Lecturer, Miss Lillie Brandt, Milltown, Middlesex county.
 Meets second and fourth Wednesdays, Mechanics' Hall, Milltown.
- New Market, No. 152. Master, B. DeWitt Giles, Dunellen, Middlesex county.
 Secretary, W. B. Kurtz, Bound Brook, Middlesex county.
 Lecturer, Mrs. John M. Evans, New Market, Middlesex county.
 Meets second and fourth Thursday evenings.
- Raritan Valley, No. 153. Master, Jacob D. Quick, South Branch, Somerset county.
 Secretary, Mrs. C. S. Phillips, South Branch, Somerset county.
 Lecturer, Mrs. C. S. Hamilton, Somerville, R. D. No. 4, Somerset county.
 Meets second and fourth Monday evenings in Grange Hall at South Branch.
- Union, No. 154. Master, S. S. Doughty, Leesburg, Cumberland county.
 Secretary, S. Anna Sharp, Leesburg, Cumberland county.
 Lecturer, Eunice Camp, Leesburg, Cumberland county.
 Meets second and fourth Tuesday nights in I. O. O. F. Hall, Leesburg.
- Fair Lawn, No. 155. Master, A. I. Ackerman, Ridgewood, R. D. No. 2, Bergen county.
 Secretary, Wm. H. Cadmus, Fair Lawn, Bergen county.
 Lecturer, Clara Courter, Fair Lawn, Bergen county.
 Meets first and third Mondays in Grange Hall, Fair Lawn.
- Raritan, No. 156. Master, Jas. C. Hendrickson, Keyport, Monmouth county.
 Secretary, Harry M. Aumack, Keyport, Monmouth county.
 Lecturer, J. L. T. Webster, Hazlet, Monmouth county.
 Meets second and fourth Wednesday nights, I. O. O. F. Hall, Keyport.
- Farmingdale, No. 157. Master, Charles Craig, Freehold, Monmouth county.
 Secretary, Cora J. Thompson, Allenwood, Monmouth county.
 Lecturer, Mattie Craig, Farmingdale, Monmouth county.
 Meets first and third Friday evenings, Farmingdale.
- Lafayette, No. 158. Master, Jacob S. Losey, Lafayette, Sussex county.
 Secretary, Miss Anna Everett, Lafayette, Sussex county.
 Lecturer, Mrs. C. V. Runion, Lafayette, Sussex county.
 Meets first and third Tuesdays, I. O. U. A. M. Hall.
- Whitehouse, No. 159. Master, H. M. Messler, Whitehouse Station, R. D. No. 1, Hunterdon county.
 Secretary, Miss Ethel M. Burdette, Whitehouse, Hunterdon county.
 Lecturer, Theodore C. Vliet, Whitehouse, Hunterdon county.
 Meets October to April, 2 P. M.; balance of year 7:30 P. M., every Saturday, in Grange Hall.
- Frankford, No. 160. Master, Robert V. Armstrong, Augusta, R. D. No. 1, Sussex county.
 Secretary, Mrs. Robert Armstrong, Augusta, R. D. No. 1, Sussex county.
 Lecturer, Mrs. William R. Bale, Augusta, R. D. No. 1, Sussex county.
- Shrewsbury, No. 161. Master, Lester C. Lovett, Little Silver, Monmouth county.
 Secretary, Frank A. Bloodgood, Lincroft, Monmouth county.
 Lecturer, A. Chapin McLean, Red Bank, Monmouth county.
 Meets first and third Tuesday evenings at Red Bank.

SUBORDINATE GRANGES.

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- South Seaville, No. 162. Master Carlton M. Westcott, South Seaville, Cape May county.
 Secretary, Mrs. Clara D. Townsend, South Seaville, Cape May county.
 Lecturer, Lizzie H. Westcott, South Seaville, Cape May county.
 Meets second and fourth Tuesday evenings in P. O. S. of A. Hall.
- Titusville, No. 163. Master, J. Warren Fleming, Titusville, Mercer county.
 Secretary, Wm. H. Blackwell, Titusville, Mercer county.
 Lecturer, Mrs. Bertha Blackwell, Titusville, Mercer county.
 Meets first Thursday evening and third Saturday afternoon.
- Hardyston, No. 164. Master, E. F. Williams, Hamburg, Sussex county.
 Secretary, Mrs. M. L. Smith, Hamburg, Sussex county.
 Lecturer, Florence C. Martin, Hamburg, Sussex county.
 Meets first and third Monday nights in Mechanics' Hall, Hamburg.
- Farmers' Enterprise, No. 165. Master, Wm. R. Morris, Newton, R. D. No. 2, Sussex county.
 Secretary, Charlie M. Crawn, Newton, R. D. No. 2, Sussex county.
 Lecturer, Mrs. Effie Stoll, Newton, Sussex county.
 Meets second and fourth Saturdays.
- Blue Anchor, No. 166. Master, E. C. Hunter, Blue Anchor, Camden county.
 Secretary, William Marvin, Blue Anchor, Camden county.
 Lecturer, Mrs. Annie Myers, Blue Anchor, Camden county.
 Meets Saturday nights, Grange Hall, Blue Anchor.
- Palermo, No. 167. Master, W. D. Corson, Palermo.
 Secretary, Jesse T. Young, Beesley's Point.
- Glendora, No. 168. Master, Wm. S. Willett, Belmar, R. D. No. 2, Monmouth county.
 Secretary, E. C. White, Belmar, R. D. No. 1, Monmouth county.
 Lecturer, Mrs. R. L. Heulitt, Belmar, R. D. No. 2, Monmouth county.
 Meets second and fourth Friday evenings.
- Millstone Valley, No. 169. Master, G. B. Randolph, Bound Brook, Somerset county.
 Secretary, P. N. Williamson, Millstone, Somerset county.
 Lecturer, Mrs. H. S. VanNuys, Jr., Millstone, Somerset county.
 Meets second and fourth Mondays.
- Lawrenceville, No. 170. Master, Charles H. Smith, Trenton, R. D. No. 4, Mercer county.
 Secretary, Mrs. Frank Applegate, 211 W. Hanover street, Trenton, Mercer county.
 Lecturer, Mrs. Fred Brown, Princeton, Mercer county.
 Meets second and fourth Friday evenings, Grange Hall, Lawrenceville.
- Washington Valley, No. 171. Master, A. L. Zimmerman, Martinsville, Somerset county.
 Secretary, I. R. Penny, Martinsville, Somerset county.
 Lecturer, T. Willard Ayers, Martinsville, Somerset county.
 Meets first Thursday evening.
- Salem, No. 172. Master, Collins B. Allen, Salem, R. D., Salem county.
 Secretary, Anna L. Reeves, Salem, R. D., Salem county.
 Lecturer, Mrs. Emma R. Ayres, Salem, R. D., Salem county.
 Meets Thursday evenings in Dunn's Hall, Salem.
- Anchor, No. 173. Master, J. W. Jamison, Cassville, Ocean county.
 Secretary, C. M. Rorer, Cassville, Ocean county.
 Lecturer, Francis Poppee, Lakehurst, Ocean county.
 Meets November to May, last Saturday afternoon; third Wednesday from May to November, in Mechanics' Hall, at Cassville.
- Pleasantville, No. 174.

- Pompton Valley, No. 175. Master, J. N. Mandaville, Pompton Lakes, Passaic county.
 Secretary, L. R. Lines, Pompton Lakes, Passaic county.
 Lecturer, H. S. Wells, Pompton Lakes, Passaic county.
 Meets every other Tuesday evening in Durling's Hall.
- Swartswood Lake, No. 176. Master, Anna V. Hendershot, Swartswood, Sussex county.
 Secretary, A. W. Huff, Swartswood, Sussex county.
 Lecturer, B. T. Hill, Swartswood, Sussex county.
 Meets first and third Friday night in Grange Hall at Swartswood.
- Stillwater, No. 177. Master, John W. Earl, Stillwater, Sussex county.
 Secretary, Wm. C. Earl, Stillwater, Sussex county.
 Lecturer, O. VanHorn, Stillwater, Sussex county.
 Meets first and third Saturday nights at Stillwater Grange Hall.
- Pequest, No. 178. Master, James Coates, Tranquility, Sussex county.
 Secretary, Clarence Cooke, Newton, R. D. No. 1, Sussex county.
 Lecturer, Mrs. Grace Stickler, Tranquility, Sussex county.
 Meets first and third Thursday evenings in P. O. S. of A. Hall, Tranquility.
- Clayton, No. 179. Master, John Kille, Clayton, Gloucester county.
 Secretary, J. F. Blakeborough, Clayton, Gloucester county.
 Lecturer, Mary Walker, Clayton, Gloucester county.
 Meets every Saturday night in Doun's Hall.
- Pedricktown, No. 180. Master, George Gaventa, Pedricktown, Salem county.
 Secretary, C. B. Green, Pedricktown, Salem county.
 Lecturer, Mrs. May H. Justice, Pedricktown, Salem county.
 Meets Wednesday evenings in Red Men's Hall, Pedricktown.
- Pennsgrove, No. 181. Master, Samuel S. Borden, Pennsgrove, Salem county.
 Secretary, Charles G. Turner, Pennsgrove, Salem county.
 Lecturer, Mrs. Eli Zanes, Pennsgrove, Salem county.
 Meets Wednesday evenings in I. O. O. F. Hall, Pennsgrove.
- Westville, No. 182. Master, Wesley Brown, Westville, Gloucester county.
 Secretary, S. H. Hewitt, Westville, Gloucester county.
 Lecturer, Lavina Headley, Westville, Gloucester county.
 Meets Saturday evenings.
- Acquackanonk, No. 183. Master, Henry Isleib, Paterson, R. D. No. 2, Passaic county.
 Secretary, Herman Rubins, Paterson, R. D. No. 2, Passaic county.
 Lecturer, Mrs. Caroline W. Shuit, Paterson, R. D. No. 2, Passaic county.
 Meets second and fourth Tuesday, Grange Hall, Richfield.
- Plainsboro, No. 184. Master, H. W. Jeffers, Plainsboro, Middlesex county.
 Secretary, Mrs. William Silvers, Princeton, R. D. No. 2, Middlesex county.
 Lecturer, Miss Reba Rigley, Princeton, R. D. No. 2, Middlesex county.
 Meets first and third Monday evenings at Plainsboro.
- English Creek, No. 185. Master, Andrew R. English, Mays Landing, R. D. No. 1, Atlantic county.
 Secretary, Eunice E. Hickman, Mays Landing, R. D. No. 1, Atlantic county.
 Lecturer, May Lee, Mays Landing, R. D. No. 1, Atlantic county.
 Meets every second Saturday at home of Joseph Hickman, English Creek.
- Rio Grande, No. 186. Master, Walter D. Hand, Rio Grande, Cape May county.
 Secretary, Edna Endicott, Rio Grande, Cape May county.
 Lecturer, Emma Fisher, Rio Grande, Cape May county.
 Meets first and third Tuesdays at Rio Grande.

SUBORDINATE GRANGES.

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- Moravian, No. 187. Master, James I. Cook, Delaware, Warren county.
 Secretary, V. R. Loller, Delaware, Warren county.
 Lecturer, Mrs. Rachel Addis, Hope, Warren county.
 Meets first and third Saturday nights at Hope.
- Passaic Township, No. 188. Master, Edwin Bebout, Millington, R. D. No. 1, Morris county.
 Secretary, Florence B. Spencer, Chatham, R. D. No. 2, Morris county.
 Lecturer, Mrs. Elber Bebout, Millington, R. D. No. 1, Morris county.
 Meets second and fourth Monday evenings at Myersville Hall.
- Johnsonburg, No. 189. Master, Clinton Kerr, Johnsonburg, Warren county.
 Secretary, L. E. Savacool, Newton, R. D. No. 1, Warren county.
 Lecturer, Mrs. E. G. Ayres, Johnsonburg, Warren county.
 Meets second and last Saturday nights in Grange Hall.
- Manalapan, No. 190. Master, Wm. R. Conover, Freehold, Monmouth county.
 Secretary, Henry W. Herbert, Englishtown, Monmouth county.
 Lecturer, Mrs. George T. Reid, Englishtown, Monmouth county.
 Meets every other Monday evening.
- Cologne, No. 191. Master, Herman Baum, Egg Harbor City, Atlantic county.
 Secretary, Wm. T. Hohneisen, Egg Harbor City, R. D. No. 1, Atlantic county.
 Lecturer, Mrs. M. Mauroff, Egg Harbor City, R. D. No. 1, Atlantic county.
 Meets first Thursday and third Saturday evenings in Liederkrantz Hall.
- Allenwood, No. 193. Master, S. J. Allen, Allenwood, Monmouth county.
 Secretary, Peter Tilton, Allenwood, Monmouth county.
 Lecturer, L. J. Allen, Allenwood, Monmouth county.
 Meets first and third Thursday evenings.
- Towaco, No. 194. Master, Frank L. Jacobus, Towaco, Morris county.
 Secretary, George S. Pentz, Towaco, Morris county.
 Lecturer, Ludwig Vogel, Towaco, Morris county.
 Meets first and third Tuesday evenings in Country Club House.
- North Haledon, No. 195. Master, Frank A. Thornley, North Haledon, R. D. No. 3, Passaic county.
 Secretary, Mrs. Julia P. Maynard, North Haledon, R. D. No. 3, Passaic county.
 Lecturer, Emil Miller, North Haledon, Passaic county.
 Meets every Wednesday evening in Borough Hall.
- Adelphia, No. 196. Master, Wm. L. Johnson, Jr., Adelphia, Box 83, Monmouth county.
 Secretary, Mrs. Rena Johnson, Adelphia, Box 83, Monmouth county.
 Lecturer, Mrs. John Stricklen, Freehold, Monmouth county.
 Meets first and third Monday in Adelphia Hall.
- Newport, No. 197. Master, Morton N. Bradford, Newport, Cumberland county.
 Secretary, Harry Lore, Newport, Cumberland county.
 Lecturer, Lizzie Newcomb, Newport, Cumberland county.
 Meets in K. of P. Hall, Newport.
- Chester, No. 198. Master, Romeo Robinson, Chester, Morris county.
 Secretary, Charles Rinehart, Chester, Morris county.
 Lecturer, Floyd B. Tredway, Chester, Morris county.

STATISTICAL TABLE OF FARM CROPS AS REPORTED BY SECRETARIES OF THE COUNTY BOARDS.

COUNTIES.	CORN.		WHEAT.		RYE.		OATS.		BUCKWHEAT.		HAY.	
	Average yield per acre —bushels.	Average price.	Average yield per acre —bushels.	Average price.	Average yield per acre —bushels.	Average price.	Average yield per acre —bushels.	Average price.	Average yield per acre —bushels.	Average price.	Average yield per acre —tons.	Average price per ton.
Atlantic,	35	\$0 60									1	\$0 00
Bergen,	50	70			15	\$0 75					1	00 00
Burlington,	50	70	25	\$0 95	15	90					1	00 00
Camden,	55	65					40				1	00 00
Cape May,	35	80	25	1 10			15	\$0 50			1	00 00
Cumberland,	45	73	15	1 00			15	60			1	00 00
Essex,	45		30	1 10	20	1 00	35				1	00 00
Gloucester,	45	68	20	90	10						1	00 00
Hunterdon,	30	75	15	90	17	70	20	40			3	20 00
Mercer,	50	70	28	90	20	80	50	50			1	20 00
Middlesex,	40	80	20	1 05	13	85	35	40	18	\$0 70	1	20 00
Monmouth,	65	80	24	1 00	15	85					1	25 00
Morris,	35	68	25	1 00	20	80	35	50	20	60	1	20 00
Ocean,	30	60	15	1 05	18	85	30	80			1	20 00
Passaic,	30	68	15	90	12	70	30	55			1	28 00
Salem,	40	60	19	95			25				1	28 00
Somerset,	35	75	15	1 00	15	75	30				1	25 00
Sussex,	35	80	18	1 05	16	70	25	50	18	70	1	25 00
Union,	35		12		12		20				1	22 00
Warren,	30	50	20	90	16	90	35	50	20	75	1	20 00

STATISTICAL TABLE OF FARM CROPS AS REPORTED BY SECRETARIES OF THE COUNTY BOARDS.

COUNTIES.	WHITE POTATOES.		SWEET POTATOES.		APPLES.		PEARS.		PEACHES.		GRAPES.	
	Average yield per acre —bushels.	Average price per bushel.	Average yield per acre —bushels.	Average price per bushel.	Average yield per acre —barrels.	Average price per barrel.	Average yield per acre —barrels.	Average price per barrel.	Average yield per acre —baskets.	Average price.	Average yield per acre —pounds.	Average price per pound.
Atlantic,	70	\$1 00	125	\$0 80								
Bergen,	40	1 00										
Burlington,	75	1 00	100	75								
Camden,	125	1 30	150	1 00								
Cape May,	45	1 30	75	1 00								
Cumberland,	90	1 00	95	90								1 1/2
Essex,												
Gloucester,	140	1 00	180	70								
Hunterdon,	25	1 00										
Mercer,	100	1 00	90	1 10								
Middlesex,	125	90										
Monmouth,	200	75										
Morris,	75	1 00										
Ocean,	100	1 00	80	80								
Passaic,	60	1 10										
Salem,	120	1 15	125	80								
Somerset,	65	1 25										
Sussex,												
Union,	25	1 00										
Warren,	25	1 00										

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STATISTICAL TABLES.

STATE BOARD OF AGRICULTURE.

STATISTICAL TABLE OF FARM STOCK AS REPORTED BY SECRETARIES OF
THE COUNTY BOARDS.

COUNTIES	HORSES.	MULES.	COWS.
	Average price between 3 and 7 years old.	Average price between 3 and 7 years old.	Average price between 3 and 7 years old.
Atlantic,			
Bergen,			
Burlington,	\$175 00	\$200 00	\$45 00
Camden,			
Cape May,	160 00	160 00	45 00
Cumberland,			
Essex,	155 00	250 00	50 00
Gloucester,	200 00	190 00	60 00
Hunterdon,	165 00	170 00	45 00
Mercer,	200 00	175 00	70 00
Middlesex,	200 00	175 00	70 00
Monmouth,			
Morris,			
Ocean,			
Passaic,	250 00	250 00	60 00
Salem,	200 00	225 00	75 00
Somerset,			
Sussex,	150 00		50 00
Union,	150 00		50 00
Warren,	200 00	175 00	55 00

STATISTICAL TABLE OF FARM STOCK AS REPORTED BY SECRETARIES OF THE COUNTY BOARDS.

COUNTIES.	VEAL CALVES.		SHEEP.		LAMBS.		SWINE.		TURKEYS.		CHICKENS.		WINTER WHEAT.		WINTER RYE.	
	Total number com- pared with December 1st, last year, per cent.	Average price per pound for season.	Total number com- pared with December 1st, last year, per cent.	Average price per head for store sheep.	Total number com- pared with December 1st, last year, per cent.	Average price per head for spring lambs.	Total number com- pared with December 1st, last year, per cent.	Average price per pound December.	Total number com- pared with December 1st, last year, per cent.	Average price per pound November and December.	Total number com- pared with December 1st, last year, per cent.	Average price per pound November and December.	Area sown compared with last year—per cent.	Average condition De- cember 1st.	Area sown compared with last year—per cent.	Average condition De- cember 1st.
Atlantic, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bergen, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Burlington,	100	\$0 08	.....	.....	.....	.....	.....	125	\$0 07½	125	\$0 20	100	\$0 20	100	100	90
Camden, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Cape May,	100	08	.....	.....	.....	.....	.....	80	09	100	23	100	16	100	100	100
Cumberland, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Essex,	100	09	.....	.....	.....	.....	.....	100	09	100	.....	100	13	100	110	.....
Gloucester,	95	08	85	.....	.....	.....	.....	110	08	100	25	100	20	100	110	100
Hunterdon,	100	08	100	\$5 00	90	\$5 50	100	09	90	20	100	11	95	96	96	93
Mercer,	90	09	100	5 00	100	5 50	100	10	.....	30	.....	18	85	85	85	85
Middlesex,	90	09	100	5 00	100	5 50	100	10	.....	30	.....	18	85	85	85	85
Monmouth, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Morris,	100	10	.....	.....	.....	.....	.....	50	09	120	20	120	18	100	100	100
Ocean, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Passaic, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100	20	100	15	100	150	100
Salem,	100	8½	.....	.....	.....	.....	.....	100	08	100	24	100	22	100	100	100
Somerset, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sussex, .....	.....	.....	.....	.....	.....	.....	.....	150	07	100	25	100	12	105	100	110
Union,	40	07	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Warren,	75	08	25	5 00	25	5 00	50	10	25	25	100	18	50

STATISTICAL TABLES.

**Reports of County Boards of
Agriculture.**

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Reports of County Boards of Agriculture.

ATLANTIC COUNTY.

OFFICERS FOR 1912.

President, JOHN HUENKE, SR.,Egg Harbor City, R. F. D.
Vice-President, CARL SCHIRMER,Egg Harbor City, R. F. D.
Secretary, WILLIAM HOHNEISEN, JR.,Egg Harbor City, R. F. D.
Treasurer, WILLIAM LIEPE,Cologne

Delegate to State Board of Agriculture—

For two years John L. Purzner, Egg Harbor City, R. F. D.
For one year, Carl Schirmer, Egg Harbor City, R. F. D.

Board of Directors—

Henry Tapken, Egg Harbor Grange.
Charles Lingelbach, Cologne Grange.
Jos. Hickman, English Creek Grange.
H. B. Speakman, Pleasantville Grange.
Joseph Weisbecker, Germania Fruit Growers' Union.
J. E. Holman, Hammonton Fruit Growers' Union.
A. J. Rider, Atlantic County Cranberry Association.
John Huenke, Jr., at large.

Considerable more interest was evinced in the transactions of our County Board during the past year, as may be summarized in holding three quarterly meetings, respectively at Cologne, Hammonton and Pleasantville, and annual meeting at Egg Harbor City; besides two Farmers' Institutes held at Hammonton and Cologne, well arranged by the State Board.

Whilst the climatic conditions were not generally auspicious, still, on the whole, the farmers were content with this year's results.

Apples and grapes bore bountiful crops and were especially immune from diseases. In pears, Kieffers only gave a good return. Peaches bore only about one-eighth of a crop.

Strawberries promised fairly, but the weevil in certain sections destroyed the crop. Average prices, two cents per quart higher than in 1910. Blackberries—yield about 2,400 quarts per acre, one-third higher than in previous year; prices, eight cents per quart; dewberries superseding the cane varieties. A very promising and late variety in this section is the Eldorado.

Tomato crop poor, did not set well; yield, four tons per acre. Yield on round potatoes decreased, but sweet potatoes showed an increase, with corresponding prices. On account of drought the hay crop was reduced one-half.

There was quite an epidemic of hog cholera in many sections of the county, carrying off whole pens. In the annual meeting it was suggested that the State Board should devise means whereby the serum to combat the same could be furnished to the farmer at a nominal price, as the present price charged by dealers is prohibitive.

V. P. HOFFMAN,
Secretary.

BERGEN COUNTY.

OFFICERS FOR 1912.

President, WM. BRANDENBURG, JR.,North Arlington
Vice-President, F. M. CURTIS,Harrington Park
Secretary, JOHN M. MYERS,Westwood, R. F. D. No. 2
Treasurer, F. V. STROHSAHL,Park Ridge

The county of Bergen, so close to the large centers of population, is beginning to attract the crowded-out farmers of Long Island.

They find in our county a great variety of soil and conditions to suit any line of agricultural and horticultural work. Farms are being picked up here and there at very good prices, and are being developed according to the teachings of the State Board of Agriculture and other good authorities.

The County Board, in connection with the State Board, held three very well-attended Institutes.

Twenty-five new members were added to the roll during 1911.

JOHN M. MYERS,
Secretary.

BURLINGTON COUNTY.

OFFICERS FOR 1912.

President, CHARLES D. BARTON,Marlton
Vice-President, AMOR J. GAUNT,Columbus
Secretary and Treasurer, H. H. ALBERTSON,Burlington

Nearly all crops were injured by the severe drouth of the past summer, but with some, notably early potatoes and peaches, the net loss was partly made up by the good prices.

The work being done by the County Committee of the Young Men's Christian Association to interest the country boys in farm life is of much importance to the rural welfare. It is most desirable to keep on the farms the most efficient and intelligent of the farmers' sons, that the future agricultural interests of the county, both individual and collective, may be managed by men of ability.

H. H. ALBERTSON,
Secretary.

CAMDEN COUNTY.

OFFICERS FOR 1912.

President, LEON COLLINS,Merchantville
Vice-President, CLINTON CLEMENT,Westville
Secretary and Treasurer, JOSEPH BARTON,Marlton

The twenty-eighth annual meeting of the Camden County Board of Agriculture was held January 9th, 1912, at Haddonfield, N. J., President Leon Collins presiding, who read an able and instructing address. The programme for the day consisted of a number of strong addresses by practical men, mostly local talent.

COUNTY BOARDS OF AGRICULTURE. 281

Horace Roberts, of Moorestown, gave an interesting talk on "The Automobile as a Factor of Farm Life." Mr. Roberts laid stress upon the fact that the automobile was only one of several factors in the revolutionizing of farm conditions during the last decade. First, good roads; then free rural delivery; the telephone, and now, automobiles.

We were fortunate in having with us Edward Mechling, Master of Moorestown Grange, as the next speaker, who gave a very instructive talk on tomato growing.

Henry Albertson read a very complete paper on "The Lime-Sulphur Wash," dealing with this complicated question thoroughly. Mr. Albertson's paper showed clearly that he was master of his subject.

Benjamin Barrett gave us an analytical discussion of the comparative value of the small fruits as a money crop. Mr. Barrett considers the raspberry as the most profitable of the small fruits.

A discussion on potato production, by Harry Hurff and Albert Jaggard, brought out much of interest on this point.

At the morning session we listened to a stirring appeal by the Secretary of Camden County Y. M. C. A., for help for the country boy. He explained at some length the workings of the corn-contest movement, and, on motion of Benjamin Barrett, Martin Schubert, John M. Garwood and S. Harry Hurff were appointed a permanent committee to work in conjunction with the Y. M. C. A. of the county, and to organize a contest for the ensuing year. We are anticipating much increase in enthusiasm and interest as a result of this new movement.

JOSEPH BARTON,
Secretary.

 CAPE MAY COUNTY.

OFFICERS FOR 1912.

President, PROF. H. W. GELLER, Woodbine
Vice-President, HOWARD HOFFMAN, Cold Spring
Secretary, RALPH SCHELLINGER, Green Creek
Treasurer, VOLNEY VAN GILDER, Ocean View

The Cape May County Board of Agriculture held its annual meeting at Cape May Court House, November 4th, 1911; two sessions, morning and afternoon. The morning session was spent in making up crop report and election of officers for the year. The afternoon session was held at 1:30. Professor Geller gave us a good talk on "Soil Improvement in Cape May County." Elwood Douglass favored us with an address on "Sweet Potato Culture and a House for Storing Them for Winter." Ralph Taylor, of Cold Spring, read a well prepared paper on "Farmers' Organizations." Richard Lloyd, of Dias Creek, was elected as a delegate for one year, and J. E. Schaefer, of Woodbine, for two years, to the State Horticultural Society; and Ralph Schellinger, of Green Creek, was elected as a delegate to the State Board of Agriculture for two years. The attendance was very good at both sessions.

We also had a very good spring meeting at South Seaville in connection with the Institute, February 19th, 1912; also a very good Institute at Tuckahoe, February 20th, 1912. Interest seems to be somewhat revived.

RALPH SCHELLINGER,
Secretary.

CUMBERLAND COUNTY.

OFFICERS FOR 1912.

President, WALTON E. DAVIS, Shiloh
Vice-President, A. J. MILLER, Shiloh
Secretary and Treasurer, CHAS. H. DUNSAFE, Cedarville

The Cumberland County Board of Agriculture held its annual meeting March 8th, and elected the above officers for 1912.

A very complete report of the State meeting was given by Mr. Arthur Seabrook; he quoted from good authority that freight rates were more from Trenton to New York than from France to New York, which was a surprise to those present. Mr. J. K. Candle, of Greenwich, gave a very instructive talk on spraying apple trees; had some fine specimens of apples from trees that had been sprayed four times. It pays to spray. Mr. William Minch, of Bridgeton, gave an interesting talk on potato culture in the State of Maine; also stated that \$50,000 was paid for Maine-grown seed potatoes from a radius of ten miles, Bridgeton as the center.

Assemblyman McAllister, of Cumberland county, held the attention of a goodly number of the farmers in the afternoon session for one hour, talking on certain lines that particularly concern the farmers and all taxpayers. Those present were much surprised when he stated in plain language that there was not a practical educator on the State Board of Education.

Mention was made of a bill before the House for greater punishment for chicken thieves, but no mention was made of any new method for catching the thief. Mr. Eno spoke on telephone service in rural districts.

Mr. Zimmerman spoke at some length on the high cost of living, and concluded a very profitable session of the Cumberland County Board of Agriculture.

CHAS. H. DUNSAFE,
Secretary.

ESSEX COUNTY.

OFFICERS FOR 1912.

President, A. W. FUND, Chatham
Vice-President, A. E. HEDDEN, Verona
Secretary, GEO. P. F. MILLAR, Chatham
Treasurer, GEO. E. DECAMP, Roseland

Directors—

A. E. Hedden, Wm. Deicks, Jos. H. M. Cook, E. O. Whetchen,
 Henry F. Harrison.

Delegate to the State Board of Agriculture—

George M. Canfield (1 year), Caldwell.
 Henry F. Harrison (2 years), Caldwell.

Delegate to the State Board of Horticulture—

A. E. Hedden (1 year), Verona.
 E. O. Whetchen (1 year), Cedar Grove.

This year has been fairly prosperous for the Essex County Board of Agriculture. The Board held three meetings and an Institute under the direction of State Secretary Dye. The meetings held from time to time have been

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attended by farmers who do not do all their work in the field but are of the more practicable class, who tell of their successes and also of their failures—what caused the same, and, in their judgment, what would prevent failure in the future. This year, at the spring meeting, the Board secured bids on fertilizer and fertilizer materials, and ordered their fertilizers from one agent in one shipment, thereby saving what they could.

The Institute was held in Roseland, in January, and the wind blew for our benefit and caused more smoke to escape into the hall than by way of the chimney; the windows had to be opened, which allowed the January cold to come in, but in the face of this discomfort the Institute proceeded. The speakers (thanks to them) went on as if in the most comfortable surroundings, and the audience present filled the hall, sitting with their coats on, anxious to hear of improved and better ways.

This year has been prosperous in the way of securing new members. No special effort was made to increase the membership, yet the Board keeps on with a steady growth; but here I wish to say we have lost one of the best agriculturists of Essex county, if not in all Jersey. He was President of this Board when death removed him. In Dr. Joseph B. Ward the Essex County Board of Agriculture had a good councilor, wise adviser and able leader.

The crops in the county have been below the average, owing to the dry weather, but the higher prices made up for the deficient yield with few exceptions—apples, potatoes (white) and corn. The apples were the largest crop this section has had in years, and the price, though a little lower, was away ahead of other years. As for potatoes, they are commercially a failure, what large ones are planted (measuring bushel for bushel); small ones are sometimes not dug at all. As for corn (field, not sweet), that stood the drought and did fine, and although not a full crop, was a long way from a failure, the yield being something like ninety per cent. of a full crop. Sweet or table corn was different. The early did fine, giving a full crop, also the very late; the intermediate produced stalks but was too dry for a salable ear.

GEO. P. F. MILLAR,
Secretary.

 GLOUCESTER COUNTY.

OFFICERS FOR 1912.

<i>President</i> , CLAYTON G. KIRBY,	Mullica Hill
<i>Vice-President</i> , FRANK KIRBY,	Harrisonville
<i>Secretary</i> , MINNIE YOUNG,	Swedesboro
<i>Treasurer</i> , WM. H. BORDEN,	Mickleton

The Gloucester County Board of Agriculture held four meetings during the year 1911, one at Harrisonville, one at Mickleton and two at Mullica Hill.

The programmes prepared by the Executive Committee prove an interesting feature of the meetings. Many questions of practical value to the farmer are discussed, and some very good papers prepared by those to whom questions are assigned, and we believe every one attending these meetings is benefited thereby.

The continued drought during the early part of the season proved very detrimental to the hay crop, which was much below the average. However, we had an abundance of rain later, and most other crops, especially tomatoes, sweet and white potatoes, were very good, and the farmers realized good prices; so, taking it upon a whole, it was a very prosperous year to the most of Gloucester county farmers.

The annual Grange Picnic at Alcyon Park has become an important feature with Gloucester county farmers, and a period that is looked forward to from year to year. It is held during the forepart of August and continues for three days, and it has become a saying that during those three days "all roads lead to Alcyon Park." The committee, of which our Worthy State Master, Hon. G. W. F. Gaunt, is chairman, spare no pains to make this occasion one of pleasure as well as profit, and their efforts have been crowned with success. It requires extra trains on those days to carry the people, so great are the attractions; in fact, I think it might, with all propriety, be called a Fair, when we stop to consider the number of different kinds of machinery that are demonstrated, the many varieties of products of the farm, which in themselves are silent testimonials for Gloucester county farmers; and, too, we would not forget the good work done by our worthy sisters to add to the success of the Picnic. In a building set apart for that purpose may be seen some fine specimens of art needlework of almost every description, paintings, etc. Also a variety in the culinary department which looked very appetizing.

There were two Institutes held during the year, one at Swedesboro and one at Williamstown. Of the one at Williamstown I am unable to give any report.

The one at Swedesboro was held on the 14th and 15th of November, and was called to order by David T. Brown, President of the County Board. In a few well-chosen remarks he extended a cordial welcome to all, and after briefly reviewing the condition of the crops for the year the meeting was given over, in the absence of Secretary Franklin Dye, who was unable to be present, to Mr. Edward Van Alstyne, who conducted it in a very creditable manner.

We were privileged to listen to some very good speakers, and the information given by them, if put into practice, would prove very beneficial to our farmers, and materially to the receipts of the farm.

J. Omar Heritage had a well-prepared paper on the question, "How Can Farmers Put their Products in the Consumers' Hands with Less Expense?" He thought the South Jersey Exchange was a great benefit to the farmers through this section, especially the white-potato growers.

The address given by Hon. Joseph S. Frelinghuysen, President of the State Board, was listened to with much interest, and he gave a number of good suggestions, which should prove of practical benefit to the farmers.

Poultry raising is one of the departments of farming to which considerable attention is given through this section, and in the evening we were privileged to listen to a lecture by Prof. H. R. Lewis, on "The Modern Methods of Poultry Raising," illustrated with stereopticon slides, which helped to impress the facts more forcibly on the mind.

MINNIE YOUNG,
Secretary.

HUNTERDON COUNTY.

OFFICERS FOR 1912.

President, JAMES LANE, Flemington
Vice-President, GEORGE BUSHFIELD, Stanton
Secretary, ROSCOE DE MOTT, Three Bridges
Treasurer, F. J. TOMLINSON, Pittstown

A meeting was called December 6th, 1911, in Flemington Court House, for the purpose of electing officers and delegates. The Treasurer's report was read and adopted.

The past year was not as encouraging to farmers as the year previous. The crops, especially wheat and potatoes, were far below the usual yield.

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Owing to grubs there was a very poor stand of corn in some localities, causing a great deal of second planting, consequently much corn was cut green and damaged by the extremely wet weather during September and October.

Oats and hay were both short because of droughts during the spring months. Oats are lighter than usual, weighing between 25 and 30 pounds per bushel. But the price of both crops is much better than in 1910, bringing the value up to the average. Hay that sold for \$12 and \$14 in the past few years is now selling for \$20.

We stated last year that owing to the high price of pork and the drop in the cost of feed the hog industry was likely to increase in our county, but the tables have turned. Pork sold for 30 per cent. less this fall than last, while the cost of fattening was at least 10 per cent. higher, making the profits of the swine raiser rather small. Consequently, fewer hogs are being wintered this year than last.

On account of the high price of feeding-stuffs and the growing dairy interests the poultry business is somewhat on the wane in Hunterdon. Nevertheless, those who have still remained in the business are constantly improving their flocks and remodeling poultry-houses, adopting the open-front plan, with drop curtains. Plymouth Rocks, Leghorns and Rhode Island Reds are the leading breeds in this section.

There is little change in the dairy. Cattle are worth about \$60. While milk is a better price, the cost of production is correspondingly higher. The following report from the leading creamery association shows decrease in price of butter-fat:

REPORT OF LOCKTOWN CREAMERY, AS COMPILED BY ELLIS COMPTON, FOREMAN.

	No Lbs. Milk Received.	No. Lbs. Butter Made.	Butter Sold for.	Skim Milk Sold For.	Average Test of All Milk Received.	Price Paid Per Lb. for Butter-Fat.
January,	100,026	4,780	\$1,570.15	\$52.27	4.26	\$.34
February,	102,767	5,019	1,549.90	54.21	4.15	.33
March,	126,493	6,067	1,729.30	66.16	3.91	.31
April,	123,006	5,502	1,353.43	67.17	3.87	.27
May,	167,920	7,595	1,873.42	89.86	3.87	.27
June,	166,526	7,547	2,057.01	92.40	3.92	.29
July,	142,604	6,247	1,837.69	79.99	4.00	.32
August,	145,694	6,930	2,089.09	81.87	4.00	.34
September,	143,066	6,793	2,121.35	80.32	4.00	.35
October,	117,207	6,091	1,929.73	66.84	4.13	.37
November,	91,659	4,179	1,600.72	52.82	4.20	.40
December,	84,895	4,517	1,847.45	48.37	4.21	.44
	1,511,863	7,126.7	\$21,559.24	\$832.58	4.04 $\frac{1}{3}$	\$.33 $\frac{7}{12}$

ROSCOE DE MOTT,
Secretary.

MERCER COUNTY.

OFFICERS FOR 1912.

<i>President</i> , J. T. ALLINSON,	Yardville
<i>Vice-President</i> , H. H. HUTCHINSON, JR.,	Robbinsville
<i>Secretary</i> , R. E. HAINES,	Robbinsville
<i>Treasurer</i> , N. J. WOODWARD,	Pennington

The 27th annual meeting of the Mercer County Board of Agriculture was held in the Court House, Trenton, February 15th, 1911. The meeting was well attended and new members were added to the roll. The officers made their reports and Mr. J. T. Allinson made his fourth annual address as President of the Board.

A brief history of the Board from its organization in March, 1883, to date, was read by Mr. S. B. Ketcham, a charter member. Addresses were made by T. E. Hill on "The Farmer as a Citizen," by Mrs. Theodore Brown on "Daughters of the Farm," by Mrs. J. C. Herbert on "Up-to-Date Poultry Management," and by Wallace Lanning on "General Farm Crops of Mercer County." At the afternoon session Senator Jos. S. Frelinghuysen, President of the State Board, and Senator Leavitt, of Mercer county, addressed the Board on legislation of interest to the farmers.

President Allinson, after reviewing the crops grown in the county and the methods of the farmers in their production, said:

"The old joke about the man who farmed from books portrays a condition of the past. We are entering a new era, when the successful farmer must get a portion of his knowledge from books. He must have the theory of agriculture as well as the practical knowledge. Every year fewer young men are leaving the farms for the cities; the tide is surely turning. They are choosing farming for their life's occupation. They are going to the agricultural colleges. They are attending the special agricultural courses and Institute meetings, where the position of the farmer as a business man is being established, where they realize there is a field for their best endeavors on the old homestead, or a carefully-selected farm.

"This generation will yet hear the conversation in the harvest fields about plant food. The nitrates—phosphoric acid and potash in their several forms, as best applied to certain growing crops. You will hear of the balanced rations for cattle, of protein and carbo-hydrates in certain feeds. He will talk and study about the quality and needs of his soil and the application of lime or chemicals which will liberate or make available certain plant food economically. He has learned the theory of farming from books, and, if applied in a practical way, he will produce more bushels to the acre, and more profit from the year's work, all of which will earn him more respect.

"After all, it is generally the prospect of dollars and cents that influences us most in selecting our life's work, and it does seem to me that the time is at hand when, with the same thought, energy and good business management, there is a more attractive outlook on the farm, with the same money invested, than in any other business. The only reason the young man leaves the farm is to earn more money under better and pleasanter conditions.

"At the Agricultural College, the Institute, the Farmers' Clubs and the Grange meetings, we hear new ideas discussed from the lips of men who are doing the thinking. They act as a stimulant to us and we go home with a clue to our own problem—a new light on why we failed in some undertaking.

"The other day a farmer's wife said, 'I have not seen my married daughter for three weeks. The weather was so disagreeable that there was no pleasure in riding in our *automobile*, but I hear from her every day over the *telephone*.'

"Do these conveniences help to lessen the lonely hours and isolation of the farm? Doesn't the rural mail delivery to your door, trolley service to every section of the county, make the country and city conditions nearer alike? Does not the improved roads better the situation for the delivery

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of your produce to the market? I ask you, is not this State of affairs the persuading influence that is deciding our young people to stay on the farm, happy and contented?

"The Granges in this county are flourishing and are doing good work in bringing the farmers and these young people together at their meetings both for business and for pleasure. The co-operative buying of the Mercer County Granges for 1910 amounted to about \$90,000, while the selling of potatoes through the Monmouth County Farmers' Exchange alone amounted to nearly \$100,000.

"We want to increase the popularity and usefulness of this Board, and we know of no surer way than by making our meetings both interesting and instructive, supplemented by our field meetings, which, since their inception three years ago, have proven so helpful and enjoyable in so many ways."

The Fourth Annual Field Meeting was held at the home of J. M. Dalrymple, Esq., Hopewell. The day was fine and the attendance larger than at any previous meeting. Several of the surrounding counties were represented by delegations. The chief address was made by Senator G. W. F. Gaunt, of Gloucester county. Short addresses were also made by members of the Board. The Farmers' Institute, held also at Hopewell, with the Hopewell Grange as host, was well attended and the addresses instructive and helpful on the subjects treated.

There is no evidence of decline in agricultural practice in the county nor any lack of interest in agricultural pursuits. The farming land of the county is retentive of fertility applied to it, and responds well to generous treatment in the application of plant food and wise culture, with generous harvests. Our farmers are not forsaking their farms for other business. Land values are increasing. Our location is advantageous in every respect. We have a goodly heritage.

MERCER COUNTY CROPS, 1911.

	<i>Acres.</i>	<i>Bushels Per Acre.</i>	<i>Total Yield.</i>	<i>Price Per Bushel.</i>	<i>Total Value.</i>
Corn,	17,831	50	891,550	\$0.70	\$624,085
Oats,	4,459	30	133,770	.40	53,508
Wheat,	7,199	28	33,572	.90	30,214
Buckwheat,	41	18	738	.70	516
Rye,	4,494	20	89,880	.80	71,904
Potatoes,	5,479	100	547,900	1.00	547,900
Potatoes, Sweet,	291	90	26,190	1.10	28,809
		<i>Tons.</i>			
Hay, Mixed,	11,513	1¼	14,391	22.00	316,602
Total for all cereals, hay and potatoes,					\$1,673,538

Milk from 8,616 cows giving an average of 2,100 quarts per year each at 4 cents per quart,	723,744
Miscellaneous vegetables and fruits at \$40 per farm,	42,600
Poultry, eggs, veal calves, pork, etc., at \$100 per farm,	1,065
Total for county,	\$2,440,947

DOMESTIC ANIMALS.

Value of all dairy animals,	\$1,315,606
Horses, all ages,	751,150
Mules,	36,961
Swine,	56,994
Sheep,	6,856
Poultry,	135,547
Colonies of bees,	2,555

SOME OF THE EXPENSES.

Amount expended for labor,	\$402,966
Rent and board furnished,	161,764
Amount expended for feed,	201,533
Amount expended for fertilizers,	277,742

FRANKLIN DYE,
Secretary.

MIDDLESEX COUNTY.

OFFICERS FOR 1912.

President, GEO. W. MOUNT, Monmouth Junction
Vice-President, JOHN B. PERRINE, Cranbury
Secretary and Treasurer, WM. H. CLARK, .. New Brunswick, R. F. D. No. 1

Notwithstanding two long and severe droughts during the spring and summer we had a very successful season.

Hay, corn and potatoes were good, with prices higher than they have been for some years past.

At the November meeting, in 1910, Mr. K. C. Davis gave a talk on "Alfalfa" which was very instructive.

On November 25th a Farmers' Institute was held in Friendship Hall, New Market. At the afternoon session the speakers were W. D. Zinn, on "Commercial Fertilizers, Their Use and Misuse"; C. C. Hulsart, subject, "Humus and Cover Crops"; evening session, C. C. Hulsart, "Small Fruit Production"; W. D. Zinn, "Farm, Farmer, and Farming As Seen in Different States."

At the meeting in February, 1911, Mr. Shute gave an address on "Feeding Green Crops to Cows." He said the question of soiling crops is getting more important every year, owing to the high price of feed and the fact that pasture is so uncertain; also that alfalfa was the best crop of all, as it contained so much protein and can be cut so often. At the May meeting, Rev. Ernest C. Brown gave a very interesting lecture on "Utilizing the By-Products of the Bowery on a Middlesex County Farm."

In August the Field-day was held on the farm of Senator Frelinghuysen, as the College buildings, where the meeting is usually held, had been destroyed by fire.

WILLIAM H. CLARK,
Secretary.

MONMOUTH COUNTY.

OFFICERS FOR 1912.

President, C. D. B. FORMAN
Vice-President, GEO. T. REID
Secretary, D. H. JONES
Treasurer, WM. W. MOREAU

The Monmouth County Board of Agriculture has held two meetings since its last report to State Board. First meeting was held in Freehold, February 25th, 1911. The delegates to State Board gave their reports, they being

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Geo. T. Reid and J. H. Du Boise. Delegates to State Horticultural Society reported in persons of W. R. Conover and A. C. McClean. An address on "Preparing Farm Produce for the Market" was given by H. L. Leher, of Keyport. Topic for discussion was, "Fruit Production and Stock Breeding, Feeding, Etc."

The second meeting was held in Freehold, December 2d, 1911. The above officers were elected and delegates to State Board—J. H. Du Boise, one year, and T. P. Jones, two years.

Subjects for discussion were, "Home Mixing of Fertilizer" and "Growing Alfalfa."

Institutes were held in the county at Red Bank, Matawan and Farmingdale. The State Horticultural Society met in Freehold in December, and it was a great benefit to the fruit growers and farmers in general. The display of fruit was one to be proud of, as it was second to none ever exhibited by that Society.

The weather conditions were generally favorable in spring, winter breaking up early, allowing early plowing, but midsummer being dry caused a drawback to most crops notwithstanding. The past year has been a prosperous one for the average farmer; crops good with good prices.

This has been a farmer year for the Farmers' Exchange. They did over a million dollars' worth of business, increased in membership 157, and added several new loading stations.

We have 2,941 farms in Monmouth county, which are farmed by 2,503 white, 384 foreign-born and 54 negroes. The farms rank in size and number as follows: Under 3 acres, 26; from 3 to 9 acres, 301; from 10 to 19 acres, 390; from 20 to 49 acres, 777; from 50 to 99 acres, 680; from 100 to 174 acres, 565; from 175 to 259 acres, 159; from 260 to 499 acres, 35; from 500 to 999 acres, 7; 1,000 acres or over, 1.

There are 306,560 acres of land in Monmouth county—206,856 acres of farm land and 50,000 acres of wood and other unimproved, a total of 75 per cent. of land in county being improved.

Total valuation of all farm property in county,	\$28,945,120
Total valuation of all farm land in county,	\$14,803,850
Total valuation of all farm buildings in county,	\$10,539,345
Total valuation of all farm machinery in county,	\$1,376,750
Total valuation of all domestic animals and poultry and bees,	\$2,234,175
Total number of all cattle,	14,435
Total number of dairy cows,	9,256
Total number of other cows,	766
Total number of yearlings,	1,326
Total valuation of all cattle,	\$527,757
Total number of horses,	8,864
Total valuation of horses and colts,	\$1,357,942
Total number of mules,	414
Total number of swine,	14,132
Total valuation of swine,	\$103,449
Total number of sheep,	1,355
Total valuation of sheep,	\$8,165
Total number of poultry,	198,418
Total valuation of poultry,	\$177,558

The number of farms operated by owners in county, 2,179, this being 75 per cent. of total number of farms—730 operated by tenants and 132 operated by managers.

About 50 per cent. of all the farms are free from debt, the valuation of all farm property being \$28,945,120, which is the highest valuation of any county in the State by \$7,000,000.

The farmers in Monmouth county have expended for labor during the past year \$912,267, making an average of \$2.97 per acre of all farm land, or \$4.20 per acre for improved land.

Money expended for fertilizer, \$542,742, or \$2.20 for every acre of improved land.

Principal crop and yield and price: Corn, 24,699 acres yield 1,099,566 bushels; price per bushel, \$0.70. Wheat, 4,050 acres yield 90,048 bushels; price, \$0.90. Rye, 10,770 acres yield 162,323 bushels; price per bushel, \$0.85. Potatoes, 14,784 acres yield 1,893,523 bushels; price per bushel, \$0.80. Hay 27,673 acres yield 38,117 tons; price, \$25 per ton.

Farm property in general has advanced and the general condition of all property is improving. Looking for a prosperous year for 1913, the farmers will do their utmost to make this coming year a banner one.

D. F. JONES,
Secretary.

MORRIS COUNTY.

OFFICERS FOR 1912.

President, GEORGE E. FELCH,Florham Park
Secretary and Treasurer, WM. F. ELY,Madison

Board of Directors—

George E. Felch, Florham Park; Edgar C. Hopping, Florham Park; Wm. James, Florham Park; Wm. F. Ely, Madison; James Cook, Hanover; Frank P. Cook, Hanover; John J. Mitchell, Whippany; S. E. Young, Rockaway; Wm. B. Lindsley, New Vernon; N. D. Gable, New Vernon.

WM. F. ELY,
Secretary.

OCEAN COUNTY.

OFFICERS FOR 1912.

President, C. MILTON RORER,Cassville
Vice-President, PATRICK DAVITT,Toms River
Secretary, R. C. GRAHAM,Holmeson
Treasurer, H. R. WILLS,Toms River

While our meetings have been irregular and not so well attended the past year, we find the literature a great factor in solving the agricultural problems by those that study it, as it conveys new ideas which are practical in most localities in our county. The dry seasons we have had the past few years, as part of June, July and August was very dry, and the blow on the 18th of August damaged the corn and apples; still, corn made 90 per cent. of a full crop, as the last week in August there was sufficient water fell to thoroughly soak the ground, which brought corn and pasture through.

White and sweet potatoes, a poor yield, but they brought good prices, and it looks as if the good farmer has come to stay, as there is a good margin for his labor.

Winter grain and grass never looked better and promises a good crop but a decreased acreage, as they use grain as a cover-crop to plow under.

Hogs not so high, while poultry and eggs ruled high in price, eggs as high as 45, 50 and 55 cents a dozen.

Hay, straw and corn higher in price than last year, while horses and cattle command higher prices, and scarce.

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Cranberries, not a full crop, but better prices than last year. Apples, low but keeping good. Keifer pears not worth handling and a thing of the past. Lumber and all building materials are high. Farm help is high and scarce, while incompetent help is dear at any price.

While we are getting some improved roads, there is great need of better facilities to reach the markets, such as electric freight road from Trenton to the seashore through this section, as it would develop thousands of acres of land and make homes for many families, insuring a good and comfortable living to the many that long to leave the cities.

Not many farms changing hands, only as death takes the old and their places filled by younger people; so farm land is rising in price. Stock wintering good and no sickness reported.

R. C. GRAHAM,
Secretary.

PASSAIC COUNTY.

OFFICERS FOR 1912.

President, P. F. DUNCAN, Paterson, R. F. D. No. 1
Vice-President, IRA MITCHELL, Paterson
Treasurer, FRANK T. TORBET,
Secretary, AARON LAAUWE,

Passaic County Board of Agriculture held two meetings during the year 1911. The first meeting was held on February 22d, at North Haledon, at which meeting the delegate to the farmers' week at New Brunswick rendered his report, also the delegates to the State Board gave their report. This was quite an enthusiastic meeting, although we only had local talent. We took in fourteen new members. Our second meeting was held at Preakness, which was a business meeting, the new officers for 1912 being elected. Local topics were then discussed by the members, which made a very interesting meeting, after which refreshments were served by the ladies.

CROP REPORT.

The farmers of Passaic county had a fairly prosperous year, although the crops were not so large. The prices obtained were very satisfactory. The potato crop was cut very short by the extreme heat in the latter part of June, making the average less than one-third of a full crop. The prices ruled very high, being from \$3.50 to \$4 per barrel. The grain crop was almost a total failure, being caused by the extreme drought in the fall of 1910, the stand being very poor, wheat averaging from 7 to 8 bushels per acre and rye about the same. The hay crop was a fair one, with prices ruling very high, prime timothy hay selling in Paterson market at \$28 per ton. Dairying held its own, price of milk averaging about 4¼ cents per quart at the door, retailing from 7 cents to 9 cents per quart. Poultry somewhat on the increase, a large poultry plant having been started at Preakness. They intend to get up to fifteen thousand chickens.

AARON LAAUWE,
Secretary

SALEM COUNTY.

OFFICERS FOR 1912.

President, JOHN G. BORTON, Woodstown
Vice-President, MAXWELL W. BUZBY, Woodstown
Secretary, GEORGIE A. DUELL, Woodstown
Treasurer, J. GILBERT BORTON, Woodstown

The meetings of the past year have been well attended and more interest is manifested. Two, the January and April meetings, were held in Woodstown, and the October meeting in Harmersville.

Very good reports of the meetings of the State Horticultural Society and of the State Board of Agriculture have been given by the delegates who attended these meetings.

Four Institutes have been held in the county, some of them very well attended. The agricultural train was greeted by quite large audiences, even though the weather was unfavorable.

The year has been one of varied prosperity to this county.

The dry weather was the cause of unusual shortage of hay. The white potato crop was not up to the average as to yield per acre, but the high prices received gave very good returns to the farmers. Tomato crop was varied, some having a very good yield per acre other very poor; the price of these was also good.

A hail storm in July did great damage to part of the county, especially to corn. Other crops were also damaged. In other parts of the county the crop was fully up to the average yield.

The dairy business is still carried on extensively, yet, owing to the high prices of feed, some have sold out entirely.

Much farm land is changing owners and high prices are being received for land.

GEORGIE A. DUELL,
Secretary.

SUSSEX COUNTY.

OFFICERS FOR 1912.

President, R. V. ARMSTRONG, Papakating
Vice-President, LINUS CLARK, Branchville, R. F. D. No. 2
Secretary and Treasurer, THEODORE M. ROE, Branchville, R. F. D. No. 2

The season of 1911 has not been as prosperous for the farmers of Sussex county as some recent years, owing largely to extreme weather conditions, which have been difficult to contend with.

Spring opened early and most of the oats seeding was done early in April, which has been rare of late years. Corn planting was also done in good time, but the ravages of the cut-worm was so great as to necessitate a second and even a third planting in some instances, which resulted in a very unsatisfactory stand, causing uneven ripening and much unsound corn.

Winter grains were much damaged by the open winter of 1910-11, especially on fields exposed to prevailing winds, where, in some places, they were so badly damaged as to be hardly worth gathering. The average yield is far below that of other years.

Grass started fairly well but was checked by severe drought during May, as was also the early seedings of oats, and though both were helped by rains

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that came about June 1st, the crops were exceedingly short, and oats poorly filled. A great deal of late fodder-corn was planted to make up for the short hay crop.

Potatoes did very poorly, being hardly worth the digging in some places.

Fruit growing is on the increase in our portion of the State. The apple orchards that were set with the peaches 14 to 25 years ago are now proving that it was a wise plan, where good commercial varieties were selected; the trees have been well cultivated and kept healthy by spraying. They are now producing at the rate of 2 to 6 barrels per tree. One grower informs me that he received 25 cents per barrel more for his apples than did his neighbors who have not sprayed, selling to a local speculator, and also found ready sale in local markets for a large crop of Bartlett and Keiffer pears at 50 cents per basket, where unsprayed fruit of the same kinds could hardly be sold at all.

Another grower says he marketed his apples in Newark at \$2.75 to \$4 per barrel, where common fruit went begging at \$1.50 to \$2.50.

The friends of the peach have been trying, with varied results, to again bring it to the place it once held in our county, but it does not grow with us as near to perfection as it did 20 years ago, although where careful, scientific methods are used it still thrives well, and some good crops have been reported this year.

We may say that a new industry for our county has started up this year under the name of the New Jersey Garden Company, and has made an attempt at growing vegetables on a tract of swamp land in Lafayette township, and it is believed the venture will prove to be a success, for although the work of clearing and draining the land was only accomplished during the fall of 1910, and the work of this year has been, in a measure, experimental, several carloads of onions, lettuce, cabbage, celery, etc., were sent out this summer and fall, and the company are much encouraged with the prospects.

There is a great deal of dissatisfaction among our dairymen owing to various conditions, which seem to make it exceedingly difficult to conduct the business at a profit. Among these may be mentioned the high price of dairy feeds, scarcity and high price of efficient labor, the requirements of the Board of Health as to conditions under which milk intended for market must be produced and cared for, which some think are unjust; and then price paid the farmer for the milk is considered too low, compared with the cost of production. Some are giving up the milk business and selling the cows, while others are trying in one way or another to lower the cost of production; of the latter class some are depending on the silo for an important part (and here let it be said that a large number have been built during the last two years, and the users report good results), and others are reducing the number of stock and using somewhat more per cow of home-grown feeds, such as clover and alfalfa hay, and raising more corn, the ears of which are ground and fed to the cows, all of which help to reduce the amount of purchase feeds and increase the profits. Nearly everyone engaged in the milk-producing business recognizes the fact that the improvement of the dairy stock is really the most important step in making the business more profitable, and one has only to take notice and he will see that this has been done to a considerable extent during the last few years.

The Holsteins seem to meet the requirements better than other breeds, and a goodly number of farms may be found on which a few pure-bred animals are kept, and many more where, by a system of selection and grading, the average production of the grade cows nearly, if not quite, equals that of the pure-bred herds.

But not all dairymen raise their stock, some preferring to purchase their cows, thinking the cost of raising is too high, and this makes a thriving business for a few dealers, who bring cows in from other States and sell to those who would rather buy than raise their cows.

Grade cows sell at \$50 to \$100.

Among other live stock we notice more and better colts being raised this year, and a great many more hogs than have been noticed in a long time—the outcome of last year's high price of pork. Result: overstocked local markets on which we depend almost entirely, and, consequently, low prices this fall.

Very few sheep are to be found.

Poultry-raising is about on an average with recent years, though, perhaps, the incubator and brooder are more in favor, as is also the open-front building for winter. Eggs and fowls have commanded good prices throughout the year. Turkeys, ducks and guineas are on the increase.

THEODORE M. ROE,
Secretary.

UNION COUNTY.

OFFICERS FOR 1912.

<i>President</i> , E. R. COLLINS,	Westfield
<i>Vice-President</i> , G. E. LUDLOW,	Cranford
<i>Secretary</i> , C. H. BREWER,	Rahway
<i>Treasurer</i> , OGDEN WOODRUFF,	Elizabeth

During the season, November to April, ten meetings were held by the Board, at their room in the Court House, Elizabeth. Much interest has been shown, especially at the "Specials," viz., one meeting each devoted entirely to some special subject—fertilizers, poultry, fruits, and also review of the season's work and crops by members of the Board. The season of 1911 opened with a wet and cold spring. Very little plowing and planting could be done in the month of April, consequently most crops were late in getting a start, in fact some crops hardly got a foothold before the hot, dry weather in May hit them, and continued throughout the whole summer, proving a more serious drought than that of 1910. Hay and grain crops were cut short, and small fruit crops, which promised well early in the season, turned out less than half a crop. Peaches, while lacking somewhat in size, were fine in quality and a good crop. Kieffer pears fair crop, but matured two weeks too soon and lacked in size, owing to drought. Grapes were a fine crop and of extra good quality. Apples, a large crop, one-half of which dropped early in the season, which proved of great benefit to the balance remaining on the trees, as they developed to a good size, and colored up well and brought good prices in the market. Potato crop a failure, several planters stating the few potatoes which they got cost at the rate of \$10 per bushel, and they are becoming disgusted with potatoes as they have turned out the past three seasons in this section. The corn crop was good, with few exceptions. All truck and garden crops were cut short by drought, which continued until September, when it started to rain and kept at it more or less all the fall, so that much grass and grain could not be sown and cornfodder had to remain in the fields until ground became frozen hard. There is one satisfaction, however: the ground is now thoroughly saturated with water before freezing up for the winter, the first time in several years, which should give a better crop season in 1912. The poultry business in the county is in a thriving condition. The Union County Poultry Association has been organized and has several hundred members. Much interest is being shown in the meetings and a great deal is being done to increase and advance the poultry industry throughout the county. Plans of the Board for the next season's work will be about the same, and specials on the most important topics held at intervals during the season.

C. H. BREWER,
Secretary.

COUNTY BOARDS OF AGRICULTURE. 295

WARREN COUNTY.

OFFICERS FOR 1912.

President, JAMES I. COOK,Delaware, R. F. D.
Vice-President, NICODEMUS WARNE,Broadway, R. F. D.
Secretary and Treasurer, CHAS. M. OBERLY,Phillipsburg

The County Board of Agriculture held three meetings for the year 1912. Our meeting held at Belvidere, June 7th, in the Court House, was an interesting meeting for our Warren county farmers in general. The State Forester, Alfred Gaskill, was present at the November meeting and some of our members were pleased to hear him outline his methods in the forest line. Fertilizers and barnyard manure were discussed to a certain extent, in dry season and wet, the action it had in the soil as plant food, also the high cost of living increasing instead of decreasing. This meeting was instructive to visitors and members. The next meeting was held at Broadway Grange Hall, August 2d, 1911. The topic was, building our State roads and the autos running at a high rate of speed sweeping the binder off the larger stones that are placed in the roadbed. During the dry spells of the season of 1911 some of our State roads are in deplorable condition, as they will always be as long as the auto is allowed to run entirely too fast on these State roads, as the top dressing is swept off by the wind and nothing takes its place, only repairs. There must be something more substantial than what we have at the present time, as it is very expensive to keep in repair. There will be more autos used in time to come. The broad-tire wagon going over these roads crushes and packs the road, always making it better, while the heavy-cushion-tired auto raises and loosens the binder. The Granges and County Boards of the State of New Jersey will always have plenty of work. By the direction of our State Board of Agriculture the members expressed their views on this subject.

The next meeting was held in the borough of Alpha, at Mr. Henry Purcell's residence. The different topics discussed were, Tuberculosis in Dairy Cows, and testing them for that disease. No dairyman should bring into the State of New Jersey a herd of cattle without being tested first, as it will save loss to him by so doing. This meeting was instructive, as dairy farmers in the past have suffered heavily by having their cattle slaughtered for tuberculosis.

CHAS M. OBERLY,
Secretary.

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