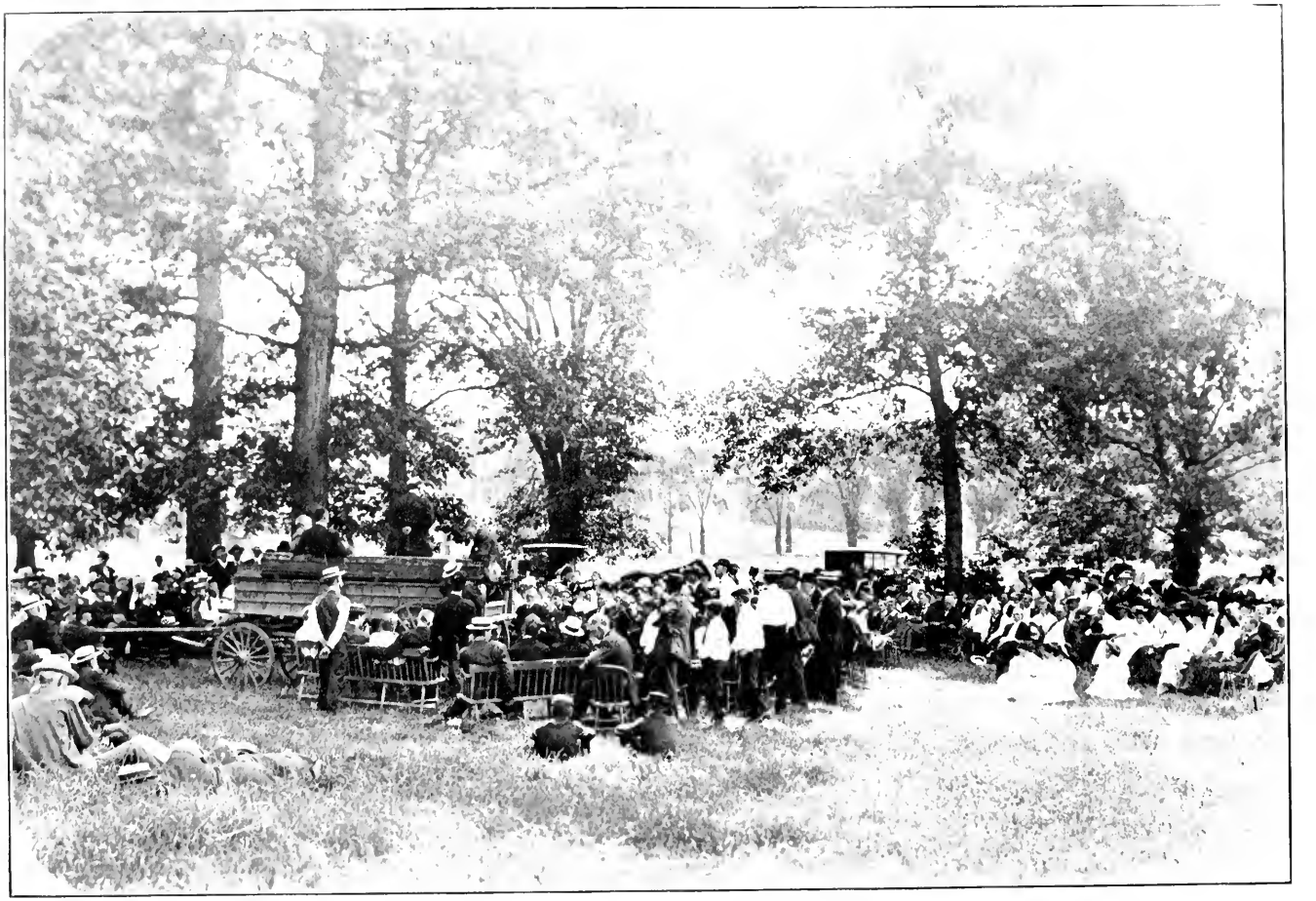
The Connecticut Pomological Society

1908 1909



GATHERING OF CONNECTICUT FRUIT GROWERS

1908 "Peach Field Meeting" of the Society at the Lyman Farm, Middlefield

REPORT

OF

The Connecticut Pomological Society

For the Year 1908

WITH

PROCEEDINGS OF THE EIGHTEENTH ANNUAL MEETING,

1909

Published by
THE CONNECTICUT POMOLOGICAL SOCIETY
1909

OFFICERS

OF THE

Connecticut Pomological Society

FOR 1909

President.

CHARLES L. GOLD, West Cornwall.

Vice-President.

ELIJAH ROGERS, Southington.

Secretary.

HENRY C. C. MILES, Milford.

Treasurer.

ORRIN GILBERT, Middletown.

County Vice-Presidents.

Hartford—LEWIS C. ROOT, Farmington.
New Haven—NORMAN S. PLATT, New Haven.
Fairfield—GEORGE A. DREW, Greenwich.
Litchfield—CHAS. S. PHELPS, Canaan.
Middlesex—WALTER FAWTHROP, Cromwell.
New London—ELWIN HALEY, Mystic.
Windham—F. J. TABER, South Windham.
Tolland—JOHN R. HOUSTON, Mansfield.

Standing Committees.

Legislation.

J. H. HALE, South Glastonbury.
C. H. SAVAGE, Storrs.
W. I. ALLYN, Mystic.

Membership.

GEO. C. COMSTOCK, Norwalk.
A. T. HENRY, Wallingford.
W. E. WALLER, Bridgeport.

Injurious Insects.

DR. W. E. BRITTON, New Haven.
C. D. JARVIS, Storrs.
CHAS. I. ALLEN, Terryville.

New Fruits.

JOHN R. BARNES, Yalesville.
GEO. W. SMITH, Hartford.
HARVEY JEWELL, Cromwell.

Finance.

J. C. EDDY, Simsbury.
J. M. HUBBARD, Middletown.
J. H. PUTNAM, Litchfield.

Exhibitions.

A. B. COOK, Farmington.
PROF. A. G. GULLEY, Storrs.
GEO. H. HALE, South Glastonbury.

Fungous Diseases.

DR. G. P. CLINTON, New Haven.
S. M. FOSTER, Westport.
EVERETT E. BROWN, Pomfret Center.

Markets and Transportation.

J. NORRIS BARNES, Yalesville.
CHAS. E. LYMAN, Middlefield
A. N. FARNHAM, Westville.

Publicity.

STANCLIFF HALE, South Glastonbury.
E. D. CURTIS, Bantam.
A. T. HENRY, Wallingford.

Auditors.

G. W. STAPLES, Hartford.
ANDREW KINGSBURY, Rockville.

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Constitution and By-Laws of the Society

THE CONSTITUTION.

ARTICLE I—The name of this association shall be THE CONNECTICUT POMOLOGICAL SOCIETY.

ARTICLE II—Its object shall be the advancement of the science and art of pomology, and the mutual improvement and business advantage of its members.

ARTICLE III—Any person may become a member of this Society by paying into the treasury the sum of one dollar, and the membership shall cease at the end of the current year.

Any person may become a life member of this Society by the payment of the sum of ten dollars at one time. All moneys from life memberships to form a permanent investment fund of the Society.

ARTICLE IV—Its officers shall consist of a President, First Vice-President, one Vice-President from each county in the State, a Secretary and a Treasurer, to be elected annually by ballot, to hold office for one year, or until their successors are duly elected.

The President, First Vice-President, Secretary and Treasurer shall constitute the Executive Committee of the Society.

ARTICLE V—The Society shall hold its annual meeting during the month of February, the time and place to be decided by the Executive Committee, at which time the annual election of officers shall be held, various reports submitted and an exhibition and discussion of fruits take place; also other necessary business be transacted. Other meetings for special purposes may be arranged for and called by the Executive Committee whenever it is deemed advisable. Printed notice of each meeting to be sent to every member of this society.

ARTICLE VI—The following Standing Committees of three members each, on the following subjects, shall be appointed by the President, to hold during his term of office; the appointments to be announced at the annual meeting of the society.

Business and Legislation,
Injurious Insects,
Exhibitions,
Membership,
Fungous Diseases,
New Fruits,
Markets and Transportation,
Two Auditors.

ARTICLE VII—This Constitution may be amended by a vote of two-thirds of the members present at any annual meeting.

BY-LAWS.

ARTICLE I—The President, Secretary, Treasurer and the Chairman of each standing committee shall each present a report at the annual meeting of the Society.

ARTICLE II—The President shall appoint annually two members to audit the accounts of the Secretary and Treasurer.

ARTICLE III—The Treasurer shall pay out no money except on the written order of the President, countersigned by the Secretary.

ARTICLE IV—All members whose memberships have not been renewed before the end of the current year shall be notified of the fact previous to the removal of their names from the roll.

ARTICLE V—It shall be the duty of the Executive Committee to arrange the programs for the meetings of the Society, to fill all vacancies which may occur in its officers between the annual meetings, and to have general management of the affairs of the Society.

ARTICLE VI—It shall be the duty of the County Vice-Presidents to actively represent the Society in its various lines of work in their respective counties, to arrange for at least one meeting of the Society in their county during the year, and to report to the Society from time to time the progress of the fruit growing industry in their respective sections of the State.

ARTICLE VII—The Committee on Legislation shall inform themselves in regard to such laws as relate to the horticultural interests of the State, and bring the same to the attention of the Society, and also the need of further legislation. And when so directed by the Society, shall cause to be introduced into the General Assembly such bills as may be deemed necessary, and to aid or oppose any bills introduced by others, which directly or indirectly affect the interests of the fruit-grower.

ARTICLE VIII—The Committee on Membership, with the co-operation of the County Vice-Presidents, shall bring the work of the Society to the attention of the fruit-growers throughout the State, and, by such means as they deem best, strive to increase the membership.

ARTICLE IX—The Committee on Exhibitons shall suggest from time to time such methods and improvements as may seem to them desirable in the conduct of the exhibitions of the Society, as well as fruit exhibitions throughout the State; and with the assistance of the Executive Committee shall arrange the premium lists, and have charge of all Exhibitions given by this Society.

ARTICLE X—It shall be the duty of the Committee on Insects and Diseases to investigate in regard to the ravages of these enemies of fruit culture; and to suggest how best to combat them and prevent their spread; to answer all inquiries addressed to them by the members as far as possible, and, when necessary, promptly lay before the Society timely information on these subjects.

ARTICLE XI—The Committee on New Fruits shall investigate and collect such information in relation to newly-introduced varieties of fruits as is possible, and report the same to the Society, with suggestions as to the value of the varieties for general cultivation.

ARTICLE XII—The Committee on Markets and Transportation shall inform themselves as to the best method of placing fruit products upon the market, and bring to the attention of the members of the Society this and any other information concerning profitable marketing.

ARTICLE XIII—The Society will adopt the nomenclature of the American Pomological Society.

ARTICLE XIV—These By-Laws may be amended by a majority vote of the members present at any regular meeting.

THE CONNECTICUT POMOLOGICAL SOCIETY

Proceedings of the Eighteenth Annual Meeting 1909

IN accordance with the requirements of the Constitution and the decision of the Executive Committee, the Society convened for its 18th annual meeting at Unity Hall, Hartford, Conn., February 3 and 4, 1909.

The opening session was called to order at 10.45 Wednesday morning, February 3, by the President, Charles L. Gold of West Cornwall.

The hall was well filled with enthusiastic fruit growers from all over the State and from adjoining States, at the opening hour. Immediately on calling to order, President Gold delivered his annual address, as follows:

President's Address.

Mr. Secretary, Members of the Connecticut Pomological Society and our Friends:

Another year has slipped away and we gather again to meet old friends, and gain new ones, to discuss our successes as well as our failures of the past season, for to err is

human, and I trust we will all return to our homes with inspiration and determination to arrive nearer the top of the ladder the coming year.

This can be accomplished only by careful attention to the details as well as the foundation principles of pomology. No one can make a success of any business without a love and fondness for the work, and this is especially true of Agriculture. It is one of the objects of this Society to instill in the hearts of our members and others who may come within our influence, an ardent desire for companionship with Horticulture in all its branches.

Your officers can do little of themselves except to direct the work. To accomplish results we need the hearty coöperation of all the members. The benefits derived are not alone to be measured by dollars and cents, but by a broader view of life, a wider scope of knowledge and a love for our fellowmen.

By attending meetings, asking questions and stating facts of personal work and observation we render help and inspiration to others, and in helping others we unconsciously help ourselves. As has been truly said, "He who would have friends must show himself friendly."

Do not let us lose sight of the fact that Farming, Agriculture, in all or any of its branches, is a business, and a complicated business, too. This phase of our calling has too long been neglected. Anyone could be a farmer, any slipshod method and work would answer on the farm. When we are ready to realize that Farming is a business and put that theory into practice, adopt business principles in the management of our farms, then we can look for success and not until then.

Agriculture to-day is calling and demanding men of intelligence, energy and thrift. Such men with business capacity will make good at their calling. Is there any business under the sun that would last over night with the neglect and careless management that most farms have received the last fifty years? Just give them judicious business management and watch the result. Have any of the successful

business men of our country reached their position by easy work and carelessness? No, they have worked hard and often late, giving attention to all the little details with energy and snap, together with business principles.

With a given amount of intelligence, attention and business methods there is no calling that will insure so certain a reward as Agriculture. Your President has had the pleasure to represent the Society at a conference in Boston in regard to teaching Agriculture in our public schools.

Personally, I think our public schools have too much other necessary work to undertake this subject. Time is too short; the more advanced schools might take it up with profit.

At a meeting of the Massachusetts Fruit Growers' Association in Worcester last March an association was formed for closer unity of all Horticultural interests in New England, with especial emphasis on uniform rules or laws for packages and packing and grading of fruit for market. A second meeting of this association was held at Milford, New Hampshire, in October, and at this conference each State organization was urged to take action in line of the foregoing plan. This subject should be brought before this meeting for your consideration.

At the Worcester meeting the delegates were handsomely entertained by the Worcester County Horticultural Society, one of the oldest and most enthusiastic Horticultural societies in the country.

In November last, your President, as representing the Connecticut Pomological Society, was invited by His Excellency, Governor Rollin S. Woodruff, to attend as a delegate the Second Annual Conference of Governors of the New England States, which conference has under consideration the making of uniform laws on matters of common interest to the several States. Committees were appointed to draft laws on various subjects, to be presented to the General Assemblies for their individual action.

In closing, just a word about the Country Life Commission recently appointed by the President of the United States. The members of this commission are intelligent, broad-minded

men, and have commanded the respect and attention of the public over the entire country. If it does no more than this it has accomplished a world of good, for when the farmers of this country stop and consider their condition they are bound to work out a remedy, and will do so, I confidently believe.

It is an undeniable fact, contrary to the statements of prominent men in this State, nevertheless, that in the rural towns of this State, and of all the New England States as well, there are thousands of acres that once supported large families and are now completely deserted and semi-abandoned.

One hundred years ago there was no calling so honored or respected as Agriculture. If we have lost that position, it is our own fault. The remedy also lies with us. The Lord helps those who help themselves.

Let us then, by energy and attention to our private business, as well as public affairs, demand, command, and reclaim that position which we have lost. We cannot expect the respect of the world until we respect ourselves, and there is where the whole trouble lies.

Connecticut, during the war of the Revolution, sent more men to the Continental army than any other of the thirteen States, in proportion to her population.

In the war for survival or extinction that is now upon us, Connecticut will do just as nobly. She will arise to the occasion, I am sure. Connecticut will not be found wanting. Now, let us do our part.

MR. L. C. ROOT: I would suggest that those who speak on the floor during this convention raise their voices so that they may be heard distinctly.

PRESIDENT GOLD: When a gentleman rises to speak he should give his name, so that the reporter may hear and take it; he should also speak distinctly, so that all may hear him.

Mr. J. H. HALE: If the gentlemen give their names, are the ladies to give their age? (Laughter).

PRESIDENT GOLD: We will ask Mr. Hale to look after that.

Next in order was the annual report of the Secretary, H. C. C. Miles of Milford, which was presented as follows:

Secretary's Report.

Mr. President and Members of the Society:

To-day we begin our eighteenth year as an organized Society, and those of us whose memory goes back to that day in the year 1891, when, as a small handful of peach growers, we met in a room at the State Capitol and organized for mutual protection against the many foes that threatened the peach industry of the State, cannot help but feel a glow of pride at the magnificent organization that has grown out of that small beginning.

During the past fifteen years the fruit-growing interests of Connecticut have been developed and increased immensely, until now they have reached important proportions. Along with this growth the Pomological Society has ever kept pace; indeed it has been, we believe, a most important factor in the development of this industry that means so much for the health and enjoyment of all the people.

This is a day of remarkable progress and improvement in everything agricultural and the rural home. New inventions and changes in methods come up each year, and for what we think is good to-day a better will be found to-morrow.

It is a fair question to ask, if we, as fruit growers, are living up to our opportunities and getting a fair share of the results of this progress, for, of all men, the fruit grower must be up with the times if he would hope to succeed in his business. And what of this Society, is *it* "making good" for the benefit of its members and the State at large? Taking it all in all, the year just closed has been a very active and useful one in the work of our organization. It is hard to measure the exact results of our efforts,—an enthusiastic meeting here, a helpful suggestion there, someone encouraged to do better

work with his trees and plants, some problem solved or loss of crop averted, the public shown the value and appreciation of fine fruits, and, best of all, our members drawn closer together for mutual help, protection and profit. Is not this a record which we may claim with some pride?

It may seem to some of you like ancient history to dwell upon what has been accomplished during the past year, when the present and future claim our attention so insistently, but we think a brief summary of the work of 1908 will be of some interest and should help us in planning for the year to come.

To begin with,

Our Membership

is of first importance, for upon that depends the very life of the Society. It is our aim year by year to put our strongest and best effort into this matter of membership, not only to obtain new members, but to keep interested in our work all our old members. I regret that the results for the past few years have not been more satisfactory, the number of new members gained just about balancing the number of old members who allow their membership to lapse.

Yet we have no reason to feel discouraged, for Connecticut has one of the largest Societies, in point of members, of any State of its size; still, there are undoubtedly hundreds of persons in our State who should be connected with the Society for their own good and the good of the fruit interests of Connecticut, and it should be a part of our mission to reach these people and interest them.

From February 1, 1908, to February 1, 1909, we have added 93 new members. These, with the total membership of 538 which I reported to you one year ago, makes a total number of names on our list for the year of 631. Since the last annual meeting eight members have been lost by death, and in addition we have dropped from the roll, because of failure to renew memberships during the year, 108 members.

Making these deductions, we have to-day a total of 515 members in good standing.

The following deaths have been reported to this office during the past year: Edwin Hoyt, New Canaan; George M. Clark, Haddam; Dr. William J. Ford, Washington; S. A. Griswold, West Hartford; N. N. King, Suffield; Mrs. A. E. Paulison, West Hartford; Allan R. Yale, Meriden, and William C. Hale, Willimantic.

Our Finances.

From February 1, 1908, to February 1, 1909, I have received and paid over to the Treasurer:

From Annual Membership Fees	$513.00
From Life Membership Fees	70.00
From Sales of Fruit at Exhibitions	23.56
	$606.56

I have drawn orders for the payment of bills amounting to $2,000.96.

The expenditures in the various departments of the year's work are classified as follows:

Annual Meeting of 1908		$369.28
Annual Report		479.74
Crop Reporting		10.75
Annual Exhibition:		
Premiums Paid		304.50
Running Expenses		172.88
Institute Work		74.15
Field Meetings		59.16
Secretary's Office:		
Expenses and Supplies	$116.87	
Salary, balance year 1907	50.00	
Salary, on account of year 1908	150.00	
		316.87
Miscellaneous Printing, Advertising, etc		122.58
President's Office, and other Sundry Expenses		64.05
Total		$2,000.96

Meetings.

Besides the annual meeting last February the Society has held during the year three summer field meetings, the annual fall meeting and fruit exhibition in September and six institutes during the winter of 1908, and up to the present time. All of these gatherings were remarkably well attended and productive of much pleasure and profit.

The season of 1908 was marked by three very successful field days. On June 25, the Society arranged a meeting at Wallingford, especially in the interests of the peach growers of the State. The outlook for the season's peach crop was discussed and plans arranged for making an estimate of the size of the crop and the issuing of a Crop Report. Later in the day the meeting adjourned to the orchards and nurseries of the Barnes Brothers, where an interesting and profitable afternoon was spent.

At Middlefield, August 4, we held one of the biggest and most enthusiastic field days ever held in Connecticut or New England. This was at the splendid farm of Mr. Charles E. Lyman. Between 500 and 600 enjoyed Mr. Lyman's hospitality, saw his extensive orchards with their promising crop of peaches, his apple orchards, magnificent grass lands and corn fields, enjoyed and profited by the addresses of notable speakers, met the representatives of the railroads and the fruit buyers from many large markets. Truly this was a day well spent and long to be remembered. Our thanks are due to Mr. Lyman for his part in making the occasion so great a success.

On August 19 the Society was invited by Mr. Seth Leslie Cheney to visit his fine farm in South Manchester, and those of us especially interested in market gardening and small fruits had the privilege of seeing a well-managed farm devoted to these crops. Mr. Cheney proved a splendid host, entertaining us at the Town Hall, and providing many pleasant features. The visit to beautiful South Manchester was of itself a rare treat, and the afternoon's program of practical

addresses and discussions was most helpful to all of the large number who attended.

The year 1908 again demonstrated the value of these outdoor gatherings, where plant and tree are studied at first hand and the living objects point their lessons and impress upon all important truths. More and better field meetings should be our aim.

Many of the large agricultural fairs of the State desired to have our annual exhibition held with them. After careful consideration, your officers decided to again exhibit with the Rockville Fair, where several successful exhibitions had been held by us in the past. Accordingly our 11th annual fruit show was held at Rockville, September 22 to 24, and while, owing to the short crop of apples in 1908, the display of fruit was smaller than usual, still the undertaking was a success, and a creditable showing of Connecticut fruits was made. The peaches, pears and grapes were especially fine and the display attracted the attention of thousands of admiring people. The spraying exhibit and demonstration was a very instructive feature of our fair.

Between 700 and 800 plates of fruit were on exhibition, and premiums amounting to $306.15 were awarded to 42 exhibitors.

A more detailed account of the exhibition will be found in the report of our Committee on Exhibitions.

Institute Work.

Of the Society's institute work not much that is new can be said. During the past year institutes have received their full share of our attention, and we have met the demand for such work so far as possible and the condition of affairs in the institute system of the State would allow. Since February 1, 1908, our Society has held or taken part in six institutes: Woodbridge, February 19; Ekonk, February 28; Milford, March 3; North Haven, March 27; Naugatuck, March 31, and Southington, January 29, 1909.

As is well known by all, the various State agricultural organizations conducting institutes have recently combined their efforts, and the management of the work is now in the hands of an advisory board. Owing to some delay in perfecting plans during the season of 1908 a less number of institutes were held than in former years. Again this winter arrangements have but just been agreed upon for the season's campaign, but with the large number of applications now on hand for institutes in rural towns throughout the State, a busy and profitable institute season is assured. Our Society will continue to take an active part in this important educational work.

The subject of farmers' institutes is a very broad one, and it seems difficult for all interested in it to agree upon the wisest course to pursue. In our State it is largely a voluntary work on the part of the different organizations representing the several branches of farming, but each organization is striving to make use of a portion of the State funds entrusted to it for the best interests of the State at large.

Crop Reports.

In view of the large peach crop promised last season, the Society made early arrangements for collecting figures and securing an estimate of the probable yield for the benefit of growers and buyers and the railroad people. Our efforts were entirely successful and helpful, materially, in the distribution of the crop and the satisfactory handling, shipping and marketing of Connecticut peaches. The estimate showed the aggregate crop to be about 300,000 baskets, 265,000 of which were to be shipped to markets outside of the State. However, owing to the very favorable demand in the markets near home, the bulk of the crop did not reach outside markets, and prices obtained were generally satisfactory to our growers. The final yield of peaches probably did not reach the estimate figures, the shortage being about 25% with most growers.

The apple crop was forecasted at not over twenty-five per cent. of the normal yield, and even this figure was no doubt found to be too high at harvest time.

This important feature of our work should continue from year to year, for it means much to every business grower and will mean more as the fruit industry grows.

All that we have said thus far concerns "past performances." We may well take pride in what has been accomplished and in the splendid organization that we as fruit growers have built up, in many respects second to none in America, I believe. But what should be our aim in the coming year? In a word, to "keep everlastingly at it" until we win even greater success in attaining the objects for which we were organized.

Fruit growers to-day, like every other class of business men, must stand or fall together. Then, we must impress upon one another, the importance of coöperation, of working together for mutual help and protection and of attacking unitedly the many problems that confront us in orchard, garden, packing house and in the shipping and marketing of our products.

In addition, we have a higher duty, that of educating ourselves and the people around us to appreciate the pleasures of fruit culture and the value of the more extended use of fresh fruits as part of our daily food, and, last, but by no means least, to do all we can to exploit the splendid resources of our good old State and the wonderful possibilities offered right here at home for the production of choice fruits, the equal of any grown anywhere under the sun.

Your officers have worked hard and unitedly for the welfare of the Society, and good feeling and a strong faith in the work prevails among all our workers.

I desire to express my hearty thanks to all who have assisted me in the work of my office and for the patience with which you have borne my mistakes.

May you, each and all, enjoy and profit by the array of

good things promised in the program of this meeting and in the year to come may success attend your efforts.

Respectfully submitted,

H. C. C. MILES, *Secretary.*

On motion, the above report was duly accepted and ordered printed in the Proceedings.

The report of the Treasurer, Orrin Gilbert, of Middletown, was next called for and was presented, as given herewith:

Treasurer's Report

FOR THE YEAR ENDING FEBRUARY 1ST, 1909.

ORRIN GILBERT, *Treasurer,*

In Account with THE CONNECTICUT POMOLOGICAL SOCIETY.

1908.		Dr.
Feb. 5.	To Balance	$249.67
6.	Cash from H. C. C. Miles, Secretary, Annual Membership Fees	271.00
28.	from Annual Membership Fees	17.00
Mch. 27.	from Annual Membership Fees	24.00
May 26.	from Treasurer of State of Connecticut	330.20
	from Fruit sold at 17th Annual Meeting	3.60
July 13.	from Annual Membership Fees	8.00
Aug. 4.	from Annual Membership Fees	48.00
7.	from Annual Membership Fees	5.00
	from Treasurer of State of Connecticut	300.73
19.	from Annual Membership Fees	35.00
Sept. 23.	from Annual Membership Fees	14.00
24.	from Rockville Fair Association Co.	50.00
	from Annual Membership Fees	24.00
	from Fruit sold at 11th Annual Fruit Exhibition	19.96
Oct. 20.	from Treasurer of State of Connecticut	202.37
Dec. 17.	from Treasurer of State of Connecticut	378.44
1909.		
Jan. 2.	from Annual Membership Fees	33.00
5.	from Comptroller's order, account State Board of Agriculture Fund	130.87

28.	from Annual Membership Fees	23.00
30.	from Annual Membership Fees	11.00
		$2,178.84

1908.		Cr.
Feb. 6.	By Check to S. Seward Hopkins, Traveling Expenses as Speaker at 17th Annual Meeting.	$22.40
	Cash to E. Manchester, Apples for use at Annual Meeting	1.00
	Check to U. P. Hedrick, Traveling Expenses as Speaker 17th Annual Meeting	24.00
	The E. Tucker's Sons Co., Paper for Apple Packing Illustration	1.00
	L. B. Judson, for Services and Expenses as Speaker, Annual Meeting	45.70
	G. B. Treadwell, for Expenses as Assistant to Secretary at Annual Meeting	2.95
	Geo. C. Comstock, Services as Assistant to Secretary at Annual Meeting	4.00
	Dudley Wells, 2d, for Expenses as Membership Committee at Annual Meeting	5.00
	R. S. Bascom, for Cash Advanced on Express, account Annual Meeting	8.72
13.	New Dom Hotel, Bill for Officers and Speakers, account 17th Annual Meeting	44.00
	H. C. C. Miles, Secretary, for Expenses and Supplies, 17th Annual Meeting	13.55
	The Milford Post Office, for Stamps and Stamped Envelopes for Mailing Programs	20.36
18.	Whitehead & Hoag Co., 500 Membership Badges	22.40
	Beeman & Hatch Orchestra, Music, Evening Session, 17th Annual Meeting	16.00
	The First Unitarian Cong. Soc'y, C. H. Field Treasurer, Rent of Unity Hall, 17th Annual Meeting	60.00
	Henry M. Howard, for Services as Speaker at 17th Annual Meeting	20.00
	H. C. C. Miles, Office Expenses and Supplies, Nov. 15, 1907, to Feb. 1, 1908	33.69
19.	J. H. Hale, 1 Box Apples, Expressage and Supplies, 17th Annual Meeting	3.05
	The Rex Sign Co., for Sign Painting.....	2.00

		Prof. C. D. Jarvis, Expenses as Speaker, 17th Annual Meeting	2.78
		The Hartford Lumber Co., Lumber for Demonstration Table, 17th Annual Meeting	2.83
		Elbert Manchester, 1 Barrel Apples for Packing Demonstration	4.50
		B. H. Walden, Expenses of Lantern, 17th Annual Meeting	2.48
		Clarence H. Ryder, Printing 1,000 Programs for 17th Annual Meeting	12.00
		John Coombs, Plants for Stage Decoration, 17th Annual Meeting	5.00
		J. H. Putnam, Traveling Expenses to Institutes	20.35
		Orrin Gilbert, for Cash Advanced for Supplies, account Fruit Exhibition, Nov. 1907	3.35
		H. C. C. Miles, Balance Salary for 1907	50.00
		New York Dft. to Prof. M. B. Waite, Traveling Expenses as Speaker at Annual Meeting	28.80
Mch.	10.	By Cash to Prof. F. Atwood Sirrine, Traveling Expenses and Services at Milford Institute	11.42
	18.	By Check to Milford Post Office, 500 Stamped Envelopes and Postal Cards	7.86
	21.	A. B. Cook, Expressage and Supplies, account Capitol Exhibit and 17th Annual Meeting	3.25
		Kilborn Bros., Envelopes, etc., for Mailing Programs	4.26
May	18.	Prof. C. D. Jarvis, Institute Expenses, Feb. 1908	12.70
		The Tuttle, Morehouse & Taylor Co., 4 Membership Receipt Books, 1 Order Book.	9.25
		Miss G. S. Smith, Reporting Proceedings Annual Meeting	50.00
June	4.	Prof. A. G. Gulley, Institute Expenses, Winter of 1908	14.15
		Clarence H. Ryder, Printing Programs for North Haven Institute	5.50
		H. C. C. Miles, Secretary, Telephone Charges, Secretary's Office, Jan.-April, 1908	9.15
		The Milford Citizen, Printing Programs 4 Institutes	7.00
		Dr. W. E. Britton, Institute Traveling Expenses	2.50

	H. C. C. Miles, First Payment on Salary, account 1908	50.00
June 10.	Joseph R. Clark, Supplies and Printing, Sept. 1, 1907, to Feb. 5, 1908	30.15
July 13.	The Milford Citizen, 300 Postal Cards and Printing Field Meeting Notices	4.00
21.	Clarence H. Ryder, Payment on Bill for Printing Annual Report, 1908	150.00
	The Milford Post Office, 250 Stamps for Mailing Annual Report, and Stamped Envelopes	22.86
Aug. 3.	Milford Post Office, Postage Stamps for Mailing Crop Report Blanks	6.00
7.	H. C. C. Miles, Office Expenses, etc., Feb. 1 to July 1, 1908	32.37
15.	Clarence H. Ryder, Balance of Bill for Printing 700 Copies Annual Report	224.75
25.	The Farmer Printing and Publishing Co., for making Half-tones used in Annual Report	6.75
	C. G. Whaples & Co., Printing Letterheads and Envelopes	5.25
	Clarence H. Ryder, Printing Crop Report Blanks and Programs for Field Meeting	8.75
28.	The Milford Post Office, Stamped Envelopes and Stamps	13.36
	New York Dft. Geo. T. Powell, Services and Expenses attending Field Meeting as Speaker	22.20
	H. C. C. Miles, Second Payment on Salary, account 1908	50.00
Sept. 21.	W. J. Moffatt, 1,000 Envelopes and Printing for Annual Exhibition	2.50
22.	J. Sutta, Making and Printing 45 Premium Ribbons	4.50
23.	John W. Clark, Services and Expenses as Judge at 11th Annual Exhibition	10.00
24.	By Cash to W. O. Hollister, Expenses of 4 Helpers at 11th Annual Exhibition	14.70
	Geo. C. Comstock, Services as Entry Clerk, 11th Annual Exhibition	3.50
	By Check to The Rockville House, M. McPherson, Hotel Bills for Officers, Committees and Judges, 11th Annual Exhibition	41.25

	30.	The Milford Post Office, Stamps and Stamped Envelopes for Postage, account Annual Exhibition		11.62
		W. H. Burr, Traveling Expenses, attending Field Meeting		2.80
Oct.	10.	Kilborn Bros., Envelopes		3.88
		Clarence H. Ryder, Printing Notices of Field Meeting		3.50
		P. O. Order, The Fair Publishing House, Entry Books for Fruit Exhibit		3.00
		By Check to The E. Tucker's Sons Co., 2 Rolls Paper for Tables, Annual Exhibition		4.02
		H. C. C. Miles, Supplies and Expenses, Annual Exhibition, Rockville		13.55
		P. O. Order, Vredenburg & Co., 1,100 Lithograph Fruit Cards for Advertising		3.35
	13.	By Check to T. F. Rady & Co., Printing Fruit Cards for Advertising		4.00
	21.	By Cash to Wilfred Wheeler, Expenses as Judge, 11th Annual Exhibition		6.00
		Mrs. H. L. Crandall, Expenses attending 11th Annual Exhibition as Judge		2.00
		By Check to Clarence H. Ryder, Printing 1,000 Premium Lists, 11th Annual Exhibition		13.75
		Prof. A. G. Gulley, Washing and Packing Plates, account 11th Annual Exhibition		1.44
		Chas. L. Gold, Traveling Expenses, attending Meetings, etc., Feb. to Oct., 1908		73.35
	24.	L. C. Root, Expenses and Supplies, account 11th Annual Exhibition		5.75
		Prof. C. D. Jarvis, Expenses in Connection Spraying Exhibit, 11th Annual Exhibition.		22.80
		H. C. C. Miles, Third Payment on account Salary as Secretary		50.00
Dec.	5.	B. C. Patterson, Treasurer, Expenses of Joint Board Institute Managers, Season 1907		2.82
		The Milford Post Office, 500 1-cent Stamped Envelopes		5.62
		Clarence H. Ryder, Binding in Cloth 50 Copies Annual Report		14.50
		By Premiums Paid, as awarded at 17th Annual Meeting, as follows:		16.75
		W. A. Stocking & Sons	$2.00	
		R. S. Griswold	1.00	
		Geo. W. Staples	1.25	

	H. E. Savage's Sons	2.50	
	Joseph Smith	2.00	
	W. E. Waller	1.00	
	Dennis Fenn	2.00	
	Earl C. Roberts	1.25	
	L. J. Robertson	.75	
	E. M. Buck	.25	
	Thos. Callahan	.50	
	J. C. Eddy	.25	
	J. L. Rice	.50	
	F. E. Tucker	.50	
	E. J. Ellsworth	.50	
	F. B. Miller	.25	
	H. I. Nettleton	.25	
17.	By Check to H. C. C. Miles, Secretary, Office Expenses and Supplies, July 1 to Dec. 1, 1908.		38.66
19.	By Premiums Paid, awarded at the 11th Annual Fruit Exhibit, 1908, viz:		304.50
	Mrs. E. W. Ellison	$31.50	
	Mrs. Harvey Jewell	11.25	
	H. Elliott Savage	2.00	
	Mrs. Joseph Barber	3.25	
	H. E. Savage's Sons	24.00	
	Harvey Jewell	5.00	
	L. J. Robertson	2.00	
	A. B. Cook	2.50	
	Clarence H. Savage	27.65	
	J. M. Hubbard	2.50	
	Jos. Albiston	4.00	
	H. O. Griswold	4.50	
	Geo. F. Platt	4.20	
	Geo. H. Hale	1.00	
	Everett E. Brown	29.75	
	T. H. & L. C. Root	7.75	
	F. B. Bailey	9.00	
	Fred Gehring	3.25	
	Geo. W. Smith	2.75	
	Chas. I. Allen	21.00	
	G. A. Drew	4.25	
	Geo. P. Wood	2.00	
	Arthur J. Clark	1.75	
	Dennis Fenn	3.00	
	Miss Alice Fawthrop	1.50	
	Mrs. Geo. P. Wood	2.00	
	Elbert Manchester	5.00	

	Lyman Payne	1.50
	G. G. Tillinghast	4.50
	Mrs. F. B. Bailey	23.25
	Chas. L. Gold	14.50
	H. B. Buell	3.65
	T. K. Winsor	5.75
	Geo. C. Comstock	1.00
	Prof. A. G. Gulley	8.50
	J. H. Putnam	10.00
	W. Maxwell	3.00
	Walter Fawthrop	5.50
	Geo. S. Butler	3.75
	Greenwood Deard n	.50
	Louis Pero	.75

1909.			
Jan.	19.	By Cash to Geo. D. Bone & Son, Printing in Duplicate 35 Circular Letters	3.00
		By Check to Clarence H. Ryder, Printing Circular Letters to Granges, account Institute Work	3.50
		Joseph R. Clark, Printing and Supplies from March 1, 1908, to December 31, 1908	41.70
	21.	By Cash to The Rex Sign Co., Lettering 2 Card Signs for Annual Meeting	.75
	27.	By Check to The Milford Post Office, Stamped Envelopes for Postage on Programs	11.84
		By P. O. Order, Vredenburg & Co., 500 Lithograph Cards for Advertising	1.67
		By Check to The Best Mfg. Co., Printing and Padding 900 Calendars	9.00
Feb.	1.	Balance	177.88
			$2,178.84

SUMMARY.

Receipts	$2,178.84
Expenditures—	
Premiums Paid	321.25
Miscellaneous Expenses	1,679.71

AVAILABLE RESOURCES.

Feb. 1, 1909.	Amount in Berlin Savings Bank	$188.69
	Due on account State Appropriation for year ending September 30, 1909	1,121.56
	Balance in Treasury	177.88

SOCIETY'S PERMANENT INVESTED FUND.

1908.			
Feb.	1.	Amount on Deposit in Berlin Savings Bank	$113.47
	17.	Deposit, Life Membership Fee	10.00
	19.	Deposit, Life Membership Fee	10.00
July	1.	Interest	2.52
Dec.	19.	Deposit, Life Membership Fee	10.00
	24.	Deposit, Life Membership Fee	10.00
1909.			
Jan.	1.	Interest	2.70
	5.	Deposit, Life Membership Fee	10.00
	22.	Deposit, Life Membership Fees	20.00
			$188.69

AUDITORS' CERTIFICATE.

We have examined all the books of the Treasurer, Orrin Gilbert, and find them correct.

GEORGE W. STAPLES,
ANDREW KINGSBURY,
Auditing Committee.

HARTFORD, CONN.,
Feb. 3, 1909.

Following the reading of the Treasurer's report and the acceptance of the report of the auditors, it was voted: To accept the report of the Treasurer, and order the same printed in the proceedings.

Reports of Standing Committees.

Report of Committee on Legislation.

MR. J. H. HALE, *Chairman:* During the last year the General Assembly not being in session, there has been nothing for your committee to present to them.

Your committee has but little to report at this time, but later will have some recommendations in relation to some matters that need improving. As noted by the President's address, this Society has for two years, through its officers, been meeting with some of the other New England State Horticultural Societies and planning for some uniform package laws. At the recent conference of the governors of the New England States there were discussions of matters of general interest to all New England, one of them was the subject of Horticulture,—presented by Professor John Craig of Cornell University. While there were various committees appointed at that conference they did not really act until this last week, when before the General Assembly of Connecticut was presented a matter that will be given a hearing this afternoon. A committee of three (one senator and two representatives) conferred with a like committee from each of the other States concerning the adoption by the General Assembly of such laws as affect our common interests; and the commission will take up the work that our own Pomological Society has been considering along these lines. I would like to present the following resolution, Mr. President:

Whereas, The Connecticut Pomological Society has for several years been coöperating with the Horticultural Societies of the other New England States to secure uniform laws on matters affecting our common interests as fruit growers;

Therefore, be it

Resolved, That we welcome the introduction into the present General Assembly, of the bill providing for a special

committee of the General Assembly for the purpose of co-operating with a like committee for each of the other New England States, with the idea of attempting uniform legislation on such matters as affect the common interests of all these States.

And we hereby pledge our hearty support to the movement.

Upon motion of Professor Gulley, duly seconded, the resolution was adopted.

MR. HALE: I move that President Gold be authorized to go before the Judiciary Committee at the Capitol this afternoon and present this resolution before that Committee.

Duly seconded and passed.

Report of the Committee on Exhibitions.

MR. L. C. ROOT, Chairman: Our exhibition of 1908 was held in connection with the Rockville Fair, the date coming nearer the ripening of apples, of which the greater part of our Fall exhibition is composed. The total number of plates exhibited fell far below our usual record on account of the generally short fruit crop. Our growers have come to know what good fruit is, and that it is of no use to try to compete with imperfect fruit. Therefore the quality was good, even to the taxing of our excellent judges to decide on the first premium in some cases.

One member, who grows almost perfect fruit, had things altogether too much his own way, and your committee wishes to say right here that especial effort should be made to get our larger growers to exhibit at this annual fair, and thus make more competition. It would also prove that this is a fruit-growing State and help to sell those abandoned farms at good prices.

The small growers are keeping these exhibitions up and are doing well, but let us have help from those who have large quantities of fruit to make selections from.

The total number of plates on the tables at Rockville was about eight hundred, divided as follows: Apples, 303; pears, 170; peaches, 64, with 170 plates from the State college, the balance of grapes, plums and quinces. Several handsome packages for market were exhibited, deserving the blue ribbons placed on them.

While the exhibition from the College at Storrs does not appear in our premium awards, not being entered in competition, yet we must not fail to give them the credit due for the large part they take in our annual exhibit, as well as in all of our State, and some of our County, expositions, in all of which they show us the results of experiments that the average fruit grower could not afford to carry on alone. Thus we are able to grow our fruits with less uncertainty as to the results of our labor.

A new feature in our tent at Rockville attracted much attention, and we feel that it might be well to encourage in some way the exhibition of flowers with our fruit. Mr. and Mrs. Chapman of Westerly, R. I., had on exhibit two hundred and fifty varieties of dahlias. It must have been a revelation to many, and all surely enjoyed the sight.

Respectfully submitted,

L. C. ROOT,
GEO. H. HALE,
A. G. GULLEY,
} *Committee.*

The report was accepted.

Report of Committee on Markets and Transportation.

MR. J. NORRIS BARNES, Chairman.

Mr. President and Members of the Connecticut Pomological Society:

At our annual meeting one year ago, a resolution was passed, instructing this committee, in connection with the executive committee of this Society, to make an attempt to ascertain the probable volume of the peach, apple and other fruit crops of the State the coming season.

As a first step to such work, a meeting of the joint committee was held in Wallingford, Conn., in early summer, which the fruit-growing public was invited to attend. This meeting was well attended, persons representing all sections of the State being present.

A count of the probable volume of the fruit crops, particularly apples and peaches, was made as represented by the judgment of those present. The summary was turned over to the secretary of the Society, Mr. H. C. C. Miles, for verification by further investigation and correspondence before submitting the final conclusions as to the size of the crops of fruit, and particularly on needs for transportation facilities to our railroad traffic managers.

At a meeting later, held at the place of Mr. Charles E. Lyman, the final conclusions of the work, resulting from the information collected, was placed before the proper transportation authorities, who arranged a satisfactory service in getting our fruit to market properly. Your committee feel that the service in transportation, as arranged and rendered, was in general, most excellent.

In getting such articles as our best fruit products to market, and especially in selling satisfactorily, very much depends on the transportation, the delivery of the fruit at the selling place in good season. The failure to reach the desired market in proper or schedule time, whether due to failure in transportation, or other causes, usually results in serious loss to the grower or owners of the fruit, whoever they may be. And your committee feels sure that the effort made by those in authority in such matters to give good service in handling our fruit products is heartily appreciated by all receiving benefits of such service.

Some small fruits, particularly strawberries, also peaches, were the fruits principally coming under our observation as producing a surplus over local market needs, and requiring transportation. The greater part of our fruit crops were needed and used in our nearby local markets. The apple crop proved very small and poor, as a whole, however, we believe that all growers having crops of good fruit during the past

year have realized most gratifying results for the same, and that looking ahead for some time in the future, the skillful grower of fruit, whether in large or small quantities, has a sure and satisfactory reward in return for same.

This report was accepted and adopted.

Report of Committee on Injurious Insects.

DR. W. E. BRITTON, Chairman: An important feature of the season of 1908 was the local appearance of Canker Worms throughout the State. Most of the damage was apparently done by the fall species, and several orchards were completely stripped in May. The Canker Worm injury brought to my attention was mostly along the coast, but the insect was present in some localities in the northern portion of the State. Orchards around Stamford, East River and at Stonington were completely defoliated. A thorough spraying of the foliage with poison will prevent injury, and where spraying is not practiced, sticky bands applied in October and kept sticky through November and December, and again in spring will protect the trees from damage. Probably this insect will do even more damage the coming season than in 1908, so all orchardists should be prepared to spray early.

The Peach Sawfly was observed in a number of different orchards, and though it is now quite well distributed throughout the southern-central portion of the State, it has not yet been sufficiently abundant to do much damage except in the Barnes orchards at Yalesville, where the thorough spraying with lead arsenate in 1907 served as an important check to this insect. We have no record of any spraying being done against it in 1908, but all orchardists should be on the lookout and prepared to give such a treatment in case the Peach Sawfly appears in destructive numbers.

A prevalent and apparently increasing pest is the Lesser Apple-worm (*Enharmonia prunivora* Walsh), which eats or mines the surface of the apple when nearly ripe, often injuring the appearance of the fruit in storage. Usually the blossom end of the apple is injured, but this insect may attack any por-

tion of the surface, and sometimes penetrates to the seeds. Though the injury is usually very shallow, it hurts the appearance of the fruit and makes an opening for the germs of decay.

The larva is about three-eighths of an inch long, and being flesh-colored, it is usually mistaken for the Codling Moth, to which it is closely related. This insect was first discovered about forty years ago by Walsh in Illinois, and Professor Quaintance of the Bureau of Entomology at Washington has recently studied it and published a bulletin about it. There are two generations each year, and the best treatment that can now be advised is to spray the orchards as for Codling Moth.

The Green Apple Aphis (*Aphis pomi* De Geer) and the Rosy Apple Aphis (*A. sorbi* Kalb) were both abundant. The former caused considerable injury to young trees by checking their growth. Both species injured the crop by causing the leaves to curl and the fruit to be stunted, gnarled and ill-shaped. As a rule, the presence of the aphids is not noticed until the leaves have become so curled that it is difficult to reach them with a spray. Of course kerosene emulsion, or soap and water (one pound in six gallons) will kill the lice if the mixture comes in direct contact with them.

The Strawberry Weevil (*Anthonomus signatus* Say) was received from South Killingly and from Huntington, where it was doing considerable damage to strawberries by puncturing the buds and causing them to wither and die. The larvae feed upon the maturing pollen. The remedy is to plant pistallate varieties so far as possible, using just enough perfect flowered varieties to insure pollinization.

The Raspberry Sawfly (*Monophadnoides rubi* Harris) was received from Stonington, where the larvae were feeding upon raspberry leaves.

The Hickory Tussock Moth (*Halisidota caryae* Harris) though abundant in 1907, was even more abundant in 1908. The caterpillars are more than an inch long and are covered with white hairs, with pencils or tufts of black hairs. They feed not only on hickory, but attack apple and other fruit trees

and a large number of shade and forest trees. In the fall of 1908 thousands of these caterpillars were killed by a fungous disease and their dead bodies could be found on the bark of trees or on fences and stone walls throughout the State.

Young pear trees were injured at Wallingford by the New York Weevil (*Ithycerus noveboracensis* Forst), which in the adult state ate the new growth of the trees in May, causing it to break off. A thorough spraying with lead arsenate seemed to check the trouble.

Home-made soluble oils have been well tested in Connecticut during the past season as a remedy for San José Scale, and though they have been found fairly satisfactory, our experience prompts us to recommend that in most cases the average orchardist had better purchase a ready-made article than attempt to make it himself.

Several growers are still relying upon the lime-sulphur mixtures. There are several ready-mixed entirely soluble lime-sulphur preparations now on the market which sell for a reasonable price. Some of these have given good results, but should be further tested before being generally recommended.

The San José Scale has not multiplied quite as rapidly as usual in Connecticut during the past two seasons on account of being checked by severe freezing, which killed a large percentage of the over-wintering females. Nevertheless, late in the season the pest had accumulated sufficiently to leave no doubt as to its destructive character and its ability to increase under ordinary conditions. The pest must be controlled by artificial measures, though we do not dread it as we did a few years ago.

Good progress has been made in controlling the Gypsy Moth at Stonington. Fewer caterpillars were found in 1908 than during the previous year, though more trees were banded. The area infested has been diminished, and though a careful search has just been made, only six egg-masses were found.

The Brown-tail Moth has not yet been found in the State, though it is expected at any time. Large numbers of winter nests containing living caterpillars have recently been found on

seedling nursery trees imported into New York State from France. As there is no provision for inspection of imported stock at the ports of entry, the importer should have the stock looked over carefully before distributing it.

As a result of the Governors' Conference at Boston, a meeting of the boards of agriculture and State nursery inspectors of the six New England States was held at Boston, December 4, 1908. The question of securing greater uniformity in the laws of the New England States regulating the inspection of orchards and nurseries and the shipment of nursery stock was discussed, the chief idea being to promote orcharding in New England and to protect this section of the country from insect and fungous pests. The matter was further considered by a sub-committee which met at Baltimore at the time of the Official Horticultural Inspectors' meeting on December 28, 1908. A rough draft was prepared, embodying the chief desirable features of our present law and strengthening the weak points. An attempt will be made to enact this in modified form, or some similar measure, in the other New England States. A National measure would be desirable so far as uniformity is concerned, but this cannot be obtained, and the only alternative is for the States to coöperate by making their laws as uniform as possible.

Respectfully submitted,

W. E. BRITTON, New Haven, *Chairman.*
C. D. JARVIS, Storrs.
E. M. IVES, Meriden.

The above report was accepted.

President Gold then called for the first address on the morning's program, "Commercial Fruit Growing in New England," and introduced as the speaker, Prof. F. C. Sears, Professor of Pomology at the Massachusetts Agricultural College.

Commercial Fruit Growing in New England; its Advantages and Disadvantages.

Prof. F. C. Sears, Amherst, Mass.

Mr. President, Members of the Connecticut Pomological Society, Ladies and Gentlemen:

I don't know but I have made a mistake in appearing before you without a paper, for, so far this morning every speaker has had one. It is not usually my custom to prepare a paper to read before an audience, and I did not do it this time. The reason I didn't prepare a paper is that I feel I can talk better if I am looking at the faces in the audience. I heard Mr. Collingwood about a year ago at Amherst give an address; he had prepared a paper and read it and gave as his reason for so doing that he had recently heard his children discussing whether they preferred to have the minister read his sermon or speak from notes, and his little daughter remarked that she would much rather he would read it, for then she knew when he got through.

I don't suppose you are at all interested in my personal history, but I wish to tell you a few incidents concerning myself, in order that you may understand the point of view from which I look at the subject on which I am to speak. I claim the honor of being a Massachusetts boy, but very early in life I took Horace Greeley's advice and went West—to Kansas; so I am essentially a Western man. I was six months old when I went West and I lived there practically all my life until ten years ago, when I went to Nova Scotia, and remained there until I went to the Massachusetts Agricultural College at Amherst a year ago.

Now I don't know how much you people know about Nova Scotia, although I have no doubt you know more than I did of that country previous to my going there, for about all I knew was that it had the highest tides in the world and that Halifax was the capital. But I found it a wonderful fruit-growing country, and everyone there interested in fruit. If a policeman stops you on the street, it is not to arrest you—

at least, it never was with me—but to ask you concerning the different varieties of plums or as to a remedy for black knot. The Annapolis Valley is practically one orchard, from one end to the other. It was there that I learned the most that I know about the business of growing fruit. It is principally from the standpoint of the Nova Scotia people that I am looking at the fruit industry here. I don't know so much about the conditions surrounding fruit growing in Connecticut as I do about the conditions in Massachusetts, but I have been a good deal disappointed in going over Massachusetts, and in looking over the product of the orchards of that State, to find that fruit growing is not of more importance; that more fruit is not raised and that it is not better grown.

It seems to me this condition of affairs comes about largely from the fact that a man going into fruit growing feels that it is going to be a long time before he will get returns from his investment, and he naturally prefers to go into something where he will get returns more quickly. If you buy a cow you can milk her the next day, or if you plant a crop of tomatoes you get your money out of them that season, perhaps, but you cannot get returns as quickly as that from your orchards. But this idea of the length of time required for an orchard to come into bearing has been greatly exaggerated because the fruit business in the past has been largely conducted along entirely wrong lines. A man has set out from a dozen to a hundred Baldwin apple trees upon a hill, using the land for a hay field and letting the cows take care of the trees, and in that way ten or fifteen years or even more elapse before they come into bearing. It seems to me high time that all that sort of thing was abandoned.

We must take better care of our fruit, and bring it into bearing in a reasonably short time.

I believe there is no line of farming which is more profitable, one year with another, than the fruit business, and I would like to give you a few instances where it has proved so down on Cape Cod. We ordinarily think of Cape Cod as a cranberry country and nothing else, and yet I saw there a case where a man had gone into tree fruits and made it profitable.

He had a three-acre peach orchard, five years set, which had given him a gross profit of two hundred dollars per acre last season. Naturally all the neighbors are inquiring about the matter, and I predict a large business in tree fruits in that section of the country in the near future, if all who take up the work are fortunate (as was this man) in setting the right varieties and taking proper care of the trees.

Another man in the same neighborhood had a few apple trees in his garden. He showed me a Baldwin tree seven years old, from which he had picked a barrel of fine apples, which he sold the day I was there for three dollars and a half. Most people don't think of getting a Baldwin into bearing by that time. He also showed me some McIntosh Red trees, of the same planting, that gave him four bushels this year. That was hard to believe, but I was assured it was a true statement. Now if a man had a number of acres giving these returns he surely would have a good proposition.

Another case: People ordinarily think of an agricultural college as a place where they spend money, instead of making it, and where they do everything in an expensive way. Yet we have in one of our orchards two rows of trees—one of Wealthy and one of McIntosh Reds (now some thirteen years set) that have averaged us two bushel boxes per tree each year since they were five years old; and we sell these apples at two dollars per box; and since I have been there we have not been able to supply the demand for this fruit at this price. The trees are planted 40 feet apart, and at two dollars a box and two boxes per tree, it doesn't give a large yield, but with these varieties the trees could be planted much nearer and the income be materially increased.

Still another case: A year ago this fall I was up in "Apple Valley," in Franklin County, where they are said to grow the very best apples that are grown in Massachusetts,—and in talking with one man (who, I must say, didn't seem to have very much of an orchard, although he said he harvested something like a thousand barrels that year and got around three dollars and a half a barrel for his crop), in speaking with him about the value of farms about there, I asked him what a

certain farm nearby was worth, and his reply was, between $5,000 and $6,000. We inquired about one or two other farms and received the same reply. Then he said, "You know we can grow apples on this land, and where you can grow apples the farms are more valuable." That has certainly been my observation! Where people go into fruit and apple growing, the farms *are* more valuable and the people live better.

Just one more instance to show the profits from fruit growing. Several years ago the Nova Scotia Fruit Growers' Association wished to get some definite facts about the matter, so they made out some blanks and sent them to the different growers, asking them to fill in their returns for the last five years, giving amount of fruit produced and the price at which it was sold, etc. The returns from ten of their best growers showed net profits amounting to from 11.7% to 24.5% on a valuation of $1,000 per acre. And mind you this, as I said, was the average for five years and not some one year's big profit.

We often hear the question discussed as to what is the value of a bearing orchard per acre, but I think you will agree that if we put it at $1,000 we are putting it high enough. They have not many advantages, if any, over us here, but they do have many disadvantages. So if they can make their big profits we ought at least to do as well.

I come now to the real subject for discussion—"The Advantages and Disadvantages of New England for Fruit Growing."

May I give you two points which I should consider disadvantages under which we labor? The first, and the most important, and one which I should like to see overcome at once, is so comparatively few people engaged in the work.

Wherever you find any line of business engaged in extensively by a large number of men, you find that industry pushed to the front. That is one of our great difficulties throughout Massachusetts. While occasionally you find a man in the business, making money out of it, the general run of people are in general farming or dairying and do not pay any particular attention to fruit.

The second point, and one more difficult to overcome, is the matter of markets, or to speak more accurately, the reputation of our fruit *on* the market; I have classed this under the head of advantages, too, but at present I believe it is more of a disadvantage than an advantage. A single case will serve to illustrate the point. Last year we had some extremely fine fruit from one of the experimental apple orchards. It was sent to Boston and put in cold storage, and when it came time to put it on the market, we sent a young man with experience in packing, to look after it. The fruit was packed in boxes very nicely; the young man said he didn't think the Oregon people could have done better.

Our idea was to put this fruit on the high-class market, and the young man visited the different high-class fruit men and grocers, and in nearly every instance when the proprietors were told that the fruit for sale was grown in Massachusetts, they refused even to look at it, saying they preferred to handle the Oregon or Washington apples. They said that when their customers ordered a dozen apples they always wanted those from the Pacific coast rather than eastern grown apples, as they knew what they were getting, and knew every apple would be perfect.

Now, that is the difficulty we have to overcome, and it arises in this way. We raise, unfortunately, a large amount of poor fruit. We are right here in the midst of the largest markets in the world, and if a man has a barrel of windfalls, or fruit he has knocked off with his pole, he puts this fruit on the market as Massachusetts or Connecticut apples and we all get our share of the blame for it. Whereas the Oregon and Washington growers are so far away from the market that they know it is not good business to send to the market any but the very best of their fruit. Consequently consumers imagine they produce nothing but the very choicest of fruit, and their fruit is correspondingly popular.

If we could place ourselves in the same position and realize that every time we put a box or barrel of poor fruit on the market we hurt ourselves, and our neighbor as well, we would stop doing it and stop it at once.

So much for our disadvantages. Now, let us look at some of the advantages.

One of the first and by all odds the most important, is that we can grow fruit of the highest quality. We don't always do it; for quite often we do quite the reverse. But we can if we will. One of the famous apples of Nova Scotia—perhaps the one which is the favorite, is the Gravenstein. They can grow them to perfection. Yet I have seen in Massachusetts as fine Gravensteins as were ever grown in Nova Scotia. And other varieties the same way. New England Baldwins and Rhode Island Greenings and Hubbardstons and Wealthys are the equal of any grown anywhere.

While in Nova Scotia I was greatly interested in reading some letters that an old friend of mine had received from the late Charles Downing. One which interested me particularly was where Mr. Downing said that from only one other section had he received as high-class fruit as he had from Nova Scotia, and that was from the Tennessee and North Carolina mountains. And he attributed the excellence of the fruit to the high altitude in the one case and the high latitude in the other. We ought to adopt "Quality" as our slogan. And we ought to advertise the fact that our apples are of the highest quality! Insist on it, in season and out of season, that we have the best grown.

Second, there is no question but that we have the finest markets in the world right around us, and if such a thing should happen as that we should produce more than our markets could take care of, we have the European markets to fall back on. Nova Scotia depends on them altogether, and her fruit growers were always trying to get freight rates equal to the freight rates out of Boston, but could never do so. Certainly we have a distinct advantage in getting into the English markets in the matter of freight rates.

The next general advantage is in the matter of labor.

In our operations at Amherst we have had practically no difficulty in getting first-class labor at reasonable rates, and when our plantation becomes established I believe we shall have still less difficulty. It is a further advantage to the fruit

grower that fruit is coming to be looked upon as a necessity everywhere. It goes along with flour and sugar and kerosene and tobacco, and people will have it; they cannot get along without it.

Another advantage, which goes right along with this question, and which we have over some other kinds of produce, it is impossible to hold our product over from one season to another.

I should like next to discuss with you briefly, the question of "What are the Elements of Success?"

And I should put at the head, going into the enterprise on a reasonably large scale. One of the greatest difficulties that our fruit industry has to-day is that everybody is in it on a *small* scale,—perhaps an acre or two, and that is not enough, so that the owners can afford to take the best care; not enough to arouse any particular interest in it. When you have five or ten or fifteen acres, or more, of good bearing orchards that are giving you the highest returns of any part of your farm every year, or every other year, nobody can help getting enthusiastic over it. I know that it is quite possible to overdo it—to put out more than a person can take care of to advantage, but I am satisfied that there are thousands of orchards neglected because of being too small, where one is neglected because it is too large.

There are many other advantages from the larger plantation besides arousing a man's interest and enthusiasm. You can buy fertilizer and machinery and spraying material and many other things to better advantage if you have a large orchard than if you have a small one. (In this sense I would call a large plantation from four acres up). You can afford to hire better men. You can get better prices for your fruit. And in almost every way the larger orchard can be handled more profitably.

The next question is the one of varieties.

I am not going to discuss this matter in detail now, but have only to say that the question of varieties very often makes the difference between success and failure. We should not be carried away with the idea of buying certain varieties that

have flourished somewhere else, in an entirely different climate than our own. Some people get enthusiastic about the western apples; they have seen the monstrous size and fine color of the fruit coming from there, and they see no reason why they cannot do the same thing here. I think at the college we receive more inquiries about the question of varieties of fruit, than on almost any other question, and probably we are more often asked about the Delicious apple just now than any other variety. Now, I don't know personally of any bearing trees of that variety in the State. There may be some, but probably there are not. And certainly it has not been grown here sufficiently to warrant us in planting it except here and there a tree to test it. Ben Davis is another time-honored instance of where we have run away after some variety which has been famous in some other section, but which we can't grow worth a cent. I should like to go on record as saying that we never ought to set out a tree of Ben Davis in either Connecticut or Massachusetts.

Professor Waugh and I are planting a good many more varieties than I would advise most people to plant. I believe there are more orchards made unprofitable by planting a large number of varieties than in any other way. There is no doubt in my mind but that the average man will do better to plant an orchard of Baldwins and Rhode Island Greenings. But what we are planning to do is to get a man to handle our fruit in each of the larger towns, and we want to start in with the earliest apple in the summer (the Yellow Transparent, or some better variety) and then carry him along through the entire season until it comes to the Baldwin or even later varieties. The varieties we have are Yellow Transparent, Oldenburg, Wealthy, McIntosh Red, Gravenstein, Hubbardston, Sutton Beauty, Palmer Greening, Rhode Island Greening, Baldwin, etc.

Next as to the matter of cultivation:

I know there are orchards throughout the country in sod which are successful, but I am sure it is usually a dangerous proposition to seed an orchard down, especially if one has any cows to eat hay. It removes the temptation if you don't have

any hay growing in the orchard, and there are advantages in a cultivated orchard. We shall practice thorough cultivation from early spring until about July first, when we will sow a cover crop.

Another factor of success, and one altogether too often neglected, is the matter of fertilizing. I believe one reason why the Western apple grower raises such handsome fruit is because he is growing his fruit on new land, which is full of plant food; whereas much of our land is poor and worn out. I am obliged to admit that this is one of my theories, but it is one I firmly believe in. Last year I saw an interesting fact which bore out this theory of mine. We had, on one of the farms we bought, a small Baldwin orchard, and across the road from it were the buildings and a few scattering trees on the same farm. We fertilized the orchard well (and incidentally, we got a crop this year that more than paid for the land and the fertilizer we put on it), but the apples were not particularly attractive. But one tree across the road, which grew by the side of the hen yard, and where the people dumped their ashes from the kitchen stove, bore Baldwin apples that looked no more like the apples in the orchard across the road than our average fruit looks like the Western product. The apples from this one tree were highly colored and very attractive. Now, I am not saying that this difference was due to the continued and high fertilization the single tree received, but I believe that it was, and that a generous application of fertilizer will do much to improve the appearance of our fruit. At least, we intend to make fertilizing a prominent feature of our program. I would not like to tell you what our bill for fertilizer was last year, nor that it will be larger this year.

Last year we used sulphate of potash and basic slag. We applied generally over the field 400 to 500 pounds per acre of basic slag and 200 to 300 pounds of high-grade sulphate of potash. Then besides that, to our small trees that we set out last year, we gave one ounce of nitrate of soda per tree, using thorough cultivation in the plantation all the time, and our trees made a growth of from a foot and a half to three feet this

last season and are in fine condition. And this in spite of the fact that our land was badly run down.

We use the Filler system, planting standard trees 33 feet apart each way, and interplanting both ways, which brings the trees down to sixteen and a half feet apart. We plant solid blocks of apple or peach trees, for the most part, whatever kind of fruit we are setting.

We buy one-year-old apple trees when we can get them. Last year we had to take a few Hubbardston two-year-olds, but as we head our trees 18 inches from the ground we much prefer one-year-old stock, as we find we get a better and more symmetrical growth from the year-old trees. I should prefer one-year trees for any height of head, but for our low heads they are almost essential.

QUESTION: Do you let them branch near the ground?

PROF. SEARS: Yes. We expect to do some hand work around them, and there is not much more of such work with low heads than with high ones. We have five hundred peach trees 12 inches from the ground and they made the best growth of any trees that we set last year.

There are two more points which I wish to mention as elements in any successful scheme of orcharding. One is the disposition we make of our number two apples, and the other in packing. We are bound to have some number two's, and probably some number threes. The twos may, perhaps, be disposed of as fresh fruit, if they are as carefully graded and handled as our number ones, but the threes must be dried, used for cider or sent across the water to be used as champagne, or else thrown on the dump. They should *never* go to the market in a fresh state.

The last is the question of packing.

Here, I believe, is where the Western growers have us beaten worse than anywhere else. We grow less good fruit than they, it is true, and then much of what we do grow we ruin in packing.

One feature which I have introduced in my senior pomology class is the getting of packages of fruit from all the famous fruit regions; from Hood River, Oregon, British Columbia, and other places, so that the boys may see the very best types of packing and packages. The fruit from these places comes out of the packages without a bruise or blemish, every apple wrapped in paper, the right kind of boxes used; often the wrapper around each apple contains some attractive design or some advertising literature. While we here in New England are too often content to shake from the tree and dump them into barrels for market. We need to learn lessons along many lines, but none more imperatively than along the line of packing our fruit.

Prof. Sears' very interesting address was attentively listened to and greatly appreciated by all present.

At 12.30 a recess for dinner was declared.

Before adjournment Mr. Hale called attention to the Fruit Banquet, to be held in the evening, at Jewell Hall, and urged all to secure tickets and attend.

Afternoon Session.

President Gold called the afternoon session to order at 2 o'clock. At this session the attendance increased to large proportions, making it one of the largest and most enthusiastic meetings in the history of the Society. Every seat in the large hall was occupied, and the interest in the speakers and their subjects remained unabated until the close of the afternoon.

President Gold: We will now have the report of the Standing Committee on Fungous Diseases, which will be in the form of an address by the Chairman, Dr. G. P. Clinton, and will include some very important statements on the Peach Yellows and the diseases of melons.

Report on Fungous Diseases for 1908, with Special Notes on Melon Culture and Diseases, and the Peach Yellows.

Dr. G. P. Clinton, Botanist of the Connecticut Agricultural Experiment Station, New Haven.

The past season was one which was not especially favorable for fungous diseases in this State, but rather on account of the droughts, proved unfavorable for the development of many of our common troubles. Though on the whole it was a very poor year for apples, none of the fungous diseases were unusually prominent except the leaf rust (*Roestelia pyrata*). This fungus, which has its earlier stage on the red cedar, must have had unusually favorable conditions for its spread, since it was more frequently sent to the writer for identification than in any previous year. It was reported abundant on the Wealthy, Westfield Seek-No-Further, and less so on the Roxbury Russet and the Greening. Usually one does not find this rust on the fruit itself, but the past year it

was found a number of times, and in one case very common on the apples of a roadside seedling. A related species (*Roestelia aurantiaca*) also occurred more commonly than usual on the quince. In this case the fruit only is attacked, usually at the base near the stem, and when serious, the rust prevents its maturity. As these two rusts are not perennial on their hosts, but depend on annual spring infection from the so-called "cedar apples," we need not necessarily expect them to be prominent the coming year.

The peach, perhaps, more than any other fruit, had an unusual share of troubles, yet the weather was so favorable, especially during the ripening period, that less than the usual amount of scab, and practically no brown rot, developed. The cold weather in late January and early February, besides killing many of the blossoms in certain orchards, also produced a more serious trouble, called collar girdle, in which the bark near the surface of the ground was killed. The bacterial leaf spot, to which attention was first called a few years ago, was more common than I have yet seen it, but was not so abundant as to cause any very serious injury. Mr. Rorer, of the United States Department of Agriculture, recently reported this trouble as sometimes causing serious injury in the Southwest, where it attacks the fruit and twigs, as well as the leaves. This disease is now known to be identical with the black spot on the plum, which has been reported here rarely on the fruit. As many of you are aware, Mr. Waite has definitely identified the trouble mentioned by Mr. Lyman and others at our last meeting, as the Little Peach, so called on account of the small, late-ripening fruit. This is said to be of a nature similar to the yellows.

So far as this latter trouble is concerned, while certain orchards have suffered severely from it or so-called "yellows," apparently it has not proved quite so serious as anticipated by some. At least, certain nursery trees, and even some trees in the orchard, thought a year ago last fall to be showing signs of the yellows, the past year apparently outgrew the trouble. These trees, no doubt, were merely temporarily injured by the

drought of 1907; but they illustrate the fact that it is not always possible for even an expert to positively distinguish the first symptoms of yellows from similar symptoms produced by other causes. But of this subject of yellows I shall speak at length later on.

So far as the musk melon crop was concerned, while there was some injury by the blight, etc., toward the end of the season, this, on the whole, was the best melon year for some time.

So much for the diseases of our fruits the past year. I wish now to ask your attention more particularly to two diseases that have an important bearing upon the success of the melon and peach industries of this State, viz.: the melon blight and the peach yellows, these terms being used in a broad sense.

Musk Melon Experiments.

During the past ten years, at least, the musk melon industry of this State has had a hard time to maintain itself, and, in fact, the acreage has probably decreased. Without question, during certain years the acreage has been considerably less than in other years. The reason for this has not been glutted markets or poor prices, but chiefly because of the failure of the crops and the poor quality of the melons. Because of the gradual decline of the Southport White Globe onion industry in the Westport district, and possibly because of failures with onions and tobacco in the Hartford district, and threatened peach yellows in the Wallingford districts, increased attention of late seems to have been directed to melon-growing. The very evident success that has attended the efforts of certain growers the past year, due quite largely to an exceptionally favorable season, seems also to have greatly increased the interest, so that I should not be surprised if next year saw a considerable increase in the acreage. This being so, perhaps it may be wise to briefly consider here the factors that determine successful melon growing in this State. I make these out to be five in number and of varying value.

First is the market. I think this factor places us at a distinct advantage over any other State in which melons are grown commercially. We have an excellent local market, which certain growers have already developed for themselves because of the quality of their melons, and then there is the general local market, which is never glutted with melons of good quality, though there may be an excess of the poor ones grown here and elsewhere. If it pays to ship in poor Rocky Ford melons from distant States, ought it not to pay to grow good melons locally? But aside from our local markets, which can take care of most of the crop at present, we are exceptionally well situated for the New York and Boston markets. If it pays to ship melons from Montreal to Boston, it certainly ought to from Connecticut, when we have learned the tricks of successful melon culture. Even now we ship some melons to New York and Boston. I understand that melons on the Boston market last season from the vicinity of North Haven were a success, both financially and otherwise. At least concerning their quality, I was informed by one who bought them in the open market that they were equal to any he had ever eaten. A certain grower near Westport for some years has been sending melons to New York, sometimes selling them by the pound, and his success has encouraged certain of his neighbors to enter the business. The market, I think we can conclude, is not an unfavorable factor in this State.

The second factor, or set of factors, is the land and cultural conditions, and these do not present any unusual drawbacks for Connecticut. The usual care in fertilization and cultivation pays here as with other crops, and while there are no mysterious features connected with these, of course experience always gives to each grower its advantages. As melons love a warm, dry season, certain exposures where the sunlight is greatest and the soil is warm, rather than wet and cold, have their advantages. Possibly certain definite regions like the sandy soils around North Haven may prove especially adapted to the growing of melons.

Under the third factor I include varieties. There are certainly a great many varieties of musk melon, and each seems to have at least a catalog reputation of value. Without question certain varieties, as the Montreal Market and the Rocky Ford, do better in particular regions than they do here. What we need to know is what varieties are best adapted to our conditions, and also if we can improve the strains of these. Growers of experience here have, with some cost to themselves, more or less definitely decided what are the best melons for them to handle. From what I can learn the Emerald Gem at present has the best reputation, or at least is the melon most generally grown for local markets. A certain mysterious French melon, not listed in the seed catalogs, said to be a cross of the Emerald Gem and the Montreal Market, enjoys a rather unusual reputation. I should like to learn more about this particular melon, as I have heard that it was raised by a number of growers last season. But with a varied or extensive market, besides quality, which I place first, and yield, there is the keeping factor, which determines whether or not the melons can be placed on a more distant market, such as Boston or New York. In order to learn something about different varieties of melons and their value to this State, the New Haven Station last year, in coöperation with Mr. Frisbie of Southington, grew about one hundred varieties, and expects to grow them again the coming year. Of these varieties none proved of any greater worth, as to quality, than the Emerald Gem. Though last year was a better year than usual to obtain quality, the greater part of the varieties, so far as this test shows, were poor in this respect. The varieties that gave melons the majority of which were of good or excellent quality are as follows: Admiral Togo, Defender, Emerald Gem, Extra Early June, Fordhook, Hackensack, Hoodoo, Missouri and Stokes' Standard Salmon Flesh. I think that it is important for the grower to determine from his own experience, as well as from that of others, what is the best melon for his conditions, and then by rigid selection from his own stock, try to improve the strain. Where one depends upon the market for his seed, he will find

that the same variety has strains of different values, and also the type is not always constant. For instance, we found among our melons grown from seed from the same source a considerable variation in certain characters, especially shape, and even in color, since both green and salmon fleshed melons were present in the same varieties. These differences may be due to mixture of the seed, or lack of fixity in the characters of the particular variety.

The two remaining factors that have an influence on our melon industry are much more difficult ones to regulate than the preceding, and may be considered briefly under the headings,—weather, and fungous and insect enemies. A cold, wet spring and summer and early fall frosts are very considerable factors in making a poor crop. Of course we cannot regulate the weather, but by selection of certain varieties we can usually escape much of the injury from early fall frosts. The varieties grown should be ones in which most of the melons are out of the way by the first of September. Late maturity is one of the objections against the Rocky Ford melon here, though this, no doubt, could be largely overcome by selecting earlier maturing strains. I have heard of one market grower who had melons up into October by covering the vines with straw during the nights. As I said before, the selection of a warm, dry soil with the greatest exposure to the sunlight may help in this matter, as will thorough cultivation.

In considering the enemies of the musk melon, mention must be made of the green louse and striped cucumber beetle among the insects, and of the bacterial wilt, leaf mold, and the downy mildew, among the fungi. Of all these, the last is by far the most serious in this State, and together with unfavorable weather conditions, constitutes the chief obstacle to successful melon culture. In fact, these two factors of weather and blight are so intimately bound together that the most unfavorable season for melons as regards the weather is the one in which the blight also does its greatest damage. For seven years the writer has been carying on spraying experiments against the blight. Taken altogether, the results of these experiments have not been very favorable for advocat-

ing spraying as a regular procedure in melon culture. Each year the sprayed vines have remained green longer, but usually the desired results of increased yield and flavor over the unsprayed melons have not been forthcoming. The past season was, however, an exception in this respect, for the sprayed melons both yielded more and had better quality. Perhaps I can best express the spraying question by saying that it will do no harm and may do good, and that it is most desirable in those cases where melon growing is an important part of the farm work and where it will receive the necessary attention. The fungicide used is the ordinary Bordeaux mixture, and the first treatment need not be made before the first of July, or even as late as the fifteenth. In general, treatments every ten days or two weeks, according to the weather, and making four to six altogether, are necessary.

Another possible method of combating the blight is through resistant varieties. The seedsmen are now beginning to advertise such, and the Colorado Experiment Station has been conducting experiments recently with a strain of the Rocky Ford, which is said to show unusual resistance to the leaf mold fungus, a fungus which also does damage in this State. Our experiments with melons the past year were not alone variety tests, but had for their prime motive the discovery of the degrees of resistance of different varieties toward fungous attack. Therefore, we made special effort to secure all varieties for which any merit in this direction was claimed. The results were not altogether promising, for no variety showed marked disease resistance, and such differences as did appear may have been in part accidental, so that another year's test may give a different set of varieties that retain their foliage longest. While we do not think it likely that a perfectly resistant variety with other desirable qualities will be found, still it is quite possible that the tendency to resist attacks may be increased by careful selection and breeding. This and greater stability in quality in such desirable varieties are points we have chiefly in mind in these experiments. We have gone into details regarding this subject of melons because we wish to come more intimately in contact with the

melon growers of the State, and to obtain the name and address of every grower of importance, in order that we may profit from his experience and thereby prove of more help to others.

Peach Yellows and So-Called "Yellows."

Concerning the second topic I intend to discuss, I do so with some hesitation after the comprehensive address we listened to last year from Mr. Waite of the U. S. Department of Agriculture. However, during the past two years I have tried, either personally or by letter, to come in contact with most of the experimenters of experience with yellows in the United States. My views, perhaps, are a little different from those ordinarily held, but a discussion from a different viewpoint often helps to advance our knowledge of a subject rather than to retard it. During the past six years the peach trees of Connecticut have had many difficulties to contend with, and as a result, many have been killed outright, others have sickened and are gradually dying from a variety of troubles. As to the definitely known causes of these troubles, we have first the sudden drop to zero weather on December 9, 1902, which resulted in very severe injury to large numbers of the young trees in the nurseries, some of which were afterward sold, and less severe injury to orchard trees. The following winter of 1903-04 was so severe, as a whole, that orchard trees all over the State were killed, and others severely or slightly injured. Some orchards or parts of orchards were rooted up the following year, while others were severely pruned back, and some of these trees and many of those less severely injured are still in existence. In 1906-07 we had a slight injury to the trees, confined chiefly to killing the blossoms and young twigs. The past winter caused more injury through collar girdle to scattered trees in situations favorable for such trouble. On top of these various winter injuries we had, in 1907, an unusual drought that also severely affected the trees, in my opinion, since it is from that time that the yellows, or so-called "yellows," became most prominent. The dry periods of the past year seem not to have been so severe in their ef-

fects, as they were earlier and later in the season rather than during our hottest weather, as in 1907. Concerning the trees killed outright by winter injury, there seems to have been no difference of opinion. The trees were healthy the previous year, the winter was severe, and the trees were dead the next spring or summer. Obviously winter injury was the cause. But concerning the trees whose wood was more or less severely injured, while the foliage showed no very evident distress the following summer or two, but which has since gone into decline, there seems to be a decided difference of opinion as to whether these subsequent troubles of yellows, "little peach," so-called "yellows," etc., have any relationship at all to the unfavorable weather conditions. Curiously enough, it was not the dead trees so much as the off-color living ones that seemed to worry their owners. In other words, the growers do not seem to fear winter injury, which is certain to occur at irregular intervals to peach trees grown this far out of their normal climate, as they do the supposedly contagious waves of yellows that sweep over orchards not oftener than the winter injuries, and which, in my opinion, are largely after-effects of such.

Without entering into a discussion of the characteristics of yellows, and admitting for the moment that the cases of yellows and so-called "yellows" in this State are all true yellows, let us consider briefly what we know about this nightmare of the northern peach grower.

(A). *By definite experiments* it has been proven so that all agree: 1st, that yellows can be grafted or budded into healthy trees from the buds of diseased trees even when the evidence of yellows does not show on the particular branches from which the buds were taken. 2nd, that yellows cannot be cured in a tree by pruning off the diseased branches. 3rd, that special fertilization of the land cannot effect the cure of diseased trees. 4th, that the pits from yellows trees germinate very poorly and that of the resulting seedlings apparently not all show signs of yellows. I take this last conclusion from recent work of Mr. Phillips in Virginia.

(B). *Through practice* it has been proven more or less satisfactorily: 1st, that nursery inspection does not necessarily

reveal the presence of the disease, so that careful inspection of the young trees for one or two years after they are set out in the orchard is very desirable. 2nd, that the best way to combat yellows in the orchard is the prompt removal of a tree and its destruction as soon as it shows any signs of the disease. When we definitely know the cause of the trouble this precaution may be shown to be unwarranted, but certainly custom and apparent results favor the procedure at present. 3rd, that trees reset in place of the old ones are not more subject to disease than the surrounding ones in the same orchard.

(C). *Neither experimentation nor practice* has proven: 1st, that yellows is positively contagious in the ordinary sense of germ diseases. The nearest we come to proof are the observations made in orchards where the disease, first appearing in single trees, seems to spread to the adjacent ones. 2nd, that it is spread by the pollen. Smith's work, so far as it goes, is against the theory of its spread by this means. 3rd, that it is carried by the tools in pruning or by the leaves, etc. In Waite's report last year he states that he failed to reproduce the disease by injection of juices from diseased trees, but he did succeed in producing it by "budding in pieces of the bark without the bud." 4th, the exact cause of the yellows remains unproven.

Concerning the nature of yellows there seem to be two general views, viz.: 1st, that it is a germ disease, apparently of bacterial origin; and 2nd, that it is a physiological disease, whose active constituent or virus is a chemical substance belonging to the enzymes or the toxins. So far all effort to prove the bacterial character of the disease has been unsuccessful. In a recent talk with Erwin F. Smith, he expressed the belief that the cause of the disease might suddenly be discovered. He apparently was inclined to the bacterial theory, and seemed to think that th presence of the germs on the roots might explain the problem. This idea, however, certainly does not coincide with the apparently successful practice of resetting young trees where diseased ones have been removed. Waite, also, in his address, seemed inclined to the germ the-

ory. Smith, and later, Woods, of the U. S. Bureau of Plant Industry, seem to have been the first to suggest a definite physiological cause for the trouble. Personally I thoroughly believe in the physiological nature of the disease. Briefly expressed, my views at present are as follows: Winter injury is primarily at the bottom of the trouble as a first cause or starting point. Certain winter-injured trees, especially under subsequent unfavorable seasonal conditions, such as drought, may have set up in their tissues unusual chemical activities that result in the formation of deleterious enzymes or toxins. That these enzymes or toxins are spread through the tree by its sap and are capable of producing the disease in healthy trees through bud propagation and possibly through other at present unknown means. Little peach I believe to have a somewhat similar origin. In other words, the winter-injured trees may develop yellows, little peach, some non-infectious trouble, or may entirely recover, depending on the varying conditions that exist with each individual tree. My reasons for these views are as follows: 1st, peach yellows is primarily, if not entirely, a disease of our northern, semi-northern, and southern mountainous regions, where the possibility of winter injury exists. 2nd, the yellows comes in waves and at irregular periods, just as do winter injuries, and there seems to be some sort of connection between these, as illustrated by the present wave, which seems to be following up the recent winter and drought injuries. 3rd, there are certain features in common with the yellows and the chlorosis of variegated cultivated plants, recently studied by Baur of Germany, and with the calico of tobacco, studied by various experimenters, including myself. These troubles are now generally admitted to be physiological diseases produced by enzymes or toxins rather than due to germs. For instance, Baur has shown that certain variegated shrubs (those with mixed green and white or yellowish marked foliage) are infectious, and others non-infectious when budded on the normally green varieties, or vice versa, when a bud from the infectious variegated variety is grafted into the normally green variety the subsequent growth from the green

stock may become variegated. Much of the former mystery surrounding calico of tobacco is now easily explainable through infection in handling the calicoed and then the normal plant. Taken early enough, I can calico every plant in a tobacco field simply by touching the plants after I have got juice on my hands from a calicoed plant.

Finally, let me say a few words concerning what I believe we should do in this State regarding yellows. 1st, I thoroughly believe in patronizing home industries, therefore I advocate as a rule buying trees from our local nurserymen. There are a number of things to be said in favor of the purchase of trees at home, while the one point in favor of the purchase of trees from the South is that such trees come from a region where there is no yellows. If, however, yellows is as contagious as some fear, this advantage would prove of little value, and there is the additional danger of importing new troubles, such as the rosette, which is of similar nature to the yellows. If, however, we loyally patronize home nurseries, we have the right to expect from them the very best trees that they can raise, and free from all suspicion of yellows. Mr. Phillips of Virginia in a recent paper advocates the purchase of peach pits from inspected orchard trees in the South rather than the use of the so-called "natural" pits. He bases this on the facts that the native peaches of the mountainous districts do not furnish sufficient supply for the demand, that some yellows exists there, and that pits from cultivated varieties are as good from a horticultural point of view. While we might derive some benefit from the use of certified pits from inspected trees in the South, and should take advantage of such means if possible, still the great danger, to my mind, lies in the careless or indiscriminate selection of the buds. I have no doubt that our nurserymen use more or less care in this respect, still I think that it would be of decided advantage to them and their patrons if they used only buds from trees that had recently been inspected by our State entomologist and certified to as being free from all suspicion of yellows and with no yellows in surrounding trees. This in-

spection might be made voluntary or obligatory, as would best meet the situation.

2nd, we already have a careful inspection of our nursery stock by the State entomologist, but this does not necessarily reveal the presence of the yellows. In point of fact, comparatively few nursery trees showing yellows are found by nursery inspectors, either here or elsewhere, and there seems to be a growing conviction that careful inspection of the young orchards for the first one or two years after setting out should be made. This is perhaps a thing that the owner himself should perform. At any rate, all suspicious trees, either young or old, should be promptly removed and destroyed.

3rd, in order to advance our knowledge concerning this disease, especially with reference to its spread in the orchard, the efficacy of the prompt removal of trees, and the relation of the disease to weather conditions, I advocate the selection of half a dozen young orchards in the State and their inspection at least three times annually for a series of five to ten years by the horticulturists of the Storrs College and Station and the entomologist and botanist of the New Haven Station, and that definite data along determined lines be kept of each individual tree.

Discussion.

Question: Do they have the yellows or rosette in California?

Dr. Clinton: No.

Mr. Fenn: I understand the gentleman carried the idea that the calico disease of tobacco was carried from plant to plant by the hands, or could be so carried. Is that correct?

Dr. Clinton: I can take a calicoed plant, handling it so as to get a little juice on my hands, then touch another plant, perfectly healthy, and later on that healthy plant will calico, not only the leaves that I touched, if not too old, but also those that were not touched.

Mr. Fenn: Two or three years ago Professor Shamel advocated a notion that calico was derived or sprang from

breaking off the tap root of the plant. That theory was wrong, because we always break off the tap root of the plant.

DR. CLINTON: When you top a plant that has calico, with the same knife that you use on other plants that are healthy you will inoculate the healthy plants. There may be other conditions under which the disease is carried in the field; some hold it is contagious in other ways; we are not sure about it.

MEMBER: I have been a tobacco grower for 30 years, and I never saw a tobacco plant turn calico, as we call it, or gray, after it had been topped.

DR. CLINTON: Perhaps not the original leaves, but the leaves on the suckers will come so. This disease may be communicated by a knife being used on a diseased plant and then in turn using the same knife on a healthy plant. I have cut the top off a diseased plant and then sterilized the knife before I cut the tops of other plants; then I have cut healthy plants immediately following the cutting of a diseased plant with the same knife, alternating these two methods; and when the suckers have grown have noted that the plants that I cut with the knife used upon diseased plants without sterilizing were calicoed, whereas the others were not.

MEMBER: What is the difference between the yellows and little peach?

DR. CLINTON: The chief difference is that with peach yellows you get the premature ripening, and with the little peach you have the late ripening and the small fruit. The characteristics in the foliage are about the same.

MR. PLATT: Frequently we have a large, a very abundant blossoming of an apple orchard and a small yield of fruit following. Can you explain the cause of this or how it can be remedied?

DR. CLINTON: That is a large subject. Years ago out in Illinois I watched an apple orchard through successive years and noted that the trees or branches that bloomed heavily one year did not usually bear the next year. Possibly the bearing of a tree the previous year may have something to do with it.

MR. PLATT: Well, when it blossoms heavily both years?

DR. CLINTON: Did it bear heavily the previous year?

MR. PLATT: Sometimes, not always.

DR. CLINTON: It may be the weather conditions at the time of the carrying of the pollen.

MR. PLATT: Another thing, this year I picked apples from trees ordinarily bearing smooth and clean fruit, which were full of knarly, yellow, sometimes bitter lumps inside, making one out of every four apples unfit for use. Can you tell me the cause of that trouble

DR. CLINTON: Are they ill-shapen apples?

MR. PLATT: Sometimes.

DR. CLINTON: I thing the aphis that Dr. Britton speaks of had something to do with this trouble; apparently that aphis attacks the fruit when very young and injures it badly, sucking the juice from it.

MEMBER: Is there any remedy for little peach?

DR. CLINTON: The same remedy as is used for peach yellows; cut it out. It is supposed to be contagious. There is no other remedy.

MR. FENN: Is it true that bees carry fertilization in the case of melons,—I mean from other vines, as cucumbers, spoiling the fruit?

DR. CLINTON: I think not. I had some cucumbers by the side of melons and they were not injured the first year, anyway. The earlier you can ripen melons the better. The fruit that ripens before the blight fungus infects the vines will be of good quality, but after the fungus kills the vines then the quality of the fruit begins to drop. Anything that kills the vines affects the quality of the fruit.

MR. FENN: Is there any remedy for this fungus on vines?

DR. CLINTON: As I said in my paper, spraying sometimes gives good results and sometimes not. You have got to figure it out for yourself as to whether it will pay. Out of the seven years I have sprayed, I don't think it has paid until this last year. At the time the melons are ripening you need good, hot, dry weather,—however, not too dry and hot.

If you get a cold, wet season, it is almost impossible to get a good crop of melons.

MR. KILLAM: Why is it Red Astrachans are almost a total failure? I have not been able to get more than a bushel in the last three years.

A MEMBER: I have two or three Red Astrachan trees that I don't have any trouble in getting fruit from, if I put on good fertilizer. I get a good color and good fruit if I pick them at the right time, and I got $1.50 a bushel this year for them.

MR. PHELPS: Do you know of anyone who is growing melons under cloth with success?

DR. CLINTON: No; they did some work at the Massachusetts experiment station along that line, but the experiments did not prove of much practical value.

MEMBER: Do they blight just as badly?

DR. CLINTON: I think so.

MR. HIXON, of Worcester: In regard to raising melons. George McClellan, gardener for the Whitneys, has been interested in raising the Montreal melons for several years, but had no success until he got some seed from Montreal, and for the last three years he has raised larger and better melons than any I have ever seen from Montreal. Last year he raised two melons that weighed 29 and 27 pounds, respectively. When cut, the quality was said to be very fine. He planted his seeds out-of-doors with a frame of four little pieces of board about the hill, covered with a 3 x 3 sash for a little while, until they became well established. He is not troubled with blight or fungous growth.

In regard to the gentleman's question about Red Astrachan apples. I have had experience in growing Sweet Bough, McIntosh Red, Northern Spy, and almost every apple that grows, and for some reason or other, some years, under certain climatic conditions, they will almost fail in their crop, and the next year you will get a fine crop of splendid fruit from the same trees.

MR. MOSS, of Massachusetts: In regard to apples: Is it true that the fellows in the valleys must give way to those

on the hillsides in the growing of apples, on account of certain climatic conditions?

MR. WOOD, of Massachusetts: I have raised apples on the banks of the Connecticut and have carried off prizes at a good many county fairs. My apples are larger than those raised on the hills; this year they were over-ripe because we had so much dry weather.

At this point Vice-President Rogers took the chair and introduced as the next speaker Professor H. A. Surface, State Zoölogist of Pennsylvania, who spoke as follows on the important subject of "Spraying":

Recent Advancement in Successful Spraying, with Special Reference to the Control of the San Jose Scale.

By PROF. H. A. SURFACE, Harrisburg, Penn.

The day has come not only for the scientist to become practical and reach forth a strong right hand to meet the grower on his own grounds, but the time is also at hand when the tiller of the soil, be he agriculturist, horticulturist or specialist in any line, must be scientific and technical in the knowledge of his subject. He must keep abreast of the times by knowing what is being done in his own State, as well as other States, along the line of his profession. To know this he reads Bulletins and Journals, but he demands more than mere empirical instruction. Like the man from Missouri, "*He needs to be shown.*" For this reason, now, as never before, teachers of all kinds are adopting the system of demonstration instruction, or giving instruction by exhibition, showing the details of practical methods.

In response to the call for a more definite and tangible form of help than the publication of Bulletins, we established in the State of Pennsylvania, thirty Demonstration Orchards, or an average of nearly one for two Counties. Announcements were made by the press throughout the State, by Bulletins and

otherwise, concerning the dates when we would do pruning and spraying in those orchards. The public was invited and attended. On the appointed days the demonstrators in charge of the orchards were present, pruning trees according to approved and proper methods, and speaking of the principles of pruning as illustrated by the work done, talking and working at the same time, and also doing the spraying, making in the presence of the visitors the lime-sulphur wash,—best known material to control the San José Scale, which was the chief pest for which these demonstrations were given. However, the Codling Moth is an important enemy of the pome fruits, or apples, pears and quinces, and to show how this was to be controlled we gave subsequent demonstrations in the same orchards, just after the falling of the blossoms, spraying with two pounds of arsenate of lead in the 3-4 formula of Bordeaux mixture. Visitors were again present to see the work done, listening to the remarks and directions regarding the Codling Moth spraying, asked questions, and went home and treated their own trees likewise.

In the fall of the year we again met in the Demonstration Orchards and studied results. In most orchards it was to be seen that that portion which we had taken for demonstration purposes had considerable more fruit than the other portions not so treated, and at the same time was less infested by Scale. The remarkable results of the Codling Moth spraying were that in some orchards 98 per cent. of the apples were found free from infestation by this pest, while on trees not treated the reverse was to be found true, or almost every fruit wormy. This was conspicuously to be observed in many of the orchards that were carefully examined by hundreds of persons visiting them. It was plainly to be seen that the Codling Moth spray had not only destroyed the pests making the wormy fruit, but had also kept the fruit on the trees longer and had resulted in a greater quantity of fruit that was perfect and sound. Thus, this spraying alone had fully justified all the expense and effort of the Demonstration Orchards.

However, as the San José Scale is at present the arch foe of the fruit grower in Pennsylvania, as in almost every State,

it was against this pest that the demonstrations chiefly were directed. The home-boiled lime-sulphur wash was used in most instances, but the commercial or concentrated lime-sulphur was applied in a few cases. In all the orchards it was recognized by the visitors themselves that the pests had been controlled. In many instances trees that were badly infested the year before were, at the fall examination, found to be practically free from Scale. At the orchards of the Dauphin County Home, the Lancaster County Home and Orphanage, and others, the fruit was practically unfit for use the previous year, but was found this year to be better than it had been for some time. The officers in charge did not hesitate to attribute this to the methods that we used, and thus these orchards became practical object lessons, standing as irrefutable arguments against any remarks that might be made unfavorable to spraying.

The chief purposes of these demonstrations were to illustrate the application of certain principles, which are now recognized as the basis of successful work of this kind. Among these are the following:

The orchardist must have a sufficient knowledge of the principles of application of fungicides and insecticides to know that the former are used to prevent the appearance of fungous diseases, while the latter are used as remedies for insect pests. The word "preventive" alone indicates that it is to be used before the trouble comes. The chief fungicide is the Bordeaux mixture, made by the 3-4 or the 4-4 formula for apples, and the 2-4 formula for peach and plum, although there should really be no need of spraying peach and plum with this material. The commercial lime-sulphur wash has made its appearance on the market in a concentrated form, and is recommended by us for use in destroying the San José Scale during the winter or dormant period of the tree, when not too greatly dilute (one to eight), but it is also recommended by manufacturers and agents, with considerable dilution, such as one to thirty or forty, to act as a fungicide and take the place of the Bordeaux mixture. I have tested it on potatoes for Potato Blight, but as the Blight did not come in

the field where the tests were made, nothing can be said about the results at present. However, we are not yet ready to say that dilute lime-sulphur wash will take the place of the Bordeaux mixture. On extensive operations, it would be better to stay by that which has proven good until a cheaper or better material is found. It must be emphasized that Bordeaux mixture and other *fungicides are not for the destruction of insects, but for the prevention of plant diseases*, and, therefore, must be *applied as* a means of *insurance before* the diseases come.

The application of *insecticides* differs chiefly from that of fungicides in the fact that the former must be applied when the *insects are present in order to kill them*, either by acting as internal poisons, as in the case of poisoning chewing insects, like Potato Beetles, or killing sucking insects by direct contact, as in destroying Scale insects, plant lice and other sucking insects. Perhaps, the only exception we make or now recall to the statement that insecticides as remedies are not applied before the insects come, is in spraying with an arsenical poison for the Codling Moth. This is done just after the blossoms fall, whether the insects be seen or not, because it is known that this is the time when they will commence to make their appearance. For this particular pest, the past year has demonstrated the success of arsenate of lead, which has been extensively used, two pounds to fifty gallons of water or Bordeaux, but which will, no doubt, prove efficient if used only half as strong.

A few elementary principles, such as some mentioned above, and the following, are to be kept in mind, even in considering advanced methods. Among the elements is the subject of differences in the kinds of insecticides according to the nature of the feeding of the insect. Those which are suctorial must be killed by the contact insecticides, such as the oils, soaps, decoctions, powders, caustic solutions or gas, while those which feed by chewing the plant tissue, and are consequently called "biting insects," such as the larvae or caterpillars, potato beetles, and in fact all insects that feed externally on any part of the plant by eating it away, are to be killed by applications of ar-

senites, which are properly called internal poisons, because they destroy the pests by being taken internally. Among these, Paris Green and arsenate of lead are the best, with the latter being in greater favor owing to its adhesiveness and freedom of injury to foliage. It can be safely used not only on such fruits as apples and pears, but also on smooth hard fruits, like grapes and plums, for the Grape-berry Moth and Plum Curculio, and also even upon cabbage for the Cabbage Worm, and on tobacco for the Tobacco Worms. These elements are mentioned to show that while they are fundamental and have been known for years by our practical horticulturists, there are a few progressive steps, such as the recently demonstrated use of the commercial lime-sulphur washes and arsenate of lead, which enter into the subject and mark steps of recent progress.

It becomes necessary for the successful plant grower not only to have a knowledge of the principles of the application of fungicides and insecticides and the advancement in each of these, but he must also know just what to spray, when to spray, how to spray, and with what to spray. Practically each kind of insect and each kind of disease germ is to be treated distinctly in some regard. There is no possibility of a general spray for everything. The man who writes to a specialist, as some yet do, saying, "I am going to spray my trees. With what shall I spray them?" gives as little diagnosis for reply and shows as little knowledge of the subject as would a person in writing to a veterinarian by saying, "I am going to doctor my live stock. With what shall I treat them?" The specialist answering the inquiry should know the kind and age or size of the trees to be sprayed, the kinds of pests infesting them, and the kind of apparatus which the owner will have at hand. He will then prescribe according to the conditions.

The horticulturist now recognizes that insects have their different life histories or life cycles. There are fully as many insects present on the earth and alive now (during the winter) as there were during their more active season of last summer, but the difference is that they are at present dormant or quiet. The successful horticulturist must know

where his worst enemies find their winter concealment and must know their life histories or development, in order to know just where to attack them. For example, for Oyster-shell Scale there is no time for spraying like the early part of May just after the eggs hatch, and with the Codling Moth, there is no time when they are so vulnerable nor as easily attacked and destroyed as just after the blossoms fall, repeating this arsenical spray again in about ten days.

Now the horticulturist must learn this point, perhaps new to him, that plant diseases likewise have their life cycles and life histories, and there are certain places in which they pass the winter, and different forms in which they appear upon the plants. He must know that if he should destroy them in one place, they may yet continue in another. It is necessary in successful horticulture and agriculture to know the different places and methods by which these disease germs can exist. For example, the farmer can treat his potatoes successfully for Scab by soaking them in a solution of Formalin, composed of one-half pint or a pint of this liquid in fifteen gallons of water, and he will kill the Scab germs on the potatoes without hurting them for growing. If, now, he should plant these treated seed potatoes in clean ground, they would be free from Scab, but if he should plant them in the ground where the Scab previously existed, they would again become infected. Likewise, if he should plant untreated scabby seed in clean (uninfested) ground, the potatoes taken from that soil would be Scabby. Thus, it becomes necessary in preventing the recurrence of this particular disease not only to treat the seed crop to destroy the germs, but to provide against planting them where these germs already exist in the soil. The same is true of certain diseases of the fruit that may take two or more forms, such as the Bitter Rot of the apple, presenting canker spots in the bark, as well as rotting the fruit, or Ripe Rot of peach in the form of brown spots on the twigs, or of brown decay of ripening peaches, plums and cherries.

What to Spray. In considering what to spray, the recommendation can be established that the horticulturist should

spray all trees or shrubs that are infested with pests, or in the case of a plant disease, spray those that are liable to become diseased within a certain period. However, it is not necessary to spray for insects that are not present or not sure to come, and not desirable for the orchardist to go to the expense and trouble of spraying to prevent such pests as the San José Scale, if he doesn't have them on his trees. There is no profit nor advantage gained by spraying apple and pear trees during the dormant season, if no scale insects be present, but it would be well to spray peach and plum trees with the lime-sulphur wash, the same as for San José Scale, whether this pest is present or not, for the reason that the lime-sulphur wash is a preventive of the Peach Leaf Curl, and destroys certain other disease germs and insects, as well as the Scale. For San José Scale even slightly infested trees should be sprayed, and all trees near one that is infested should receive treatment. It will not do to pick out a badly infested tree here and there in an orchard and treat it, and let the others remain. Ornamental shrubbery of certain kinds, such as Japan Quince, Purple Plum, and some others of the botanical family Rosaceæ should be sprayed, as well as should the Osage Orange hedge and others liable to serious injury by San José Scale, provided, of course, that this pest is present.

When to Spray. The time to spray depends upon the nature of the pest for which the application is to be made. Fundamentally, we spray with a fungicide just before the time when the fungous diseases would appear, and find that it is more effective than to wait until after the evidences of the diseases are to be seen. With insecticides we spray as soon as the pests are present, but (with the exception of the Codling Moth) not before. For the San José Scale we must spray when the trees are dormant, as no material will kill the Scale without injuring the leaves, buds or fruit if applied when in foliage. However, we have found that early winter spraying is as good as early spring spraying for this pest, and the work can well be done in the late fall, or at any time during the winter, when the ground is hard and the weather

favorable. For the Scale, spray at any time when the trees are dormant. Also, be sure and spray when the wind is in the right direction. That is to say, spray one side of the orchard when there is a gentle breeze that will carry the spray liquid well through the tree tops, and when the wind changes and blows in the opposite direction, spray the other side of the tree, being sure to do a thorough job. Thoroughness is essential, or success can not be obtained.

How to Spray. The horticulturist must remember that spraying is not sprinkling. In general, he must apply the material in a fine mist-like steam or fog, which is a genuine spray, and *not in a jet or drops.* With some materials, particularly the oils, if enough material is used to drench the bark, there is great danger of injury. However, with the lime-sulphur wash no such danger exists, as it can not be used strong enough nor in such quantity as to hurt any kind of tree, bush or shrub. The trees should be thoroughly coated by a film of the spray mixture, leaving no spot uncovered.

With What to Spray. This becomes important, as it is to be varied in kind and proportion according to the kind of tree and kind of insect or disease for which the spraying is to be done, as well as the condition of plant as to foliage. Of course, the standard fungicide is the Bordeaux mixture. It is not proven that the commercial lime-sulphur washes or other fungicides fully take its place. However, for Peach Rot it has been demonstrated that the self-boiled lime-sulphur wash, five pounds of sulphur added to five pounds of quick-lime in enough water to slake it, and heated well in a barrel, strained and diluted to fifty gallons, makes the best spray for Ripe Rot of peach, plum and cherry. This is better for this particular purpose than the dilute commercial or home-boiled concentrated lime-sulphur, as there is considerable free sulphur with it, which also acts as a germicide, and only the lower sulphur compounds are made by this process, while the higher compounds, made by prolonged boiling, and which may be the ones injurious to leaf and fruit, are avoided.

Recent developments have proven that the material to use for chewing insects, particularly the Codling Moth, is arsenate of lead in preference to Paris Green, although the latter will give good results. In spraying for the scale insects, particularly the San José Scale, it has now been demonstrated that the lime-sulphur wash is the best and cheapest insecticide that can be used, and it is also a good fungicide. One can either make his own, according to the formula of seventeen pounds of sulphur and twenty-two pounds of lime, boiled one hour, strained and diluted to fifty gallons,—or he can buy the commercial concentrated material, diluting it one to eight, and spraying it on his trees with good results. However, in using carbonic acid gas as the power for pressure, it is necessary to dilute it with hot water, as less gas is absorbed by the hot liquid than by the cold, and consequently the gas has less chemical effect upon the preparation when heated. There have been some remarkable examples in Pennsylvania of orchards saved by the lime-sulphur wash. Mr. C. C. Gelwicks, a banker of St. Thomas, had an apple orchard so badly infested with San José Scale that he was destroying his trees, and we gave a demonstration there in the fall, showing how to make and apply the lime-sulphur wash. He sprayed his trees twice with this material that winter. Mr. Kieffer, a fruit buyer in Chambersburg, told me that although the previous summer the fruit had been so badly marked with San José Scale that it was worthless and he could not use it, he went through the same orchard last summer trying in vain to find a single scale-marked apple, for which Mr. Gelwicks had offered him five dollars, if it could be found. Another illustration worthy of note is that of two fruit growers, each with about one hundred and forty acres of trees, with orchards adjoining. One used an oil preparation, viz.: "Target Brand," and failed to control the Scale on his trees, but injured them considerably, and I am told that he sold only ten carloads of peaches last summer, while his neighbor, with an orchard of the same age and number of trees, used the lime-sulphur wash, boiled with a steam engine and applied with six compressed air sprayers, and kept the Scale in per-

fect control on his premises, and sold from his orchard sixty thousand dollars worth of peaches last summer. From one hundred and forty acres of average quality of Pennsylvania soil was thus obtained a greater cash value in fruit products than the entire annual salary of the President of the United States! This shows the result of the intelligent use of lime-sulphur wash, but that result could be obtained only by the personal application of the efforts of the man behind the nozzle. The man growing this large crop was Mr. D. M. Wertz, of Waynesboro, Pa. I was in his orchard and know that his crop amounted to one hundred and forty carloads. In one day thirteen carloads were picked, packed and shipped from that orchard. The Scale had been there, perhaps as long as in any orchard in the county, but the owner had relied upon us very frequently for counsel, and had followed our advice and saved his trees and his crop as a result.

The oil sprays have not given universal satisfaction. There are no commercial oils that are at all times entirely free from danger when applied to fruit trees, particularly on peach and plum. I have just received a report from two of my assistants telling of injury and destruction in an orchard of twenty-three thousand trees, in Franklin County, by the use of an oil spray. The owner of the orchard is S. B. Rinehart, of Mercersburg, Pa. He will confirm the statement that he has not only lost his crop for the past two years, but is now losing his trees. The material used in this case as a spray was the "Target Brand," and there are several reports of injury from its use, but other oils have not been free from justifiable censure. For example, an orchard belonging to R. S. Clarke, of Dillsburg, was bady injured by "Scalecide," looking as though scorched with fire, and hundreds of persons recently gathered there at a public demonstration recognized this injury at once. At West Fayetteville is another similar case, and several reports have come to us concerning unsatisfactory use of "Scalecide," either in not killing the Scale or in injuring the trees, although this material must be regarded as one of the best of the so-called soluble oils. It appears that these oils effect their injury by entering the lenticals, or

bark pits, and enlarging and deepening them. While it is true that some persons have successfully used the oils in the control of the Scale, it is likewise true that more success has come from the lime-sulphur, which does not have the element of occasional danger, due to lack of proper preparation. We have specific examples to give to substantiate the statements here made. I feel it but justice to the fruit growers in speaking of results to call their attention to these possibilities in reference to the various insecticides.

As to apparatus, it becomes important for the fruit growers to get the best. The kind to buy depends upon the number and size of the trees you have to treat. A large grower of fruit in the future will, no doubt, use either compressed air or a small gasolene engine. However, for orchards of fair to large size, a lever pump with an upright lever and a cross bar for the hands will be found to be one of the most economical and satisfactory pumps, but the regular barrel pump will prove the salvation of our average farm orchards. The hose should be long enough to let the operator swing well around the tree. One section should be twenty-five feet and the other from twenty-five to forty. On each section or lead there should be an extension rod. We have found that the gas pipe extension rod is satisfactory. Plain three-eighth inch gas pipe is cut with threads to fit to the hose and supplied with nozzle attachments for nozzles. The rod can be three feet, six feet, or ten feet in length, or better, jointed, so that it can be taken apart as desired. The bamboo extension rod is lined with aluminum or brass, and, of course, is to be recommended, although more expensive than the gas pipe. It has the advantage of offering a larger surface for the hands to grip without becoming heated with hot liquids or cool with cold liquids, and thus becomes more agreeable to the hands of the operator, but it has the disadvantage of the lining tube turning around with the bamboo casing in such a way that it can not always be used with satisfaction.

At the end of the rod one should use a drip tin, which is a disk of tin or other metal, about three inches in diameter,

soldered tightly around the rod, just below the nozzles, for the purpose of turning the drippings of the liquid off and not permitting them to run down upon the hands of the operator.

For gloves, we use cheap leather gloves dropped into melted tallow, and have no trouble with the lime-sulphur wash or other liquids penetrating them.

An important attachment on the end of the spray rod is the eighth-turn, which can be provided by giving the outer end of the rod itself a short turn one-eighth way around, or, better, using the attachment between the nozzle-holder and the rod. This eighth-turn is for sale by supply dealers, costing only twenty-five cents, and is one of the best and most important features of a modern spraying outfit. It turns the nozzles just enough to permit the operator to stand in his tracks and spray three sides of a tree by merely turning the rod over in his hands. Without the turn at the end of the spray rod, he must walk around the tree to reach all sides, and then can not reach the upper sides of the branches. With this eighth-turn he can do a thorough job, reaching the upper sides of the branches, and reaching the sides of the trees, which must be sprayed to be successful.

In this day of busy work and need of saving time, a man can not afford to spray with only one nozzle, and for that reason two good, large nozzles should be the least number to use on any extension rod. These should be attached by means of a "U" or "Y." For spraying dormant trees I prefer the former, as the spray volume is spread over a less area, while the "Y" is to be recommended for spraying trees in foliage. However, for the latter work I prefer a larger cluster, with at least three nozzles, spread even wider. Two good nozzles are the "Friend" and "Mistry Junior." These will spray the ordinary lime-sulphur, as I have demonstrated, for days, without clogging nozzles, and two of these will give fully as much volume or spray as three of the old style "Vermorel" nozzles. The "Improved Mistry Junior" has a swivel arrangement and a thumb screw attachment at one side, so that it can be turned to one side and fastened in place there, and this takes the place of the important eighth-turn, just

mentioned. It should be added that two shut-offs or stop cocks are needed, one at the pump at the beginning of the hose, and the other at the base of the extension rod. This is so that the liquid can be shut off immediately either by the operator at the rod or the man at the pump. This saves both time and material.

The strainer is one of the most important features in spraying with lime-sulphur wash. We have devised a conical strainer, which is here exhibited. There is no patent on this, and any one can have it made for himself. It strains perfectly all liquids containing sediment. Thirty meshes to the inch, of brass wire cloth, should be used, made in the form of a cone set upright in a fifteen-inch funnel. Before the brass wire cone is soldered in place, a cone of coarse galvanized wire four meshes to the inch should be soldered into the funnel as a support for the brass wire cloth strainer, and this can then be slipped over it and soldered firmly.

On our recent demonstration train run three and one-half weeks over the Cumberland Valley Railroad, our fruit growers were much pleased by the practical features of the apparatus here illustrated. The lime-sulphur wash was made and applied to the trees with this apparatus. The growers were encouraged, and those who have not been saving their trees are now taking heart to push forward and do so. Other demonstration trains are to be started to show the use of the apparatus here mentioned. There is no great difficulty in spraying if one only knows how, and what material to use. Much has been said against certain spray liquids, such as lime-sulphur wash, because they are supposed to be difficult to prepare and apply. The man who has trouble with them is one who does not know how to handle them.

Orchardists should take courage, for the day of gloom, particularly in regard to the San José Scale, has now well passed, men are saving their trees and their crops and producing first-class fruits, notwithstanding its presence. Let each grower learn what to do, when to do it, and how, and what material and apparatus to use, and procure that which he finds best adapted to his needs. If he is using any kind

of commercial insecticide and is sure that he has obtained good results, there is no reason why he should reject this for another, if he be satisfied with the results and expense.

This address aroused considerable discussion, not all present agreeing with the statements of the speaker. Following the address Professor Surface was sharply questioned.

Discussion.

Prof. Craig: I think we have left the matter of the different oil sprays in a bad way. These sprays have been condemned in a wholesale manner. We ought to know what sprays have been referred to, how and to what they have been applied and just the conditions under which the results spoken of have come about. I believe it due to ourselves and the spray manufacturers to know more about it and to get a little more definite information on these points. In my own case I have been using one of the oil sprays on apples, pears, plums and peaches, and am certain no such injurious effects have resulted as have been reported this afternoon. I am not advocating the oil sprays, but I object to wholesale condemnation. On the other hand, if oil sprays are injurious to apple or peach trees we ought to know it.

Prof. Surface: As I intimated in my remarks, the oil spray that has proven the most unsatisfactory is the "Target Brand Scale Destroyer."

Prof. Craig, to Prof. Surface: Do you, then, confine your remarks to the Target brand?

Prof. Surface: No, sir.

Prof. Craig: Then you are making these remarks concerning oil sprays with general significance?

Prof. Surface: No sir, I am going to make a modification according to the brand used. I did not finish my reply to your remark. If a person has had a barrel of any kind of oil spray that has given him satisfactory results and he wishes to continue its use, there is no reason why he should not do so. Take the home-made oil: We have had a won-

derfully varied condition of results from it; some have been good, others have been poor; it has not been at all uniform in its results.

PROF. CRAIG: You are now referring to home-made miscible oil. Has it been uniform in its manufacture?

PROF. SURFACE: That may have been the difficulty, and for that very reason I do not feel we can recommend it to our people, although they may not always have unsatisfactory results, either for one cause or another, there is always a liability of failure. One of the best commercial oils on the market is "Scalecide," but at the same time I can tell you where there are three orchards, which either myself or my men have examined, that have been injured by the use of oil spray, and yet, as I say, a person getting good results may go on using it; but let him know that there is a possibility of a barrel occasionally producing injury to the tree. Let him know that there is apt to be on the top of the spray mixture in the tank a thin liquid oil that is much more likely to penetrate the bark than is the regular oil. On peaches and plums I do not believe that oils of any kind can safely be used; and yet I believe they can be used, with proper discretion, unless there is some unusual condition found, in the case of pears and possibly apples.

From the unsatisfactory results obtained in so many cases where the home-made oils have been used, I do not think we can recommend them.

My remarks must not be applied equally to all oils. I think I am right in giving a word of caution against the use of oil on peach and plum trees, while it may be perfectly safe on apples and pears. The lime and sulphur wash is a fungicide as well as a scale destroyer. One spraying with it at this time of year will prevent peach leaf curl.

MR. PRATT (of the B. G. Pratt Co., New York City): I think, in view of what has been said in regard to "Scalecide," that I ought to say a word at this point. I don't believe it is possible—and I say so with all candor and freedom and after a great many years of experience—to injure in any way a tree

with "Scalecide" *if the latter mixes with water;* and if it does mix with water, that determines conclusively that it is safe. In fact, our directions say, whenever the contents of a package do not mix with water that the same may be returned to the manufacturer and the package will be replaced without expense to the buyer.

PROF. SURFACE: It is probably true that the failure of the oil to mix with water is a sign that it is unsafe to use, but if it does injure a tree—in any event it ought to be watched by the user.

A MEMBER: Have you ever known of any case where trees were damaged by use of the Target brand, or any other oil, when it mixed with water?

PROF. SURFACE: I did not see it applied; I simply saw the results.

A MEMBER: My experience has been that there is great danger when the oils do not mix with water, but when they do mix there is absolutely no danger.

The next feature of the afternoon's program was an illustrated address on "Apple Growing in the Pacific Northwest," by Professor John Craig, of Ithaca, N. Y.

Professor Craig's brilliant description of his recent trip to the Pacific Coast, his observations of the splendid fruit-growing sections, and especially his account of the great apple show at Spokane, were intensely interesting to the audience. The many fine lantern slides that were shown added much to this instructive lecture, an abstract of which is given herewith.

PROF. JOHN CRAIG.
ITHACA, N. Y.

MR. W. W. FARNSWORTH.
WATERVILLE, OHIO.

MR. HAL. B. FULLERTON.
HUNTINGTON, L. I.

WELL-KNOWN HORTICULTURISTS WHO WERE SPEAKERS AT THE SOCIETY'S ANNUAL MEETING, 1909

"Observations on Apple Growing in the Pacific Northwest."

By Prof. John Craig, Ithaca, N. Y., Professor of Horticulture, New York State College of Agriculture.

I congratulate myself on having the privilege of again meeting with the Connecticut Pomological Society. It is a privilege, gentlemen, to come before such a large and such an interested audience as this. I feel that the person who comes on this platform cannot afford to spend your time on presenting merely elementary subjects. I realize that he is addressing an advanced class in pomology. I feel for you today, however, because you are having a pretty heavy professorial regimen; I am, of course, not referring to the speakers who preceded me, but have special reference to the present occupant of the platform. I think this meeting is, and should be, primarily, a conference of fruit growers themselves. We have passed the elementary stage,—the beginning class,—when orchardists desire those elementary principles necessary a few years ago. The day is past, also, when there are "professors of all knowledge." The day has arrived when each investigator has got to look out for his own education and progress in order to keep ahead of the practical fruit grower, because the practical man in the orchard is close at his heels, and sometimes a little ahead. In my own State, when I want to get the latest thing in successful orchard practice, I go where there is a good example of this type of orcharding, and acquire the information; then, perhaps, steal back to my orchard—like my friend Sears—and put the things I have learned into practice.

I had a good deal of confidence in Professor Sears before he started this orchard scheme of his at Amherst—I had considerable faith in his discernment—but when he "broke" into that orchard "stunt" up there only about a mile from his classroom and students,—I have come to the conclusion that he is a man of mighty poor judgment. I had more sense than that,

for while I am doing some little things in orcharding myself, I am conducting my operations about 2,000 miles away from the college. (Laughter).

(PROF. SEARS: I am not so much afraid of my methods as you are.)

(PROF. CRAIG: That is not only a case of mistaken judgment, but it is aggravated by inability to see the error of his ways.)

I think it is a mighty good thing for professors to take up orchard problems and try to work them out once in a while. It gives them a first-hand knowledge of the practical man's difficulties, and it also gives them a first-hand knowledge of what things cost, which is a pretty good sort of thing. When we have to provide the money for the preparing of the land and the laying out of the orchard, the planting of the trees and that sort of thing, we are compelled to speak a little more thoughtfully on such subjects. When a man "falls down" in his every-day task we have a little more feeling for him.

Like my personal fruit farming,—my subject is just about as far away, so I am altogether on safe ground, unless I run up against some man from Oregon or Washington. I have been asked to tell you something about fruit growing and fruit handling in the Pacific Northwest.

In the progress of all industries in recent times we know that distance and time have been practically annihilated; we know that the fruits of the Pacific coast are alongside ours so far as competition is concerned, and that the man who grows fine apples in Washington and Oregon is our competitor at home and abroad. So it is up to us, if these men are making great successes, to see how they are attaining these successes and, if possible, to get ahead of them.

I think it was twenty years ago last fall that I made my first visit to Washington and Oregon, and spent some months in prospecting over these sage brush stretches in upland and inland valleys. The last time I was there was less than two months ago, at the time of the great apple show at Spokane. This was the greatest event in the history of pomology in this

country. A show in which *more* apples and *handsomer* apples were displayed than at any other exhibition I know of; a show in which not only the fruit growers were concerned, but the citizens of the place where the show was held were intimately interested. Right here is one of our difficulties in the East,—the townspeople where our meetings are held are never much interested. In the city of Spokane on this occasion the streets, the stores, and even the little shops, were decorated with apples, to celebrate the event. As you walked down the streets and around the corners and saw those magnificent apples in all the windows, you thought you were at the show itself, because the whole city was in a gala attire of apples. That suggests the spirit of the people in the great Northwest.

There are a good many striking features about the Northwest country. One of the things that appeals to you most is the great size of the country. Oregon is about twice as large as the State of New York; Washington is larger than all of New England, and that other country which we are soon going to hear from—British Columbia—lying to the north of these two States, is eight times as large as the State of New York. A tremendous expanse of outdoors when you come to think of it in relative terms!

We can divide the region roughly into two sections, and the division line is a natural one running north and south, the great Cascade Range, one of the backbones of the continent.

On the coast side of that range we find distinct climatic conditions and products peculiar to the region. On the east side we have a different climate and products governed by those different conditions. On the coast side of the range we have the moist winds from the Pacific sweeping easterly; as they pass over the Cascades they are robbed of their moisture, precipitation occurs and the rainfall on the Pacific side is heavy. You have, then, a humid atmosphere and moist soil conditions. On the east side of the Cascades very different conditions prevail. There we have aridity, and irrigation is necessary. Fruit growing in the oldest part of that country

is only an infant compared with fruit growing here in the east. We are told that the first peaches grown on the coast were sold in the (then) village of Portland in 1853 at five for a quarter. However, that is not the price of peaches there now. Prunes at that time at 15 and 20 cents a pound, now they are sold for three to five cents a pound, and a grower is fortunate if he can get five cents a pound. Prunes, peaches, walnuts and apricots marked the introduction of fruit growing into the Pacific coast side of the valley.

The development of the country on the east side of the Cascades is of later origin. The two regions are radically different in their climatic make-up. It rains a good deal on the west side; it is very dry on the east side. The residents of the two sections joke each other, the men on the coast calling the inland people Salamanders; the inlanders calling the people on the coast Webfooters. The inland region is divided into two important sections, based largely on elevation. Along the rivers running through the country are low, warm valleys, giving almost sub-tropical conditions. On those lower valleys are cultivated tender fruits like the European grape —the black and white varieties, the same type as that which comes from Spain packed in cork; prune, peach and apricot groves are numerous.

Then there are the great inland uplands, the plateaus, which lie between the rivers. These range from a few hundred to a few thousand feet above the sea level. That is where cereals were first grown. This is all changed now, fruits have been introduced and fruit cultivation is established on a large scale where the growing of fruit was not dreamed of a couple of decades ago. I believe it is from these sections —the inland uplands—that we are going to hear from most emphatically in the years to come. Given clear summer, sunny days, coupled with cool nights; given water and the rich volcanic ash soil, which exists all through, they are enabled to grow beautiful fruit. The climate and soil make beautiful fruit, but right there I wish to make a distinction. You can have a fine looking thing which is not quite so good on the

inside as another thing is which is not as pretty. There is a great difference between Western apples and the same variety of apples grown in the East. In short, the Western apples have the appearance, but our apples have the quality. Yes, we have good quality; then let us bank on it. Let us swear by quality, let us shout quality, let us keep the factor, quality, constantly to the front. They have handsome appearance; they are keeping that before the public constantly; that is their main reliance. They meet and beat us in our markets. In order to compete with them in our Eastern markets we must sell on the basis of high quality. And we can win.

The land in the inland is practically clear of tree growth. There is nothing but sage brush growing out of the sand. They clear and water the land and it is immediately valuable. Unimproved land without water can be bought for from $50.00 to $75.00 an acre to-day. How much can you buy good apple land for on our hillsides in this country? How much will good apple land cost us here, where we can grow adapted varieties of the highest quality?

If you go over the Cascades into the timber region you can buy cut-over land at less than on the east side, but it will cost you from $125 to $175 an acre to clear it for orchard purposes.

The inland region has three noted apple valleys: The Yakima Valley, Wenatchee Valley and the Chelan Valley. Many other regions are rapidly developing.

These three valleys have recently developed great apple-growing regions, which (aside from Hood River Valley) are supplying us the bulk of these handsome apples that come into our Eastern markets.

Orchard Management.

A word or two about the peculiarities of these two regions, the coast and the inland, in reference to orchard practices. The coast men have lots of moisture and a good deal of cool weather, and so they need open-headed trees; they wish to let in the sunlight to color their fruit. The men on the inland have an abundance of sunlight and are obliged to

protect their fruit trees by keeping the trees close headed. The men of the coast head their trees high in order to work underneath them; the inland fruit grower needs a low-headed tree because the stem and branches must be protected from sun scald; he needs to protect the trunk of the tree. The coast fruit grower prunes in the summer to check growth, while the man in the interior may prune in the winter.

In the Matter of Spraying.

On the coast they have conditions favorable to the growth of fungi; they have moisture, and fungous troubles develop quickly. In the inland they are not troubled with fungous enemies, but are greatly bothered with Codling Moth. The men of the inland uplands must fight the Codling Moth and must fight other apple insects, while the men of the coast fight fungous diseases. One class works with his fungicides and the other with his insecticides.

After noting the spray methods of these westerners I am free to say that in the East we don't know much about spraying, from the standpoint of thoroughness.

They realize that their work must be done so that every apple will be perfect, so there shall be no number twos or threes. In orchards where spraying was carried on thoroughly, six or seven applications of insecticides are sometimes made in one season, and it would have been very difficult to find an apple that was injured by the Codling Moth. Remember that these growers are 2,000 miles from the great Eastern markets and 5,000 miles from Europe. It costs a cent a pound to carry fruit from the West to the East, so that they can't afford to grow anything they cannot ship. They have got to grow only first-class fruit. Spraying, pruning and other practices are absolutely essential to the raising of perfect apples. In no other way can they maintain themselves.

Markets.

They have three markets, and they are working them all "to a finish." You men here in Connecticut know one of them they are working to a finish.

1st. Their local Western market. This does not amount to very much. The mining towns and the inland cities consume a certain amount, but the population is, of course, not so dense as here in the East, consequently the consumption is light.

2nd. The Orient is a market which they are looking forward to. After all, fruit must be introduced into the Oriental markets through the medium of people who are accustomed to eating Western fruit, the apple in particular. The Orientals are not accustomed to eating fruit and are not educated along that line. I do not look, therefore, for the development of an extensive market in the Orient for our Western apples in the near future.

When it does come, the Pacific Northwest growers will be on the ground floor.

3rd. Then there are the Eastern and the European markets. It costs Washington shippers practically a cent a pound to any point east of the Mississippi River. Notwithstanding this, they are taking the cream off all our markets, for they send nothing but the highest grade of apples, handsome, uniform and reliable. We must look to our laurels.

The Apple Show.

One of the things in connection with the National Apple Show at Spokane was an interesting little incident with an important moral, and I speak of it in passing. Somebody connected with the apple show said New York ought to be represented, so they telegraphed to one of the largest firms of apple men in New York City, saying, "Send us half a dozen barrels of New York commercial apples, standard varieties." A representative of this firm went into the storehouse and selected a couple of barrels each of Baldwins, Kings and Greenings, and sent them on. These were commercial apples —you know how they are generally graded and packed. When they arrived at Spokane they knocked the head out, then tipped the barrel forward to show its contents. I need not describe the appearance of the apples. On the top there were two layers of good looking apples, in the center were culls, and in

the bottom—I'll not tell you what those were. People in passing saw the label "New York Apples." Then they went over and saw those beautiful specimens of Oregon, Washington, Idaho and British Columbia apples, and they probably said, "I guess I will grow apples out here where I can grow decent ones."

You see those people didn't analyze the situation at all, but the apparent lesson to themselves. Success in the apple industry lies not only in growing and selling, but also lies in honest packing. If our apples were packed in boxes the packer would not have the same chance to practice crookedness in grading.

The box package is the package which is used exclusively in the West. The size of the Oregon package is 18 x 12½ x 10½, the package which is known in the market and has been established.

What are the lessons, in brief, to be learned?

1st. High culture, pruning and spraying are essential in the growing of good apples, and no one can visit the Northwest country without being impressed by the methods employed by the growers there.

2nd. The lesson of grading with absolute rigidity and uniformity, and the use of an attractive package.

3rd. That these men, although having to send their fruit 2,000 miles to reach the markets of the world, are not frustrated by distance, but are going ahead making a reputation and establishing their fruit in great consuming centers

4th. They are demonstrating the influence of enthusiasm, coöperation and judicious advertising. All honor to these men who are giving us this great object lesson.

I don't believe we do half enough advertising—I am not referring to the kind I saw from the car window as I was coming up the Hudson and Connecticut Rivers, the billboard advertising that obliterates your beautiful landscape—but such legitimate and judicious advertising as will bring your apples to the front.

(The address was illustrated with many orchard scenes and a fine lot of pictures taken at the national apple show. Professor Craig

acknowledges the kindness of the Commercial Club of North Yakima, of Yakima, of Wenatchee, of Michael Horan of Wenatchee, of Rogers River and of the Better Fruit Publishing Company, in furnishing pictures from which lantern slides were made.)

VICE-PRESIDENT ROGERS: There are no other addresses scheduled for this afternoon, and it has been suggested that we take an early adjournment so that we may prepare for the Society's banquet, which is to take place promptly at six o'clock in Jewell Hall. You will understand that this banquet takes the place of our usual evening session.

Is there any further business before we adjourn?

MR. C. S. PHELPS: Mr. President, I make a motion that a nominating committee be named from the floor to bring in a list of nominations for officers of this Society, to be voted for at to-morrow's election, such committee to consist of one member from each county.

This motion was duly seconded and passed. The following were then elected as the committee on nominations:

Hartford County—Stancliffe Hale.
New Haven County—John R. Barnes.
Fairfield County—N. H. Sherwood.
Middlesex County—C E. Lyman.
New London County—C. A. Gray.
Litchfield County—Willis E. Frost.
Tolland County—C. H. Savage.
Windham County—E. E. Brown.

At 5 o'clock the meeting adjourned until Thursday morning at 9.30.

First Annual Banquet of the Society in Jewell Hall.

New Departure a Success!

"Feast of Apples and Flow of Wit."

Instead of the usual evening session at the annual meeting, the executive committee decided to try a new departure this year in the shape of a Fruit Banquet, with music and speeches following, the object being to emphasize the social feature of the big convention and promote a spirit of good fellowship among our members, as well as to offer the hospitality of the Society to our many friends from other States.

Plans for the Banquet were determined on months in advance, and the result was an unqualified success, and an occasion thoroughly enjoyed by every one present.

The fruit growers took kindly to the banquet idea from the first, the tickets were in great demand, and the large hall was taxed to its utmost capacity by a distinguished company, representative not only of the pomological interests of the State, but every branch of agriculture as well. Invited guests and visiting fruit growers were present from six different States.

The banquet hall was very attractive with its decorations of flowers and fruits, apples in quantity and of beautiful color predominating in a scheme of unique beauty.

The catering was by Besse of Hartford, and an orchestra of ladies under the direction of Mrs. C. P. Hatch played during the serving of the banquet.

The unique and very attractive menu cards were designed and printed by The J. Horace McFarland Co. of Harrisburg, Pa., and were presented with the firm's compliments "to the happiness of Boss Hale and his bunch."

The members and their friends gathered at 6 o'clock in the Y. M. C. A. building, and at 6.15 nearly 300 banqueters, headed by President Gold and Former President J. H. Hale

of Glastonbury, the toastmaster, marched to the banquet hall. The tables were decorated with apples in baskets and the same fruit in rows and pyramids. The head table was at the south end of the hall. Grace was said by Dr. L. A. Clinton of the Storrs Experiment Station.

At the head table on President Gold's right were Mrs. Gold, Professor John Craig of Ithaca, N. Y., Mrs. Orrin Gilbert, wife of Orrin Gilbert of Middletown, treasurer of the society; Dr. L. A. Clinton, Professor H. A. Surface, W. W. Farnsworth of Waterville, Ohio, president of the Ohio Horticultural society; Vice-President Elijah Rogers of Southington and Mrs. Rogers, and H. B. Fullerton of Huntington, L. I. On Mr. Gold's left were Toastmaster Hale, Miss Hale, Professor F. C. Sears, Wilfred Wheeler of Concord, Mass.; H. W. Collingwood, editor of the Rural New Yorker; Mrs. H. C. C. Miles, wife of Secretary Miles; Colonel J. F. Brown of Stonington, secretary of the State board of agriculture; Dr. E. H. Jenkins, director of the Connecticut Experiment Station, New Haven; Wilson H. Lee of Orange, president of the Connecticut Dairymen's Association; Albert T. Repp of Glassboro, N. J., and President Charles L. Beach of the Connecticut Agricultural College.

Almost every course on the unique menu contained apples in one form or another. There were steamed apples, apple sauce, fritter de pom, pomological salad, apple pie, protose with dressing, and to cap the climax, sweet cider disguised as apple juice. Even the ice cream, which was served in "orchard style," masqueraded in the form of fruit. One of the special dishes on the menu which everyone seemed to like was "peach dumpling with Hale sauce." There were apples everywhere. In fact, the only variety of the apple family missing that evening was the apple of discord.

The Menu.

STEAMED APPLES DE LAVAL SAUCE

CONNECTICUT STYLE.

Soup.

FRENCH NUT

KELLOGG, BATTLE CREEK STYLE

Roast.

PROTOSE WITH DRESSING APPLE SAUCE

Entree.

HICKORY CHOP JELLY FRITTER DE POM

Salad.

POMOLOGICAL

Dessert.

PEACH DUMPLING, HALE SAUCE ICE CREAM, ORCHARD STYLE

APPLE PIE, THE KIND OUR MOTHERS MADE

MACAROONS NUTS RAISINS

COFFEE

APPLE JUICE GRAPE JUICE

At the close of the banquet President Gold introduced Mr. J. H. Hale as toast-master.

MR. HALE: Brother and Sister Fruit Growers and Friends—As a former President of this Society I feel that it is a great honor to have been chosen toast-master to preside at the first annual fruit banquet. I believe it was our old friend Solomon who said. "Comfort me with apples because I am sick of love." I feel just the other way; and yet I am not sick of apples.

It is a wonderful work that this Pomological Society is doing for our apples. I have been asked since sitting here if some of these beautiful apples that adorn our tables were not Oregon fruit! If it had been a man who asked me the question, I would have proved at the time, either that he or I was no gentleman.

There are some wonderful possibilities in our Connecticut soil and we are just starting in to develop them. They tell of the wonderful opportunities in the West. If we will take advantage of all the opportunities we have right here at home we can make as great a success of apple growing as the Westerners do. To do this we must till the soil if we would find the gold lying underneath.

We must use our pick and our shovel. There is no question but that we can produce fruit more than equal in quality of that grown in any other section of the country. I hope at next year's banquet we shall have a hall twice the size of this and that we shall be able to have more elaborate fruit decorations, possibly a thousand or more bushels and boxes of choice Connecticut apples, and instead of wasting our time listening to the talk of a lot of these fellows (fifty or more who have asked the privilege of speaking to-night) who are to follow me, we will spend the time selling those apples and what we don't sell you may take away with you.

We are here to promote Connecticut agriculture, Connecticut horticulture, Connecticut pomology. Every man of us, if we are to succeed, must be up a tree pruning and spraying and thinning, in order to get the best results and that we may get better fruit from our Connecticut trees.

I have pleasure in presenting to you first, Professor L. A. Clinton of our State College, who is anxious to say a few words to you on what he does or doesn't know about any subject under consideration.

PROF. CLINTON: I am one of those fifty who asked Mr. Hale if they might speak here to-night, and if they all asked in the same way I did he simply couldn't refuse to let them speak. If I can judge at all of the frame of mind of an audience, this audience is in splendid condition to-night, so far—I won't prophesy what will happen between now and midnight—before those fifty speakers get through talking. You have not told me that you have enjoyed yourselves, but you act like the servant girl to whom her mistress said, "Mary, does John love you?" and Mary answered, "Well, I don't

know, missus, but he do like he do." Up to this time you "do like you do" have a good time.

At the meeting this afternoon and at this session here to-night I have wished many times that President Roosevelt's Commission on Country Life could have their meeting with us. I think after they finished with this convention they would certainly have some information as to country life conditions here in Connecticut. I am especially glad that we have with us a man from New York State and a man from Pennsylvania. You know New York State boasts and calls itself the Empire State and yet in all its history I would ask Professor Craig if they have ever had such a meeting as this, and if he tells you the truth, he will tell you "No." On the subject of co-operation, it has been said that Connecticut fruit growers could not work together; that they could not work for one common end. I would like to have the man who said that be here to-night and see how you men have worked for the same purpose, and by what I see you have pretty nearly accomplished that purpose. That same co-operation you have shown to-night, if carried into your every-day work will accomplish great results, and there isn't any force in Connecticut that can stop you from getting what you want. If the three or four various farm organizations in this State could get together and would say what they wanted with reference to their interests, you would find the people at the Capitol would just fall over themselves in granting their requests.

I had just time to-day to read the headlines in my daily paper, and a part of one article—the report of the Commissioner of Education of this State. If you have not read it, get a copy of the Courant or Times and read that article from beginning to end. If there is anything the matter with Connecticut, you are going to find it right along the line of our country school system. Some of you live in the country and are somewhat familiar with the country district schools, but not as familiar as you ought to be. I wonder how many of you within the last ten years have visited the little schoolhouse in your district. I wish you would make one resolve, and that is, that you will learn the conditions existing in your

district school, and if there is anything you can do to improve those conditions, that you will do it right away. In some of the States they have organized a demonstration train. My friend, Professor Surface, tells me he is anxious to get away from here to go with a party on such a train, that the officials of the Pennsylvania Railroad have for several weeks been running through Pennsylvania. I am thankful we live in a State where we don't need to run trains through the country in order to inform the people. There are some advantages in little Connecticut; you who live in the farthest points of the State can come to these meetings, attend the sessions during the day and spend the night at your homes; this is due to the fact that our towns are so well connected by railroads and the trolley system. We are proud of our State. We are proud of our men. We are proud of our apples.

TOASTMASTER HALE: Our success in fruit culture depends largely upon ourselves, our location and our soil; also upon the methods we use to develop our fruits, plants and vines. When we are in doubt about what we should do, we have our experiment station at New Haven to guide us; there they give us the standard of various fertilizers that are gave his fine puppy to his Irish friend, and when a few months on the market. You have heard the story of the man who later he came to visit the Irishman, he inquired for the dog and was told he was dead, having swallowed a tape measure. The man, thinking to be funny, said, "So, Patrick, the poor dog died by inches, did he?" "Faith, no," replied Patrick, "he went round back of the house and died by the yard." Dr. Jenkins, director of the experiment station, will speak to you, and tell you what he knows, or doesn't know, about certain things.

DR. E. H. JENKINS: I am very grateful for the privilege of telling you what I do know, or don't know about certain things. Sometimes, when the Toastmaster is speaking, I have to wonder which side he is on.

I am glad to be here in attendance upon this unique banquet. The menu has kept us guessing all the way through as to what thing was coming next. There was only one thing

that seemed familiar on the bill of fare, and that I get every time I dine with Brother Hale—it is Hale "sass." I have always had a very great reverence for pomology. I think this spirit of reverence has come in part from the fact that it is the most ancient "*ology*" we have. I am sure theology came two or three days later than pomology. The very first thing that was established in the Garden of Eden was the apple tree of the variety known as the "Tree of the Knowledge of Good and Evil." Because our first parents didn't understand how to handle the tree—never having read the bulletins from the experiment station at New Haven, they made mistakes and landed both themselves and us in a whole world of trouble. That particular variety of apple is lost, but when I get hold of a good McIntosh Red or Northern Spy, I think to myself, that came from the "Tree of Good Knowledge," and on the other hand, when I am unfortunate enough to have offered me a Ben Davis, I say, that came from "the Tree of the Knowledge of Evil." I hope sometime we may discover or develop that Tree again, for it is the combination of the two things we want. What a grand thing it would be if we could each of us have such a Tree in our yard—then there would be no further need for our churches and schools and experiment stations; all we would need to do would be to sit under that tree and wish for whatever we desired and it would come to pass.

It would be a pleasure to me to be so situated that I might mingle more with the public, but the duties of my office at the station are most confining, and it is also a strain upon one's knowledge to be called upon to answer intelligently all the questions that come to us. Very often I am asked to prescribe for a sick cow, and frequently when I am away in the country, I am called upon at midnight to administer medicine to a sick woman—my title giving people the idea that I am a medical man; and, by the way, I have had great success in giving long distance prescriptions. Another case is that of a man sending me a calf in a barrel, asking me to determine and tell him what it died of. One request sent me was asking for a harmless powder that would develop oxy-

gen when it was put in the mouth; another, whether borax mixed with water was good for freckles. So you see the duties of the experiment station director are multiform and do not leave us much time for recreation.

TOASTMASTER HALE: Last week it was my pleasure to be over at Cornell University and give a little talk to the students in Professor Craig's class. One of the students happened to be a Chinaman and he asked me several questions relating to our work. After the class was over, I was passing through one of the halls and saw the Chinaman talking earnestly with one of the girls. As a grandfather, I felt it my duty to chide them, so I said, "Young man, you are in this country to study horticulture; what do you mean by this sort of nonsense, talking with girls in the hallways?" He replied, "Mr. Hale, I study the peach." So you see what they are teaching at Cornell. I will now ask Professor Craig to address you.

PROFESSOR JOHN CRAIG: Mr. Roastmaster—that is what our friend, the presiding officer, ought to be labeled. Over in England they do this sort of thing professionally; when they can find a man who has as much assurance as our friend Hale, and as good a gift of gab, together with a string of taking stories at his tongue's end, they give him a handsome fee for presiding as "Roastmaster"—and that is what I shall call Mr. Hale to-night, the Roastmaster.

I am unlike the boy you may have heard of who was suffering with a pain under his waistband because of eating too much green fruit. When approached by a believer in faith cure and told to think there was no pain in his stomach, he replied, "Well, I guess I know, because I have inside information." If I had possessed a little inside information regarding the possibilities of my duties to-night, I might have been in a better position to have instructed or entertained you, for I realize that there is no man so dangerous to an audience as an unprepared speaker, who often, like many of our railroads, has poor "terminal facilities." Let me congratulate you in your progress as a society.

It was my privilege to attend a Connecticut Pomological meeting four or five years ago—it is said comparisons are odious, but, when favorable, are permissible under present conditions, I feel certain. After attending the meeting to-day and the banquet to-night and recalling the last meeting, I can say truthfully that I have never seen greater growth in an educational institution, in the same length of time, as I see in this Society in the period which has elapsed since my last visit. This banquet is one of the most delightful functions that I have ever attended—barring the number of things I was tempted to eat. The worthy director of your experiment station made some references to New York. I can reply to Professor Clinton's comments in this way: We grow more apples and more flowers than any other State, except California—and we don't grow the citrous fruits—and more nursery stock, I mean young trees, than any other State; but we have never had strictly fruit banquets, but perhaps we shall attain to that when we strike our gait. It must have been Collingwood who gave you the idea of this banquet—I know he is always preaching the gospel of apple eating. I said to your Roastmaster that it was a pity to put apples like those I see adorning these tables, in barrels; that they ought to be packed in boxes and they ought to be sold as Connecticut apples when you compete with the fellow from the West.

There are a great many questions about apple growing which one can't answer. Success or failure, after all, depends on the man himself. One man can grow good apples and the other man alongside does not grow good apples; both using the same soil, the same sky over both, the same sunshine beaming upon them, the same rain falling on each. The men are different. It is individuality. Personality counts in fruit growing as in everything else. The personal equation is in the last analysis the deciding factor.

The question before the Connecticut people at this time is how to extend, understand and take advantage of the possibilities of fruit growing in this State. I tell you, you must grow the best fruit possible on your own land. That is the best advertisement you can have. Let every one present here

to-night go home with that resolve and put that resolution to grow the best fruit possible, into practice at an early day. If you do that, I do not think you need fret very much about the competition of those more favored regions so far away. Let us grow the best to the highest state of development, then grade it conscientiously, pack it attractively, and place it before the consumer as the best of its kind. Banquets of this kind will do much to stimulate the grower to develop that which is truly the "Flower of Commodities."

TOASTMASTER HALE: I am glad to be able to say to you that we have a man with us to-night who really *knows* something. He is a former president of the Ohio Horticultural Society, and he is going to tell us something worth knowing: Mr. W. W. Farnsworth.

MR. FARNSWORTH: I think the most of you are acquainted with Mr. Hale and know how much to discount his speeches. I am glad to say that I am a native of New England; that is, about a hundred years ago my grandfather went from a little north of here to the West. I have been thinking to-night that if he could have looked into the future and seen what it held for the earnest workers of the soil, could have seen this magnificent display of apples on the tables, that he would have felt that Connecticut held as much in store for him as did Ohio. You know some Westerners say that the Ohioans started West, got "cold feet" and stopped. We don't accept that; we claim the State was settled by people who knew a good thing when they saw it and were contented to stay where they were instead of going further and faring worse.

I congratulate this Society for the splendid showing you are making in your work, for the great interest that is manifested here, and upon your awakening to the splendid opportunities that lie before you, at your very threshold. Do you know, I have been telling my friends that I had rather have an apple orchard in Ohio than an orange grove in California. "He laughs best who laughs last." I am laughing now; the future is very bright for the horticulturist who will improve the knowledge he has at his command to-day. Fifteen years

ago the conditions were different. At that time it was considered doubtful if an apple orchard of a hundred acres would prove profitable. Then they thought it the best way to put the apple orchard on the cheapest land they had and not invest much money in it. Since then, thanks to the efforts of scientists and the practical men working together, hand in hand, we have established horticultural and pomological societies and experiment stations in all the different States, and find that to-day there is no rural pursuit or profession that offers a better inducement for energy and intelligent thought than does that of fruit growing.

We all have our problems. Even the scientists can't help us to solve all of them. We must solve them ourselves individually. We can receive a wonderful amount of help and inspiration from each other—I have a very warm spot in my heart for our scientists, as well as our practical men; each has done much for us and we can keep learning from them constantly; but when it comes to our own farm and our own work, we must solve our individual problems for ourselves.

I would speak a word of encouragement to the younger men who are in attendance upon this meeting. There is no pursuit that will give a young man greater opportunities, wider scope, greater enthusiasm for the ideal life and the ideal home with a wife and children, than will horticulture. Friends, I bring to you the compliments of the Ohio State Horticulture Society and wish you Godspeed in this great work you have undertaken.

SECRETARY MILES: I wish to suggest at this time that the company arise and drink a toast, which I am sure we can all agree to. In explanation, let me say that it is the thought of one of our good lady members, Sister Crandall, who has composed it while sitting at the banquet; the sentiment is expressed for the Society and its distinguished workers.

The company then rose and drank to the following

TOAST

TO THE CONNECTICUT POMOLOGICAL SOCIETY ON THE OCCASION OF THE ANNUAL BANQUET, 18TH ANNUAL MEETING, 1909.

(Composed by Mrs. H. L. Crandall, Farmington, Conn.)

Here's health to our pride, who is just 18—
The finest and fairest that ever was seen.
We crown her with fruits and flowers untold,
For she's hearty and *Hale* and she's worth all our *Gold;*
Let's fill up our glasses and wish her *"God Speed"*
And in years yet to come, we will follow her lead.

As Mr. Powell of the New England Homestead was leaving the banquet hall, Toastmaster Hale invited him to say a few words.

MR. EDWIN C. POWELL: I have but fifteen minutes in which to make an address and catch my train, and I assure you the address will be brief. The matter has been referred to by many that this was the first banquet of its kind they had ever attended. I recall only one in my experience,—that was way back in 1890, I think, when I was a student at Cornell—that was before Professor Craig's time—when we arranged a big spread, serving only what was produced on the farm of Cornell University. We had fully as great a variety as you have here to-night. It was a very entertaining experience, for one never knew what was going to be the next course. I congratulate this Society upon its flourishing condition and upon the excellence of the banquet.

TOASTMASTER HALE: With the development of a better life in the country, our trolley car lines and the telephone, better roads and the autos, and the stimulus that has come into rural life by the work of this Society and others, there is a steady drift from the city to the country and an increasing intermingling of city and country people that is doing us good. One of the good ladies who has in a measure left town and city life for that of the country, and who, with her husband, is developing rural life into more beauty and wholesomeness,

is with us to-night, and I am going to call upon Mrs. F. C. Atkins, of Hartford and Bolton, to say a word to us about the "City Woman in the Country."

Mrs. Atkins: Mr. Toastmaster and Friends: The subject of country life is a very interesting one to both my husband and myself. Four or five years ago we went out into the country one beautiful spring day,—I remember so well the apple trees were laden with blossoms and how delicious the air smelled—the result was that we were so delighted, my husband bought a farm and gave it to me. When I entered the house on the farm I questioned whether I was to be congratulated or not upon my possession,—but there was a clump of beautiful lilac bushes near the house that won my heart, and so I felt we could make the house livable—of course that is the first thing a woman thinks of. When we really got into the house, we began to think of developing the land—we had some choice land, too choice, we thought, to put into fruit. We had some hilly lands, very rocky, which we thought was well adapted to fruit culture. We got the advice of some people and then attended the pomological meeting in this city that winter, to gain information regarding our work, and it was at that meeting that we received great help and enthusiasm, and there also that we met some of the nurserymen and became greatly interested in the planting of apple trees. During the winter and spring we spent our evenings studying the fruit catalogues, trying to select the varieties we wished. The trouble was, we wanted them all, and didn't see how we were to make a choice and leave some of them out. You will laugh when I tell you that our idea of planting an apple tree was to dig a little hole and put the tree into it. Fortunately we became acquainted with a man who was spraying to kill what he told me was San José Scale—I didn't know what that was at the time—near our home, and when he saw I was interested he said he would be glad to help us with our planting, which he arranged to do. Our land was so hilly and rocky that before we could plant the trees we had to do an immense amount of blasting, which took a long time. After the land

was properly prepared the planting was done, and our work has gone on successfully

My husband and I appreciate the work of this pomological society; you are teaching us; we are going to school to you; therefore, I could not refuse when the Toastmaster asked me for a word, to pay you a tribute, and I am happy to do so at this time.

TOASTMASTER HALE: One of the societies interested in the advancement of Connecticut agriculture, and one with which this Society works hand in hand, is the Connecticut Dairymen's Association. We have as our guest to-night the president of that association, Mr. Wilson H. Lee, of New Haven. We would like to have him tell us about his association, his farm, and how he makes the New Haven people pay him 15 cents a quart for milk that is 80% water.

MR. LEE: That is a libel on honesty. Dr. Jenkins says it is only 40% water. I don't know why in the world the Toastmaster didn't call upon one of the fifty men who asked him for the privilege of speaking—I know I didn't ask him for the honor. But I am pleased to say a few words to you. Like many others here, this is the first banquet of the kind I have ever attended. The fruit display is very attractive. Like the Doctor, at my right, and others present who attend other banquets where only men are present, it seems so nice to see the ladies here. This gathering shows that the members of the Society are prosperous and successful; the wives are interested in the business. We may be sure when our wives and daughters are interested in a work that it will surely succeed. A woman who knows how to handle the pocketbook will make the fortune of any man who is thrifty and honest. I am glad to see so many ladies here to-night.

I have a great interest in the farmers of this State, be they dairymen, fruit growers, poultry raisers, market gardeners or whatever particular branch they follow, and I feel that everyone who is interested in any of the various lines of agriculture should feel the very same interest in every other line,

and that the different organizations should work hand in hand. Those people who, like our friend Hale, have made a success of fruit growing, show their ability to adapt the soil to their wants,—and if every fruit grower is honest enough and good business man enough to put just as good apples and peaches in the bottom of the box as he puts on the top, his success is assured. Remember, it is necessary that people have confidence in the individual.

There is one thing that Professor Clinton alluded to in his speech that is near to my heart, and that is the rural schools of our country. I have just been interested in making an effort to improve the school conditions in my little town of Orange, by building a school-house in the center of the town. I feel this is a question that should be of vital interest to every person in this room. We should adopt the recommendation of the State Board of Education and centralize and improve the rural schools, for in our rural schools rests the safety of our State institutions.

Toastmaster Hale: One other kindred organization—the State Poultry Association—and its members are good friends of ours, is represented here by its president. I am going to ask Mr. Cosgrove to give us his recipe for making hens lay eggs at this season of the year.

Mr. George A. Cosgrove: I didn't expect to be called upon to say anything to-night. I remember when the Southerners in New York had a banquet, an Atlanta editor made a speech in which he told of the Boys in Gray having hearts of gold. That speech went all over the country. Connecticut can boast of having a man not only with heart of gold, but "Gold" all over. There he sits now—the president of the Pomological Society. As I sat here and thought of the tremendous amount of work involved in making this banquet a success, I said to myself, I know President Gold of the Pomological Society and President Lee of the Dairymen's Association can join with me in saying what a fine thing it is to have an efficient secretary, upon whom the bulk of the labor falls in the

preparation of these conventions. So, I say, "Long live Secretary Miles."

I don't expect to win your applause for my wit, but I will win your gratitude by taking my seat.

TOASTMASTER HALE: We certainly appreciate what Mr. Cosgrove says about our efficient secretary. Variety is worth having and we have it here to-night. We have been honored by hearing from the officers of several of the different State organizations; now I am going to ask Mr. Stadtmueller, of the Sheep Breeders' Association, to speak to us.

MR. F. H. STADTMUELLER: I did not ask the privilege of the floor, but I expected to speak because I was sent an invitation and a ticket of admission to the banquet FREE. The only thing I regret is that I will not be able to deliver full exchange for value received.

In the past few months one of the popular themes of discussion has been the meetings of the commission on country life appointed by President Roosevelt. This has brought to utterance a number of facetious remarks: one to the effect that up in Vermont all that was needed was a better grade of summer boarders, to which a man replied by relating a story of a farmer who advertised for summer boarders, and received a reply in which they asked whether there were facilities for bathing. When the farmer and his wife talked the matter over, they decided to write to the city folks telling them to "take a bath before they started."

There is one phase of the question about the uplift of New England farmers which it affords me great pleasure to announce has been materially advanced by the action of the Pomological Society, and through which action the Society has set an example worthy of imitation of all other agricultural societies in the State. It is the cardinal principle upon which our future improvement hangs—that is, the matter of organization and co-operation. Have you thought of the sagacity that was displayed by this Society in handling the peach crop of 1908? I don't know where the peaches all went. I thought I was going to be able to buy large quan-

tities of peaches cheap, but I didn't see a cheap peach on the market. It cannot be calculated, the thousands of dollars that were added to the income of the peach growers of this State. There is more of hope in this act, to the farmers of Connecticut, than any act that has taken place for years.

There are two factors that seriously interfere with the adoption of the principles of co-operation by farmers in general.

First, we cannot control the output of our production. No man can forecast what the harvest will be of any one crop.

The other feature that has been a puzzle is the matter of our location, improper facilities for steady communication with each other. This will be ameliorated as time passes, as each mile of macadam road, each mile of new trolley, each new telephone that goes in, accelerates and ameliorates this condition. But let us hold fast to the lessons we have learned in the past. Let us go ahead and constantly seek to organize so as to thoroughly understand each other's needs and to help obtain a satisfactory price for our products.

There is another phase of country life I would allude to. To those who aim their vision above the horizon of drudgery on the farm, work in the country, on the farm, is unequalled by any other calling, and which, when compared with the close application required by the average conditions of work in the cities, makes that work in the cities when compared with the opportunities offered in the country, at least proximate refined slavery, if not abject slavery.

TOASTMASTER HALE: We are fortunate to-night in having with us the Secretary of the State Board of Agriculture, Col. James F. Brown, and he will now speak to us, taking sense or nonsense as his topic.

SECRETARY BROWN: I have been told just now that I could talk either sense or nonsense. If I could talk either as eloquently as our Toastmaster can, I should challenge William J. Bryan at once in a contest for the presidential nomination in 1912, and I would expect to win.

This convention concludes a series of most entertaining and interesting conventions that have been held in the State of Connecticut for the last sixty days. We began with the Board of Agriculture and the Sheep Breeders' Association; then came the State Grange, followed by the Dairymen's Association and the Poultrymen's Association; and now comes the dessert to the feast in the form of the Pomological Society's annual meeting and this delightful and delicious banquet of fruit to-night, and it seems a most fitting close to the series. This spread of fruit which we have seen here to-night has been grown in a State which has the reputation of being filled with abandoned farms. I have on file now enough applications for abandoned farms to absorb nine-tenths of the farms in the State of Connecticut. The idea has gone abroad that we have a bargain counter here on which the State is offering practically to give away farms. Only last evening I received an application, evidently from a lady of culture—and you know ladies are always looking for bargains—asking me if I had an abandoned farm situated with a commanding view of the Sound, with good buildings, a farm that had been taken by the State for arrears of taxes and for which the title could be transferred to her for a small consideration. Then a short time ago I had an application from a widower of middle age down in Tennessee, who was in pursuit of one of our abandoned farms and he hoped also to secure one to which was attached a widow of middle age. After a considerable correspondence I assured him that I had on my hands neither abandoned farms nor abandoned widows, and advised him that possibly by advertising in some of our popular papers he might secure just the situation he wanted.

The farm population of Connecticut has been drifting toward the cities for fifty years. One-half the population of Connecticut to-day is in her 18 cities; one-half the remainder is in the 28 incorporated boroughs of the State, and a half of the remaining one-quarter is in the manufacturing villages; so only one-eighth of the population of the State

of Connecticut is to-day on her farms. Instead of, as in Iowa, who has 65 per cent. of her population engaged in farming, Connecticut has only 12½ per cent. of her inhabitants engaged in agriculture. What does that mean to you and me? What does it mean that only one-eighth of her population is actively engaged in farming? It means, for every worker on the farm there are seven consumers, instead of, as in Iowa, where there are two producers to every one consumer, and it is "up to you" to cultivate the soil. It is "up to you" to raise such fruit as we see here before us to-night and be able to supply the seven consumers in the cities and villages to every one individual that produces.

Toastmaster Hale: None of our guests this evening will receive a warmer welcome, I am sure, than our old friend, Editor Collingwood of the Rural New Yorker. He is here and will now speak to us on whatever topic may be nearest his heart.

Mr. H. W. Collingwood: I hardly know what to say when I look at 250 people who have made a hearty meal out of apples and grains and nuts. My only criticism of the meal is that there wasn't enough apple to it. You ought to have had two more courses of apple. My mind goes back to about ten years ago when the Apple Consumers' League was established. I remember going to the different restaurants in New York, wishing I might get a baked apple. I would take up a bill and glance over it and find there was no notice taken of the apple at all. There were stewed prunes and California plums and dried apple pie, but no baked apples. I called for baked apples and was told they had none. I told them what I thought. The manager of the place came to me and hoped there was nothing wrong about the food. I told him everything was wrong, there were no baked apples. He said he would try and remedy the trouble. The next day I went to the same place again and they had on the bill in red ink, "Baked Apple and Cream." The next day I had a letter from the proprietor asking me where he could get anything in the way of an apple for baking; he said a man

was trying to sell him some apples with red stripes on them, but they didn't taste and smell like the apples he used to see when a boy. I did the best I could to steer him away from the Ben Davis and told him to get Spies and Greenings. In less than six months he was using three barrels a week; he had customers who would walk a mile in order to get a baked Spy or Greening. From that has grown the Apple Consumers' League. Here we have had a full meal and all seem to be satisfied. We have not yet got into the business of booming the apple—it is a science, I tell you. Eight years ago I was in Virginia and they became very indignant at me because I suggested that they advertise their apples by placing the name of Virginia on the boxes containing the fruit. Connecticut is not "in it" with Virginia for apples. Two days ago the Secretary of their society, who has charge of advertising their apples in New York—and they laughed at me when I suggested such a thing as a retail market for Virginia apples in New York—came and told me they had actually begun work. They sent up a shipment of boxed apples and they were placed on exhibition in competition with Oregon fruit. They found their apples were just as good and then they began to bring them up and spread them before the notice of the people. With the exception of the color the apples are fine. You know it is usually true that "Handsome is that handsome does." The Virginia apples are packed by a man who does nothing else and they put their name on every box. They found there were 50,000 people in New York who were born and raised in Virginia. Now, if those 50,000 people do their duty and each member of the family eats five barrels a year, you can figure out how many apples Virginia has got to furnish. They are going to open a store and put a man in it and advertise in all the newspapers their Virginia apples. They will get the trade, too. What are you men doing here on these hills of Connecticut that you will let the people of Virginia—who are backward in orcharding—come into your markets and beat you at your own game? You must wake up, get going. I

tell you this whole thing has changed since we were boys. The whole thing has tipped over. If I don't bring my six children up so that when they have homes of their own they don't feel it is their duty as citizens to eat six barrels of apples a year, I shall feel that I have fallen short of my duty as a father and citizen.

I have found a place in Connecticut where as an ordinary thing—not extraordinary, mind you—but as a regular thing, when the camp-meetings are held in the summer, automobiles come, bringing the wealthy class of people — we will call them the "city-farmer" people—and alongside them comes a load of people drawn by an ox-team. There is not another State in the Union where we can find that state of affairs. Such wide differences as are found here are not to be found anywhere else. Starting from Hartford—where there is more wealth per capita than in any other State or place in the Union—and go in any direction forty miles, up on the hills or into the valleys, and mark the contrast. There is no other State on earth which presents such wonderful contrasts as does Connecticut, and in my judgment that is not a condition to be ashamed of. On the other hand, it is one of the most beautiful things, one of the greatest things you could have. You speak of the possibilities of Connecticut, of her richness, her strength and her culture. This is true, and it is a fact that in her strength she is bringing the people of the lower level up, and those of that level are not drawing those on the higher planes down. If you go to Louisiana or Mississippi or Alabama, that cannot be said now, and it will be at least half a century before it will come true and every man will have an opportunity to do his best. But there is no farm in Connecticut that has not an opportunity hanging over it ready for the man on that farm to grasp if he will only improve what is before him. Where a man can put on the market such fruit as I see here before me, such opportunities! You don't dream what it all means. In the twelve months ending January 1, we exported from this country about seventeen million dollars' worth of nuts and fruit.

Twenty years ago the exports did not exceed probably one million dollars' worth.

People are coming here who will eat our good fruit. The foreign countries tell me that when these good red Baldwins come over the other side and can be bought at a fair price, the poor will eat them in large quantities. There is absolutely no product that can be taken into the foreign countries that will be so thoroughly in demand as the apple. Here is your further opportunity. Do you realize the wealth of the opportunity that is held out to you and your children, and all those who follow you, if you only plant apple orchards and grow the fruit right and send it across the water? It never will be done, my friends, by simply talking about. I think our colleges, our experiment stations, our agricultural societies to a large extent, and our pomological societies and all other forms of education, have been barking up the wrong tree. They have all gone at this too much on the theory of the almighty dollar. I think they have said, "You must study this and do this simply because there is a dollar in it." If we could have more of the spirit of the single purpose of reaching down to the best there is in the hearts of men in our agricultural education, we would succeed better.

My theory is, if we are going to succeed as fruit growers, we must give up this eternal banking of our hopes simply upon the making of a dollar on our fruit.

TOASTMASTER HALE: The Connecticut Agricultural College has always been backed up by this Society, and it has always helped us. The president of that institution is with us to-night. He is a young man for a College president, but still he is a worthy and reliable one. I introduce to you Professor C. L. Beach.

PRESIDENT BEACH: It was my good fortune to have been born in the West, but it was my greater good fortune to have moved to the East in my early days and be adopted by the people of Connecticut. My earliest recollection of my farm home is the apple orchard. I remember the delicious harvest apples that ripened about the first of August.

The man who planted that orchard on my father's farm I know was a Connecticut Yankee. He planted it good and plenty. He planted it not only to supply six barrels of apples for each member of the family, but also to supply five or six barrels of cider. After we gathered our apples for the winter supply, it was understood we were to load up half a dozen wagons of apples to take to the cider mill, and after that cider came home, several barrels were "doctored" with raisins in order to preserve it for winter use. I didn't happen to get interested in fruit growing. My father was a pioneer dairyman. The University of Wisconsin this coming year is going to offer a prize to, and confer honors upon, those who have become proficient in agriculture. We have been conferring honors upon such men as J. Pierpont Morgan and Andrew Carnegie and John D. Rockefeller and Roosevelt and Taft, men who have been successful in finance and business, in law, and in politics and in statesmanship. Why not confer honors upon men who have made a success in agricultural lines?

I suppose every man acquires more or less of a professional education, whether he goes to college or not. Take a man like Brother Hale, for example, he ought to have more religion than the man who preaches to him. No doubt he has been to church twice a Sunday for the last thirty years and has probably listened to a hundred sermons a year —in thirty years, that would be 3,000 sermons. Just the same, in a certain way, the man who is engaged in agriculture in a State like Connecticut, where we have flourishing societies like the dairymen, pomologists, poultry, and like organizations, where institutes are being held,—it is hardly possible for a farmer who is enthusiastic about this business not to absorb a certain amount of scientific knowledge and to get a professional education in his line of work. I don't believe there is much difference between a conservative professor at 50 and an aggressive farmer at 50. I don't believe if you would take Professor Gulley and Brother Hale and shake them up in a bag and show them to a community,

unknown to them, anyone could tell the difference between them.

Each one of you, as farmers, have an opportunity to gather a large amount of scientific knowledge and put it into practice. I congratulate you upon your work. You are doing a work that is as important as the Agricultural College; in some ways more so, because you have larger audiences, you are reaching the people we cannot reach. The more work you do of this kind, the more students we will have at Storrs.

Toastmaster Hale: Those of you who had the pleasure of hearing Professor Sears to-day must have wondered how an ordinary professor, with the meagre salaries professors receive, could have started a large orchard and bought a farm. I wondered myself until some of the Massachusetts people told me since this meeting began, of his fake advertising. He is a professor of Pomology, a fake advertiser as well, and as such I introduce him to this audience.

Professor F. C. Sears: I find myself a good deal in the same position as a friend of mine in the West. He was a Mason and, as such, was called upon a great many times to make speeches. He was always glad to do so, but insisted that he know beforehand so that he might make some preparation. One night, at a banquet, the toastmaster came to him and said that Dr. Jones, who was to have spoken on a certain subject, was not present, and that he would have to call upon him to speak in the doctor's place. He declined and the toastmaster tried to find someone else to speak, but failing, came again to my friend and said he must speak on the chosen subject. My friend replied, "Do you suppose I am going to make an ass of myself without any preparation?"

I have enjoyed this occasion very much and am glad of having the privilege of being with you to-night and taking part in this unique occasion. I congratulate your Society upon its prosperity and thank you for your attention.

TOASTMASTER HALE: Those who were in the hall to-day and heard Professor Surface talk about some of our manufacturers of scale killers, must have had your eye on Brother Pratt. He must have felt like the colored woman who was in court for having thrashed her boy. It was proven against her that she had given him a very severe drubbing, and when asked by the court if she had anything to say before sentence was pronounced upon her, replied: "I'se got nuthin' to say, but I want to ask you, Jedge, just one question: 'Was yu ever yu'sef the parent of a puffec'ly wuthless cullud chil'?'" We have "a perfectly worthless" oil manufacturer with us and I will now call upon Mr. B. G. Pratt of New York to say a word to us.

MR. PRATT: I don't know what Mr. Hale has against you and me, for I am not an after-dinner speaker and the hour is late. Some years ago I heard of an especially fine old chestnut tree on Mr. Hale's place and went there for the purpose of getting a picture of it. After tramping a mile or more I found the tree and got a snap-shot of it. I think I accomplished at that time what no other person has ever been able to do—I got a photograph of one of Brother Hale's "old chestnuts."

I begin to feel like I belonged to the Connecticut Pomological Society. I have been with you for four years now and every year I enjoy the meetings more and more.

As I go about from State to State I learn many things which I hope I may be able to tell others of and which may be of benefit. There is a general sentiment throughout the country regarding the better packing of fruit, the better care of it. It is a question I have heard discussed thoroughly at every meeting of the different societies that I have attended. I am a member of the Consumers' League. When I lived in Jersey we used to have enough trees in the yard to give us our apples for green apple pies and enough to last up until about Christmas time. But now, I have not had a green apple pie for four years; you can't get them; they are not to be had. There is plenty of opportunity for

the grower of a high grade of fruit to succeed, more so now than in years past, for now the individual grower has more advantages in the way of study and helps from the agricultural colleges. Results of this study will show when a man adapts the right kind of fruit to the right kind of soil. The successful fruit grower must of necessity be an intelligent man, not of necessity a college-learned man, but he must make good use of his education in the line of work he has chosen. As a result of the improvement in the growth of fruit, we as consumers are beginning to have to pay for it. There is no bank stock in the United States that pays as good dividends as a good orchard. Think of it: I have to pay thirty cents a dozen for cooking apples over in Hackensack. I can buy oranges cheaper than apples. These apples are packed in boxes and we can buy any quantity we wish and know every one is perfect, and it is a very much better way to buy them than in barrels. In the city, few people have room to store a barrel of fruit, and hence a smaller package is preferable and will be bought whenver it is possible to find one. Our fruit growers have great opportunities before them in the line of packing their fruit.

TOASTMASTER HALE: H. B. Fullerton of Long Island and the United States is with us and I want to tell you that, although he is not a large nor a small fruit grower, he is a pretty good all-around fellow, and we are glad to have him with us to-night. He runs a sort of a model farm out on Long Island. You know him.

MR. FULLERTON: Neighbors, it is simply glorious to come down here. I have been coming swift. I got a letter from a man I am awfully fond of, and whom I think of very often, asking me to come here. I knew he meant business, so I came. I am here. And traveled 500 miles to do it. I left the top of the Alleghany mountains this morning and traveled by coach, by sleigh, by locomotive trains, by ferry-boats and trolley cars, and I have arrived. You can't do that—travel that distance in that time—anywhere else in the world; 40 miles an hour for 11 hours; I

had all my meals on trains and they were of all kinds, too; the only thing we were shy on was apples—I forgot, they presented me with a bunch of Ben Davises, but I knew better. I knew I was coming to Connecticut, and already I have got my pockets filled with Greenings, Baldwins, and Golden Russets. I see a great big increase in your attendance since two years ago. I see, too, you have an old original toastmaster, a good man, although he does raise Elbertas, but only for commercial purposes, for they are not fit to eat. I notice he don't eat them at home. You have got something else that pleases me, a good agricultural college. Do you know that Western men are coming to the Eastern agricultural colleges and into the East to grow fruit? Do you know why? Because we have the markets. Don't you think for a moment that you have got to go outside your own county. The biggest markets in the world are right near you; some of you can drive into them; others can send their fruit by the trolleys. You have got New York; they are shipping onions from Texas and imitation fruit from the West to New York. See what your opportunities are. Some people say we must start a campaign of education to teach folks to eat fruit. A child is born with a taste for fruit. The first thing a child will grab is an apple, and New York can't, simply can't get fruit. Last summer you couldn't buy a decent pear in the New York markets, and yet there were cars of Keiffers rotting in the railroad yards. Why? Because New Yorkers just won't eat cordwood and kindlings and pay fruit prices for it. Don't raise that kind of fruit. Raise quality and you will get there. New York is at last catching on. New York is made up of all sorts and styles and kinds. It can't raise anybody; it isn't big enough. They all come in from outside. England, Scotland and Wales are selling potatoes in New York City and it costs them the freight and expenses to land them, 74½ cents a bushel, and they are thanking God they can get the New York market at 90 cents a bushel. You can beat them, can't you? You have your experimental stations to help you.

Read the bulletins. Spray not less than three times, whether there is any blight or bugs. That is what those fellows are doing. You may be growing 265 bushels to an acre on an average. They used to raise from 400 to 700 bushels in Maine, now they are glad to get 210 bushels an acre. Send the boys to school and, when they come back, listen to what they have to say.

Another thing I am proud of, and that is patriotism. Let us never lack in our patriotism. 'Way back in 1776 they said it was lacking. We licked one of the biggest nations in the world, save one, before we got through with them. They said it was lacking again a few years ago and that Spain would wipe the floor with the United States; that we could not get enough men to defend Boston and New York harbors. Every regiment was overcrowded and we had ten or fifteen times the men we had in 1776 or 1865. We have got them yet. You people didn't come here just for apples and to listen to apple talk—you came for patriotism, to improve your land—not your own individual acres, but all Connecticut. We are full of it and will never get over it. We are Americans. What are Americans? Spaniards, Irishmen, Englishmen, Germans. Get into politics. If it is rotten, clean it out. That is what we need.

Look at Congress. The only bill that wasn't scaled down in the last appropriation was the agricultural bill. Why? Because they saw the whole country was behind that bill and was working for agriculture. They used to call us "hayseeds;" now we are "agriculturists."

Don't raise any more Peck's Pleasant apples. There are lots of good apples. Get them. Don't forget the Newtown Pippin and Albemarle Pippin. I had a friend tell me about the Western fruit. Every year I buy some of those beautiful California Bartlett pears—just two; there are five in the family, and the baby don't eat them because he isn't a year old yet; I would feed him fruit, but the mother says it isn't proper. We cut those pears in two and give each of the girls a piece and each of us take a piece and take *one* bite.

You might just as well split a corn-stalk open in the middle of the winter and taste it. It will have the same fresh flavor. The same is true of the apples of Oregon. Beautiful to look at, but no flavor. Let us stick to our own State and own town. You can get more out of five acres right here than in ten times that number in the West or Northwest. Out in Manitoba were sent shiploads of people from Europe to raise wheat. How much did they raise last year? Not any. There is almost as much harvest season in Manitoba as the Eskimo has. You don't have to go there to get hard luck; you can get it here. Cultivate your own country. Your markets are here to take care of all you raise.

With Mr. Fullerton's bright talk the speaking was brought to a close.

Mr. Hale gracefully thanked all who had contributed to the pleasure and success of the banquet, and at 10.30 the delightful occasion came to an end. As the company broke up it was the unanimous expression that this evening's session had been the most enjoyable of any in the history of the Society and that the banquet should be made a permanent feature of each recurring annual meeting.

Second Day,

Thursday, February 4.

MORNING SESSION.

The opening session of the second day of the Society's Annual Meeting was called to order at 9.45 Thursday morning by President Gold.

Most of the members were on hand at the opening hour, despite their "dissipations" of the night before at the banquet, and the large attendance continued during the day. Even greater interest was shown in the addresses and discussions than on the preceding day.

The first business of the morning was a discussion of the contents of the Question Box.

QUESTION: Is there any standard Baldwin apple in regard to color and shape?

PROFESSOR GULLEY: No, sir; but there is a general impression or idea of what the Baldwin apple is in shape, and a man who is growing it knows about what that shape is,—an apple supposed not to be quite as long as wide, and of a dark color. That color will vary according to the land it is grown on; will vary with the seasons and everything else; it is one of the things you learn by observation. I don't think you can describe it. As to there being anything very definite, there isn't.

PRESIDENT GOLD: The question is, what sort of Baldwin you would give the prize to? I think the man who asks the question means, whether you would give a big, overgrown Baldwin the prize over a medium-sized Baldwin. Do you consider a medium-size typical of the variety rather than an extra large one?

PROFESSOR GULLEY: I certainly should say the medium, regular size would be a good deal better than the large one, especially if the large one didn't run true to shape; the large ones are more angular than the medium apples.

QUESTION: Would you spray a young apple or peach orchard even if no disease or insect was noticeable?

MR. ROGERS No. What is the use if there is no disease or insects? It is throwing away money, according to my notion. The inquirer does not say what he wants to spray for or with?

PRESIDENT GOLD: No; he simply wants to know if you would spray.

MR. ROGERS: I think if a man knew what he wanted to spray for, it would be wise to spray.

PRESIDENT GOLD: Why shouldn't he spray as a preventive?

MEMBER: Before you spray you should know what you are spraying for. You would not use for an insect pest what you would use for fungous diseases.

MEMBER: We should always know what we are spraying for. It is a hard thing to know what to spray *with* when you don't know what you are spraying *for*.

PROFESSOR GULLEY: There is no question but what all diseases are helped by preventives; if a man is going to spray every season he is going to be ahead of the disease. If it is insects, that is a different thing. There is no use to spray for scale until the scale is there. You must know what you are after. In the case of fungicides, you are safe in spraying ahead; that is sure.

Discussion of the Question List.

QUESTION: How can we handle our apples to secure most profitable returns?

MR. WHEELER of Concord, Mass.: I have thought of this question somewhat. I know that a fruit grower in Massachusetts, who handles a great many apples, grows the early varieties. The McIntosh he handles in fancy packages, selling them to a very select trade in Boston, taking them in his own team and delivering the fruit to his customers. In that way he realizes a high price. He told me last year he got $2.50 a

THE BEAUTIFUL FARMINGTON VALLEY
VIEW FROM TUNNIS FRUIT FARM.

NOON HOUR IN THE PEACH PICKING SEASON TUNNIS FRUIT FARM

INTERESTING SNAPSHOTS TAKEN AT T. H. & L. C. ROOT'S ORCHARDS, FARMINGTON CONN.

bushel, and for eastern prices that is good, considering the short distance he has to carry them. This year it would pay to store winter apples, but ordinarily it doesn't. I think apples should be handled from the producer to the consumer. This man I have in mind uses a box a good deal like these boxes here on the stage, but not as deep: more the shape of the official box. He has his wagon fixed so it carries just so many deep and high; each box is labeled with his name; he gets his boxes back; his apples are not wrapped, but every one closely packed; no loose apples put in.

QUESTION NO. 3: Is it feasible for a fruit growers' society to undertake the coöperative buying or selling for the benefit of its members?

MR. J. H. HALE: I would like to hear what somebody else has to say. It is feasible, of course, when you are really ready to co-operate. Unquestionably the fruit growers of the State buy in the way of fertilizers, tools, implements and packages perhaps several thousand dollars' worth in a year. If they were really willing to put the money together and in someone's hands and pay cash for everything in advance, they could save quite a large amount. I know it is done by some societies in some States. As for selling, we did it in a certain way the last year,—the peach crop, by the work of this Society; we didn't absolutely sell together, but by advertising we brought the buyers here, then, by standing together on price, we were able to sell at a better price than otherwise. Having been a farmer all my life, and having for nearly 30 years tried to work in a co-operative way, I find, on the whole, we are a pesky lot to co-operate with ourselves.

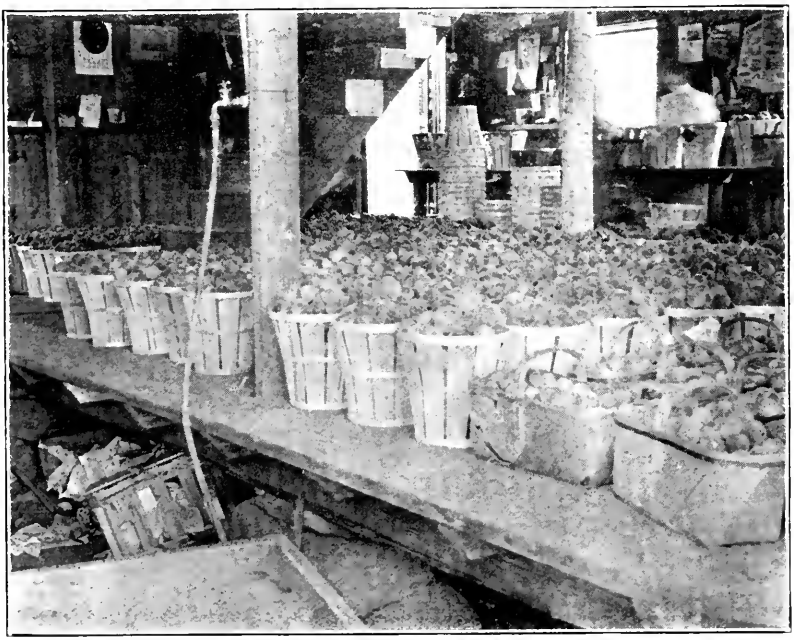
SECRETARY MILES: Will Brother Hale suggest anything that this Society can do in the years to come to pave the way for such a thing?

MR. HALE: You can do it by forming a business association. For half a dozen years in the State of Georgia they have been working along the line of this Society, doing more or less talk about co-operation but little work. Finally the Peach Growers' Association was instituted and took up a

campaign of work, binding itself to co-operate with the railroads and with the trolleys and buyers. There was some capital needed, and a membership fee of from $3 to $5 per year was charged; this raised a thousand or fifteen hundred dollars, but not enough to do business with. Last year the lowering in the price of peaches made the peach business so unprofitable that all the growers decided they must co-operate or bust. They didn't want to do the latter, so a preliminary campaign was started to which all contributed. It was agreed to form a stock company with $50,000 capital, each grower to subscribe for not less than $50, and no one to have more than $1,000. The organization was perfected and later the stock was increased to $100,000. Within the last five weeks this balance has been raised. The business is now in the hands of an executive committee of nine, who have absolute control of where the fruit is to go. The grower is simply to harvest his crop, pack it and put it in the refrigerator car. It puts the growers into one great commission house. That means business. What is going to be the result? They are spending money liberally; the manager is paid $7,500 per year; he is an expert railroad man and was for years in the employ of Armour & Co., having charge of their fruit shipping. Now there are but six dealers in New York city who can buy our crop. What are the other dealers going to do? They are coming to Georgia to buy. The society has inspectors to inspect the fruit. It is not believed by any one of the society that any of that $100,000 will ever have to be touched except in the preliminary matter of caring for the crop up to the first of June of this year; then it will be refunded. I believe the stock will pay from 30 to 50 per cent. dividend. The time has come when we can do the same in Connecticut. We have a splendid opportunity to sell most of our products in nearby markets. We can be good neighbors and friends and yet not succeed in business. Co-operation will help us. Let us try it.

PRESIDENT GOLD: We should be thinking of and educating ourselves up to the point so that when an opportunity

SOME EXTRA FANCY FRUIT READY FOR MARKET TUNNIS FRUIT FARM



A CORNER IN THE PACKING HOUSE TUNNIS FRUIT FARM

INTERESTING SNAPSHOTS TAKEN AT T. H. & L. C. ROOT'S ORCHARDS
FARMINGTON CONN.

for co-operation is presented we shall be able to accept it. It is a matter that cannot be forced upon us. I believe it is an excellent thing.

SECRETARY MILES: One of our members has suggested that we have a publicity committee. I think it would be well to create such a committee this year, and let this question of the coöperative selling be left in their hands.

QUESTION No. 4: The proposed New England Apple Show at Boston in 1909: What is it expected to accomplish?

Mr. Wilfrid Wheeler of Concord, Mass., was invited to address the meeting on this subject.

The Proposed New England Fruit Show.

MR. WHEELER: If I could contrast the East with the West in the matter of apple growing. I should say New England is pessimistic and the West is optimistic. In order to bring the matter of the possibilities and opportunities for apple growing a little more closely before the people of New England, the governors of the New England States met in Boston last fall and went over the matter of some uniform legislation in regard to the different matters pertaining to New England's interests touching apples and the orchard industry. As a result of that conference the different secretaries of the boards of agriculture and the State entomologists of New England gathered in Boston, and after suggesting various uniform laws that might be applied throughout New England, they suggested we hold a big apple or fruit show. That show to be in Boston this coming fall, at the rooms of the Massachusetts Horticultural society, who have given up their building for the purpose; thinking it would bring together in Boston all the fruit from the different New England States. There is needed concerted action among the States in order to make this show a success. So the committee has asked that every State pomological, horticultural, or any society interested, send a delegate this coming month to a meeting to be held in Boston, to meet the general committee and in that way to get together and plan for the

show. The scope of the show is to be educational in the extreme; to educate the public as to the quality of apples and the possibility of fruit growing in New England. In order to start this thing we are going to ask the railroads of New England to come to that show and be prepared with maps and diagrams of their roads to show the accessibility of New England fruit lands to the markets of the country. We will have illustrated lectures on different phases of fruit culture given by experts; there will be a lecture every evening. The show will last from the 19th of October to the 24th, inclusive. We expect to invite the public of Boston to attend on Sunday, and for that reason we arranged to have the show last over one Sunday. There will be exhibits of all sorts of machinery, spraying apparatus—everything that is needed in the fruit industry. The exhibit of fruit must be from New England alone, but the machinery exhibit may include the United States. Then, too, the different styles of package will be shown; there will also be an exhibit of the work of injurious insects and diseases, and three lectures on these subjects. We are going to show the latest work that is being done along all lines of orcharding. Another thing is an exhibit of the different birds that are beneficial to fruit culture and the control of insects. That is a subject that has been neglected a great deal. We have an ornithologist in the State who is devoting a great deal of his time to birds in relation to fruit culture and the control of insects. That will be a very instructive part of the show. What we want is the co-operation of all the New England societies and individuals to come up and make a good exhibit and to lend us your aid in every way that is possible. We want to make the fruit industry of the country located right here. We want to make the example of New England felt all over the country. We want to better the quality of our fruit. We have the soil and can grow wonderful apples. We want to show the public that our apples are just as good to look at—and everyone knows that they are better to eat—as the Western apples.

I suggest that you appoint a delegate or two delegates to meet with this committee in Boston—I think the date is March 5th.

PROFESSOR GULLEY: In accordance with Mr. Wheeler's suggestion I move our President, Mr. Gold, be appointed a delegate to attend that meeting.

This motion was seconded and passed unanimously.

MR. HALE: Should we not go further than this, and should we not plan some appropriation at this time, or give some authority, whereby the President and executive officers of this Society should be prepared, and have some money to spend to see that there is a generous exhibit from the State of Connecticut, aside from what special individuals will put up? That will, undoubtedly, be a great fruit show. The show at Spokane has stimulated the New Englanders to do this, and every man should be personally interested. This Society receives money from the State of Connecticut to carry on its work, and it is in duty bound to stimulate the general horticultural interests in the State, other than our own personal interests. At that exhibit you are going to see and meet the wonderfully beautiful apples from Vermont and Maine (they are beautiful because they can't help it); you are going to see also apples from New Hampshire and Massachusetts and Rhode Island; and with all due respect to the gentleman who presented the resolution, we can if we will, send from Connecticut hills apples that will knock the spots off half the other States. Let us resolve that we shall grow better fruit next year, regardless of the cost, so that there may be a great exhibit of Connecticut apples. Undoubtedly, in trying to do that ourselves, we will reap the benefit later on. We ought to send at least 8 or 10 carloads to Boston.

MR. WHEELER: We will take care of all that you send.

MR. HALE: Don't let us go up there with a puny 100 barrels; go up with from 2,000 to 3,000 barrels and sell them, or enough of them to pay for our theater tickets and little side shows. I am glad Mr. Wheeler has told us about it. I am glad the railroads are at last interested. We need them

and they need us and, now that they are interested, let us use them in every way we can. If we go up there we must plan to have for our exhibit the biggest and best space; let us authorize our president to arrange for that, and then we must all get to work and back him up.

PRESIDENT GOLD: Mr. Hale's remarks are all right. I think a committee should be appointed to take some action in the matter of having an appropriation made to defray somewhat the expenses of this exhibit next fall; either an appropriation from our Society or from the legislature.

MR. HALE: Let us do it ourselves. We have got enough money.

PRESIDENT GOLD: Possibly the matter might be referred to the executive committee.

MR. HALE: I move that be done.

MR. CURTIS: What about the publicity committee? Should not that committee have charge of advertising and working up an interest in this show? If the member who is to take up this matter is here, should it not be presented at this time?

PRESIDENT GOLD: I would ask if the gentleman who has the resolution relating to a publicity committee is here? I understand Mr. Henry has the matter in charge.

MR. A. T. HENRY: The idea came to me a while ago that perhaps a committee which might be called the publicity committee would be a benefit to this Society. It seemed to me there were some things which none of our other committees could fully cover, and so this resolution has been prepared. It is crude and will likely have to be put in shape, if the Society sees fit to adopt it:

Resolution to Appoint a Publicity Committee.

"Be it hereby resolved that a new standing committee be raised whose object shall be to help in every possible way the fruit growers of Connecticut. This may be in any of the following ways:

"By advertising our wonderful advantages as a fruit-growing State.

"Starting a campaign which will in time develop into co-operative buying and selling.

"Bringing to the attention of the Society now cultivating implements, new pruning tools and the latest ideas in spraying and spraying implements.

"It should be within the province of this committee to see that Connecticut is the best represented State at fruit meetings and exhibitions."

It was moved that the above resolution be adopted.

PRESIDENT GOLD: We already have a motion before the meeting that this matter of the Boston fruit show be referred to the executive committee.

SECRETARY MILES: I move an amendment, if the gentleman will accept it, that the publicity committee and executive committee jointly have this matter in charge.

MR. CURTIS: Would not that make an unwieldy body?

MR. FOSTER: I rise to a point of order. The amendment of the Secretary is to the effect that we refer this to the executive committee and publicity committee. How can we refer it to the publicity committee if it does not yet exist?

PRESIDENT GOLD: The point is well taken. The question before the meeting is on the adoption of a resolution referring this matter to the executive committee. Are there any further remarks?

MR. CURTIS: I would like to say one or two words on that. I would ask Mr. Hale if he will withdraw his motion and let Mr. Henry's resolution prevail. I think this committee on Publicity should be given a certain amount of money to advertise with and to see that this Society is properly represented at the Boston show. This is to be a very important exhibit of fruit and we ought to make every effort to make it a success. I support Mr. Henry's resolution.

MR. HALE: I will withdraw my motion if the gentleman desires.

MR. ROOT: Will you inform us what constitutes the executive committee?

SECRETARY MILES: The four officers of the Society.

MR. ROOT: That does not include the county vice-presidents?

SECRETARY MILES: No.

PRESIDENT GOLD: The resolution of Mr. Henry regarding a publicity committee is before the house. Those in favor of appointing a publicity committee may signify it by saying aye; those opposed by saying nay. The ayes have it and it is a vote and a publicity committee will be appointed.

MR. CURTIS: Does the president consider it necessary for the Society to appropriate a certain sum of money for the work of that committee?

PRESIDENT GOLD: If I am rightly informed, all matters of appropriation of money have to come before the executive committee anyway. They appropriate different sums of money from the treasury for different objects, and if this publicity committee is directed to do certain things the committee will come before the executive committee and get the necessary appropriation. Is that correct, Mr. Secretary?

SECRETARY MILES: I think you are right about that, Mr. President.

At this point the regular program was taken up and Professor A. G. Gulley of Storrs discussed briefly the question of "What Special Orchard Treatment is Required to Obtain Best Results with Different Varieties of Apples?"

SECRETARY MILES: I understand that some of our growers of small fruits are having trouble with the different sizes of baskets. I think at this time Mr. Farnham has something to say along this line, and a resolution to offer.

MR. A. N. FARNHAM: Mr. President, I don't know that I have any resolution to offer, but in talking with the representatives of the different berry basket manufacturers I find that different sizes are being used in different parts of the

country, and of course they are shipped into the different cities where each city has a law regulating the size that shall be sold in that particular city. If I may be permitted, I would like to call the attention of those interested to a circular sent out by the Boston market authorities.

When our local growers met in New Haven for the purchase of crates, those who were shipping fruit to Boston, of course, wanted to get the standard crate, and those who were shipping berries to New Haven or other Connecticut markets, or anywhere except the Massachusetts markets, didn't care for that crate. There is some little material difference in the size they sell for standard crates. Most of the crates vary in size from the standard measurement of 67.21 cubic inches. I presume that 95 per cent. of the berry crates that are used in Connecticut are second-hand crates, coming back from the Boston or our own State markets. They have been shipped north with berries, and we find there is a variety in sizes, and the continued use of these crates is going to make trouble sooner or later. In regard to the bill before Congress respecting the size of fruit packages, I doubt if that covers berry baskets and crates. I think it would be well for this Society to send some sort of a resolution to the committee in Congress, having such matters in charge, setting forth these facts, and see if we cannot get something that will protect us when we ship to the New York or Boston markets.

PRESIDENT GOLD: You have heard Mr. Farnham's remarks. I think it would be proper to refer the matter to our legislative committee.

MR. HALE: There is a bill in Congress, called the Porter bill, which proposes to regulate the size of fruit baskets. I think I was in error when I stated, if I did so, that it covered small fruits. It is the very matter that was before our general assembly yesterday. The conference of New England governors had it before them,—the production and marketing of fruit in a general way and recommendations for uniform laws. Many of our Connecticut fruits are marketed in adjoining States, and under the Massachusetts law our ship-

pers are going to have trouble. I think it is a matter that ought to be presented before all law-making bodies that some action may be taken on it. I have no doubt—whether it comes about this year or not—that we shall have a general recommendation for certain uniform laws in New England, where our interests are so intermingled as they are here. I would move move that the Secretary be authorized to present this matter of our desires to the legislative committee of the general assembly of Connecticut.

PRESIDENT GOLD: If the matter is referred to our legislative committee, they can refer it to the legislative committee of the general assembly. There is a motion before the house to refer the matter to the legislative committee of this Society. Those in favor of so doing will say aye; those opposed, nay. The ayes have it. The matter is so referred, and the whole matter of packages and baskets, as discussed, will come before that committee.

PRESIDENT GOLD: The next item on our program is an address on "Growing and Handling Berries and Other Fruits for the Fancy Market;" and I take great pleasure in introducing as the speaker the well-known Ohio fruit grower, Mr. W. W. Farnsworth, ex-President of the Ohio State Horticultural Society.

"Growing and Handling Berries and Other Fruits for the Fancy Market."

By W. W. FARNSWORTH, Clover Leaf Fruit Farm, Waterville, Ohio.

Mr. President, Members of the Connecticut Pomological Society:

I am very glad to be here with my New England friends and exchange ideas with you. I expect to carry back more than I leave and I hope some of your enthusiasm too. It has been said you have been talking apples throughout the entire session. I would be glad to continue that talk, but you have assigned my topic as "Growing and Handling Berries and

Other Fruits for the Fancy Market." Very likely "other fruits" means apples. I always think the discussion,—the questions and answers,—following addresses and papers are of more value than the paper or address itself. I might spend a considerable time speaking on a certain subject and yet not touch on very many of the points that are of direct vital interest, but when you begin to ask questions then you are interested.

Perhaps the first thing to consider is the soil, or the man who handles it—for I believe there is really more in the man than in the soil or anything else. I have heard that if a Connecticut Yankee was shipwrecked on a barren uninhabited island, he would soon get rich selling wooden nutmegs to the natives. So you see there is more in the man than in the location, but if the right man has the right kind of soil it is better still. We are told that our neighbors in the West grow beautiful fruit. They have the virgin soil filled with humus, with all the elements of fertility in it, and employ modern and advanced methods of husbandry. When I begin operations on a piece of land I try to restore it to that condition. When I am preparing new land I drain it before I plow, putting the tile about 90 feet apart and at a depth of three or three and a half feet before the ground is cleared, if possible. For cover crops we use clover, soy beans or whatever seems to be the most available; we also use rye or buckwheat and top dress with stable manure largely. I might say I don't know much about commercial fertilizers; they are in the experimental stage in our State among the fruit growers. Our grain growers are using them with profit on our rich soil. I am now conducting experiments in one of my apple orchards in the use of different formulas of fertilizers, but as I am not past the experimental stage I can say nothing of the effect. I use mainly stable manure.

One of the things I learned very early in my career was, there was neither pleasure nor profit in working wet land or poor land, and I was after both the pleasure and the profit.

After securing this ideal condition of the soil one of the next things to consider is the variety of fruit and the market.

The market will largely determine the variety. Don't go ahead and plant something you like individually. First, consult your market; find out what the people want and what they are willing to pay for. We have been told we ought to educate the people up to a higher grade of fruit. That is all right as a side line, but it is easier to supply the demand already existing than to do missionary work. We ought in selling to supply the demand which already exists. Give the public something good when we sell, and thereby create a demand for more. In our business transactions we should keep something in view beyond the immediate transaction we are engaged in. If we sell a bushel of Ben Davis for a dollar, our transaction ends with that sale. We have disposed of one bushel of inferior apples and killed the demand for three or four bushels of something better. We must look beyond that transaction and make it profitable for the man with whom we deal, and also make the bushel we sell now create a demand for several bushels more. This demand may be created by satisfying the consumer.

The question will then be considered in what method we want to sell. If you wish to sell in a wholesale way; if you are removed from the market and wish to ship in carload lots, you ought to have a very limited selection of varieties of apples, say two or three varieties. On the other hand, if you want to supply the retail trade or supply your customers direct—which is much preferable—you want a much larger selection of varieties, and, if possible, commence with the earliest. In my own case, I am able to deal directly with the consumer, and I have a selection of varieties from the beginning to the end of the season. The more systematic way will be to begin with the earliest varieties of fruit in the season—the strawberry is about the first fruit. Our method of growing the strawberry is not what is known as the fancy method. We have secured better results in growing them by thinly matted rows. In the preparation of the soil we use well fertilized clover sod. The one thing we look out for in our preparation is to remove any danger of white grub. With

our short rotations I have never had trouble with it. I apply the stable manure any time after the clover crop is removed, as early as possible, and the next fall, or during the winter, we plow this ground thoroughly, turning the stubble under, and early in the spring as possible it is put in the best condition possible by the Disk Harrow. Then as soon as the plants have made a little growth, and the ground is in good working order, we do the planting. We claim there is some danger in late planting if it is dry and hot, because the plants don't get as well established as by earlier setting. We put the roots about four inches deep and one to two feet apart—sometimes four, and cultivate both ways to save hand labor. Then later in the season we cultivate but one way. A good many growers cut off the first runners, not allowing any to form, but we find there is a little risk if a very dry season follows, as we don't get the plants well established. We allow the runners to form as early as they will and turn them to fill up vacancies. Then later in the season we use the runner cutter blade on the cultivator to cut off the runners.

Our ideal method is to have each plant have a space of 6 to 8 inches square.

In setting out plants we use the machine which is sometimes known as tobacco transplanter. It is quite a rapid method, but the ground about the roots must be made very firm. You get the best results in the matter of any planting by having the ground firm about the plants. If you can pull a leaf off a plant without disturbing the roots, then it is properly planted. In planting the roots, if they are put about three or four inches below the surface, they will start much quicker and make a better growth than if placed down six or eight inches below the surface, for in the early spring you must have warmth to start the little roots. You must preserve the moisture that is so essential to the growth of the plant; keep up continuous cultivation and in the winter mulch with wheat straw—that is what we use; marsh hay or grass would be better if we could get it.

In my own practice I only pick a bed one year. We find that the varieties we grow give us the best fruit the first

year and we think we can produce a new plantation quite as easily as to clean out an old one and they suffer less from insects.

There are a few varieties that are subject to rust and we have discarded them. We have never tried spraying strawberries. In the experiments I have known of, the results were not very conclusive that benefit was derived from the spraying; so I have never sprayed.

Never take up a plant for replanting from a bed that has borne fruit. The bearing of fruit seems to withdraw from the plant strength and the new plants have not sufficient vigor to be of any particular value.

The next fruit in order is the currant, which is a great favorite of mine. We have found them specially valuable as a crop to grow in our new orchards. They seem to take to shade and it is of benefit to the grower as it prolongs the season. By prolonging the season we accomplish several things. We can finish our cherries before we begin on the currants, and later on the currants bring a better price, and they are a good crop to handle late, as you can pick them whenever it is convenient.

In growing the currant I have always preferred the one year-old bush. Cut it back to 6 or 7 buds and plant in the fall or early spring. The currant needs good rich soil, perhaps it will take more manure than any other fruit that we grow, and the soil needs to be rather heavy and moist. Don't grow them in tree form; they are more apt to get topheavy and, when loaded with fruit, break over. Another reason is that it is more difficult to renew. In starting with the 6 or 8 buds you get your bush headed down low. Cut out the excessive young shoots to keep the bush compact and symmetrical; then, after they have borne two or three crops, begin to remove about a third of the old bearing stems and allow enough young shoots to come up to keep the bush the proper size. If any of the young shoots make an excessive growth, cut them back. We don't practice as severe cutting back as some do, as we have not found it necessary. Possibly in some varieties it is necessary to be more severe in cutting.

The variety I have grown the longest is the Victoria. Some will object to it as being too small. It is a medium-sized currant, but a very rank grower and very free from attacks of borers; it yields handsomely and is altogether a very satisfactory variety.

We have some other varieties fully as good: the Prince Albert, Red Cross, and Wilder. These four varieties are especially good for commercial growers.

Stick to the old tested, time-tried varieties for your main crop,—they are the mortgage lifters. The testing of new varieties may be done for diversity. Don't get in a rut because you find some blanks in them, but try them in a limited way.

Take the black raspberry next. The culture of that fruit is on the decline in Ohio. I believe there is a good opening there for energetic growers to engage in it. I had to abandon it in my own case as it conflicted too much with the cherry harvest, and we grow the cherry quite extensively, and preferred to abandon the raspberry rather than the cherry. I believe the raspberry can be raised to advantage, but to do so I think vigorous spraying is necessary.

I believe we cannot depend on any one thing alone. You want to start with clean canes and begin spraying early; cut out the old bearing canes and burn them up. And that holds good in all horticulture. We should clean up and burn up more often than we do. If care was taken to burn the refuse canes you would not have half as much difficulty with insects and fungous troubles. Take the old canes out and burn them up; it has got to be done at some time and should be done at once. I don't know as they draw any strength from the root, but they are of no benefit. Get them out of the way as quickly as you can in order to cultivate the young canes and remove the diseases or fungous troubles from the plantation.

I think one of the greatest mistakes in raising red raspberries is allowing the canes to get too thick. I practice allowing about 25 canes to the rod. We grow them in the hedge-row system, and the majority of growers would have

four times that number in that system of growing. Don't allow all the suckers to come up and grow during the first season, as they sap the strength of the root and crowd each other into spindling canes, and you would have to cut them away the next season anyway. They are the same as a weed. Allow as many young shoots to come up and grow as you need for bearing next year and then cut the old ones out after they have borne.

We will pass on to the tree fruits.

The cherry is the first, and I think in our section we have neglected it. The sweet cherry has not been very successful grown with us. I think the mistake made in planting them is to place them too close together. The kind I am planting I put 25 feet apart each way for the Montmorency. The English Morello can be planted closer together. It is better to cultivate the land the first two or three years. In my orchards I grow small fruit in connection with them for the first few years. There is much that can be said in favor of sod mulch methods and cover crops and other methods. You cannot lay down any hard or fast rules in these matters. Ask yourself what the trees need and then supply those needs by the best methods you can use under your conditions. In my case the land is level and rich and valuable and so I grow small fruits or potatoes or anything I wish to grow to make it valuable. My methods have been to grow strawberries or raspberries and currants for a number of years, but I quit growing raspberries, finding the currant an ideal crop to grow in a young orchard; the shade of the trees seems to benefit the currants.

Our sour cherries are the Early Richmond and the Montmorency. I believe that is a fruit we don't grow half enough of. I am satisfied if there were three or four times as many cherries put on the market as at present, at a little lower price within reach of all classes, they would be taken up without any particular glut, and if not by individual buyers, then by the factories for canning and for preparing syrups and flavorings.

The next fruit in order is the plum, and the cultivation of that is quite similar to that of the cherry.

I have a plum orchard that has been planted not less than 12 years, wherein I planted currants. The plum trees are too close. I planted currants in the rows of trees and then planted a row between. After a few years I took out the center row. We have been feeding them heavily with manure and they have borne excellent crops. From an acre and a quarter I sold in one year between $500 and $600 of plums and $150 of currants. I think this will be the last year I can raise the two and have thought so for several years, and then when I pick the crop of plums and currants and see what a vigorous growth the trees are making, I think there is no harm in leaving the currants another year. As a rule, though, we don't let our currants stand so long; usually by the time our orchards are in bearing we have removed our small fruit and that gives our tree fruits a better chance.

As to the pear, we are growing that to some extent. The interest in pears is not nearly as great as it was a few years ago. The apple seems to be crowding everything else out. We know the apple is the king of fruit and it fills a place that other fruit cannot fill. The other fruits have their place, and I believe the outlook is now good for anyone who will plant pears and care for them carefully. It is perhaps a difficult fruit to grow, as the blight is an enemy of it. In the last few years we have culled out a great many varieties subject to blight and by a little careful management, seeding down our pear orchards after they had been bearing, we have reduced it and also have been using lime and sulphur. I am not merely speaking of my own experience, but that of other fruit growers.

In my own case I have not lost two trees out of a thousand, and only saw one blighted limb in my orchard this year; last year did not have any. I am not positive that lime and sulphur did it, but I think it has a great deal to do with it.

Markets differ as to varieties. We have not the markets you have. There are two or three varieties that are very profitable; first, the Bartlett, then comes the Seckle, and the Duchess third. I have an orchard of Keiffers; they have been of some profit, but not so much so as the others; that variety is a very good pear for canning. I always ship them where they are appreciated,—there is no accounting for tastes, you know.

Perhaps a few words in regard to general orchard management might be of as much value as anything right here.

In my conditions I want to use my ground thoroughly, use it to the greatest advantage, because I am so situated I can apply considerable stable manure. As a cover crop we use soy beans and vetch. Our method is to begin a young orchard by growing either potatoes or strawberries or currants or something of that kind. Any other vegetable crop will do. Then as the orchard progresses we discard all these crops and simply cultivate it in the early spring until about mid-summer, then sow vetch in early August and allow it to remain on the ground until early the next spring. Theoretically, the orchard should be cultivated as early in the spring as the ground can be worked, thus taking advantage of the moisture which has been stored during the winter season and put it in the shape of a great big sponge so that it will absorb the rain that may fall. The ground that is properly cared for is able to absorb all the moisture that falls as the seasons come. Begin as early as possible to work that ground, to create that mulch on the top to prevent the evaporation and save the moisture for the fruit trees. The vetch or crimson clover matures earlier than the red clover and we think gives better results; w think it retains the moisture better and more evenly.

We have not used commercial fertilizers to any extent except in an experimental way.

In our peach orchards it is not so easy to secure these cover crops. I have depended somewhat upon oats and somewhat on weeds. I don't know that I ought to confess that.

Webster says a weed is a plant out of place. My idea is that after mid-summer anything that will grow will answer the purpose of a cover crop in an orchard; therefore, if weeds grow and cover the ground and act as a cover crop, they are not out of place. Of course we prefer vetch or crimson clover, but if we cannot have those, then weeds or pigeon grass will answer that purpose. They will act as humus to turn under next spring. I spent two or three weeks in the winter in Michigan through the peach section. They have burned out the vegetable matter in the soil by continuous cultivation without cover crops, and as a result they have none of it left in their orchards and they are badly troubled with the scale and yellows and little peach, because there is not enough vitality in the soil to resist the ravages of these enemies. While there I saw more clearly than before the necessity of keeping this humus in our soil. I welcome anything green growing in the orchard, unless it is some of our worst weeds. You cannot lay down any iron-clad rule in horticulture regarding pruning. We have all sorts of different ideas. I like to keep my trees thin enough to let in the sunlight. I think extensive and severe pruning of any tree is the means of delaying fruiting. For a number of years I have been practicing planting two-years-old apple trees and top-working them with scions from my own bearing trees. I don't know how much there is in this theory, but I do this to be sure of my varieties, as many times I do not get varieties true to name when I order them from nurserymen. Some advise to let the trees grow one year before top-working. I top-work immediately. If your trees are received early in the spring or in the fall before and have started to grow, so the sap will circulate in the trees, you can put in the scion with almost absolute certainty of having a good growth.

If your trees are a little slow or a little dry, you will have trouble in getting your graft to grow. We cut them down pretty low and put the scions in, and nearly always they grow nicely and we are absolutely sure of the varieties we have growing in our orchards. I think there is a probability of getting the trees in bearing earlier that way, too. I have an

orchard six or seven years which has been treated in that way and they have been bearing two or three years. Although there is not so much advantage in early bearing as some of us have thought. It is more important to grow good strong trees than to have young immature trees bear fruit. A strong, vigorous 8-year-old tree with a good bearing surface is to be desired; then you can have good large crops of fruit. There may be more advantages for growing early fruit in the west, where they calculate for only 15 years of life of trees, but here and in the middle west we can count on longer life; so we can afford to wait a few years longer and get healthy, vigorous trees. Cutting off the young tree too severely will check fruitfulness. Pruning is a necessary evil; it is necessary, but don't do any more of it than is necessary to accomplish your purpose.

In regard to markets.

When I planted my orchards I decided there were enough people in Toledo who were willing to pay a good price for a good apple—the people who were tired of the Ben Davis apple and the Keiffer pear—so I planted something better, a great many of your varieties; you know we are nearly in the same latitude as you, almost directly west; so we planted Baldwins, Greenings, Grime's Golden, the Jonathan —I was perhaps the first grower in Ohio who planted the Jonathan to any extent. I was rash enough to attempt it and the results have amply justified my faith in it. It must have high culture; it is inclined to grow a little small and for that reason needs high culture and thinning. We thin our trees and also the fruit. Some say it is too large an undertaking and that it is quite impossible to thin the apples. It is as easy to thin as it is to pick them. If you find there are more apples than you can thin, then there will surely be more apples than you can pick. I have been practicing thinning of fruit for 8 or 10 years and it pays. You must do it to get the handsomest and best product. In my own case, living as near as I do to Toledo and being able to ship our fruit by trolley, we are able to supply our customers in the city

throughout the entire season. I ship in half bushel baskets, making arrangements with four or five grocers to handle them in the city. I have a cold storage at my place.

The next question is the price, and that is not so hard a question to solve as you think for. Set your own price and the grocer will make his selling price, and you may be sure he will get what profit he wishes. I have never lost a customer by keeping my price up—and no one will if he keeps his quality what it ought to be—and I have never had any apples or other fruit sent back.

I strive to get color, flavor and appearance in all my fruits. We also strive to give our customers the full worth of their money. When we deal with the commission men we try to give them something that will hold their trade. A good many of us have a feeling against commission men, thinking they are not giving us a square deal. There will be no trouble if you give them an understanding as to what they may expect, and then get him his goods on time and always supply him, even if you are offered a larger price by someone else for a certain crop. Don't allow anything to break in on his contract; give him a chance and he will deal square with you, especially if you are near enough by to keep watch of him once in a while.

I want to give a word of encouragement to the younger men here in the New England States. I can see in this day and age and stage of progress in scientific horticulture wonderful possibilities. I speak of scientific horticulture with frankness and candor, for we never would have been in the condition we are in if it had not been for the help of our scientific friends, and what they have done could not have been accomplished without the aid of the practical fruit growers. There is a bright outlook in horticulture for any young man and it offers an ideal life for a family and home and is of itself an ideal occupation.

Discussion.

Professor Gulley: What variety of plums are you growing, the European or Japanese?

MR. FARNSWORTH: The European varieties. I only planted a few Japanese plums and I am glad of it; they may be all right for some localities, but I didn't like the quality and I didn't plant many. The varieties I prefer are: Bradshaw, Lombard, Yellow Egg, Grand Duke and Arch Duke; and the blue plums for canning—they are not subject to rot.

MEMBER: Have you ever planted prunes?

MR. FARNSWORTH: I have planted 140 German prunes; they have been out about 15 years and we have never picked a hundred bushels all told.

MEMBER: Have you ever sprayed for rot?

MR. FARNSWORTH: We spray for rot with lime and sulphur when trees are dormant, and then with Bordeaux. We thin the trees and also the fruit. We have succeeded in almost exterminating the rot; there is a difference in varieties in rotting.

MEMBER: Have you anything against the Cherry currant?

MR. FARNSWORTH: It is all right if you can grow it; it does not grow as well with me. The question of varieties everyone must settle for himself.

MEMBER: Do you have any scale?

MR. FARNSWORTH: We have had it; it does not bother me at all. We spray every year; we don't examine our orchards to see if there is scale; we go over the whole thing with lime and sulphur solution. We spray our plum orchards oftener through the season than any other fruit, especially do we spray when the blossoms first fall; then we spray at least every five days for the curculio and thoroughly cultivate through June and July; we also use arsenate of lead in our spraying. Some use arsenite of soda, but we concluded it injured the foliage; it is more expensive to use the lead, but it pays.

MEMBER: Some people claim it is a benefit, others an injury, to run poultry in orchards. What do you say?

MR. FARNSWORTH: I have four or five tenement houses and the people who occupy these houses all keep poultry, and we keep some. I have never seen any evil results; on the contrary, have always considered it beneficial to keep chickens and allow them to run in the orchards. In the young orchards we sow buckwheat as a cover crop and allow the chickens to run in it.

MEMBER: What brand of arsenate of lead do you use?

MR. FARNSWORTH: I don't want to advertise any special brand. There are a number of good standard brands.

MEMBER: What do you think of the Schaffer raspberry for commercial purposes?

MR. FARNSWORTH: It is all right for anyone who has a home market; but it won't ship; it is, however, the best berry for canning. The question of arsenate of lead brings up another matter. For the last three years in our State, horticulturists have clubbed together and purchased their spraying supplies and have saved a great deal. We have secured the best brands, for no firm is going to send anything but a first-class article to a horticultural society, as they might lose business by doing otherwise. I order direct from the factories and the shipments are made direct to the users.

At the close of Mr. Farnsworth's very practical and instructive address and the discussion following it, President Gold called attention to the matter of membership and emphasized the importance of every fruit grower present identifying himself with the work of the Society. Mr. Gold said: "For your own benefit, as well as that of the Society, you should become members and pay the required fee."

MR. J. H. HALE: In relation to the membership fee. We have glorious meetings and hear things that are of real and practical benefit to us in our work; worth money to us. When I attended the Western New York Horticultural Society's meeting I noticed they took the fee at the door. In other words, you didn't get in unless you paid, and there were over 1,500 people who paid a dollar apiece to get into those

meetings and hear the addresses and see the officers—and honestly their president wasn't as handsome as ours, either.

The closing feature of the morning's program and the one perhaps of greatest interest was an illustrated address on "Market Gardening on Long Island," by Mr. H. B. Fullerton of Huntington.

Mr. Fullerton is no stranger to Connecticut audiences and never fails to please as well as instruct by his breezy and forceful manner of presenting the results of his remarkable success on the Long Island soil.

But in this instance the speaker was more interesting and entertaining than ever and for more than an hour and a half he held his audience spellbound with the glowing account of the striking methods and results achieved with ordinary market garden crops, the whole vividly illustrated with a vast number of fine lantern slides.

The dinner hour went by unheeded, nearly all remaining until the close of this intensely interesting and practical lecture, which awakened in us all a determination to make better use of our opportunities in the future. We regret that in the absence of Mr. Fullerton's pictures we can give here only the chief points brought out by the speaker.

"Market Gardening on Long Island; Some Striking Methods and Results."

H. B. FULLERTON, Huntington, L. I.

Director of the Long Island R. R. Experimental Stations.

For a young man starting out in life there is nothing that offers the opportunities that agriculture does. The small farmer—the term market gardener, I like better—is something the United States knows little about except as it comes from foreigners. We are beginning to learn from the Italians, the French and the Germans. They come to America, and down in Pennsylvania and in Jersey they will make more on from three to five acres than we can make on a

hundred and fifty. They keep the land busy all the time. So the small farmer who has such a valuable market as New York is fortunate and may make a fortune if he will. Don't you believe that New York will ever be over-supplied. New York grows faster than it is possible for any number of people to supply her inhabitants fully with sufficient fresh vegetables. In Connecticut you have large orchards of fruit upon your hillsides, but you have magnificent valleys that are growing nothing, yet these will yield you more per acre than your orchards yield—if you plant those valleys to vegetables. The opportunity is simply marvelous. Raise good stuff. Don't try to see how much cheap stuff you can raise. Raise the best; there is a market for it and you can get your own price.

Use barnyard fertilizers. We need them. Why? One reason, and a clear one, is because the humus is gone out of the soil, and without vegetable matter you can't raise any plant in the world. You may have all the chemicals you can collect and you can't grow a spear of grass. Add humus and you can grow everything. If you have no animals, get manure from the city. If you can't get that, go into the swamp and get the muck, dig it out and use it.

The first thing to do when you start any kind of business is to secure a partner, and get the right kind. Be full partners. Let that woman or let that man know that it is a full partnership; that they are to share alike in every way, manner or form; don't say that you will give her $12.00 or $15.00 a year to run the house; half is hers every trip. You want to divide square; when you come in at night, tell her what happened during the day at the office or on the farm, and she will tell you what happened at home. If you start in this way and continue, you will have very few "affinities" and divorce cases.

Twenty years ago I discovered, by accident, Long Island; from the East End, in Brooklyn; I asked someone how big the Island was and he said he had been down to Jamaica (10

miles out) and he thought that was the end. I went out one day and telegraphed back that I had taken a vacation and would be back when I found out what lay east of Jamaica.

There is no room to live in New York and yet it is almost as big as London and London is starving to death. New York don't get enough food; not enough fresh food, or enough of anything in fact, fruit or vegetables, no matter how much you bring in. They are shipping onions from Texas to New York—there is that great market right in touch with you. Why don't you improve your opportunities? We have on Long Island 200,000 acres of land that have not been touched, and you have some in Connecticut, I dare say. There is a glorious opportunity in your valleys here. You have your local markets and are close to New York and the big New England cities. Friend Hale has proved that. He used to wheel peaches in a wheelbarrow up here to Hartford. Keep your eye open, your ear to the ground, and watch your opportunities. There are more opportunities to-day than there have been in fifteen centuries.

Think of it. The men in Texas and Dakota, 60 miles from a railroad station, are doing well and competing with us. What is the matter with us? Something. You can accuse the railroads if you want to, but if it had not been for them, the United States would not be cultivated now and the Indians would be doing the scalp act yet. Railroads all over the United States are starting experimental farms to attract the attention of the world to the fact that there is land now uncultivated in the great eastern States that is just as well fitted to raise products needed in the cities as is the land in the west. Some of us, because we have always lived here and always done things in a certain way, haven't awakened to the value of present day knowledge. Do you get the experiment station bulletins? Do you apply some of the knowledge you gain by the reading? You hear things at this meeting every year. Do you take advantage of what you learn? There is no man with brain big enough to take home with him all that he hears, but he can get a little and put it into practice.

Experimental stations were established for what purpose? You have been reading about spraying for 20 years. You have been reading about humus. It has been proven that humus is necessary and must be in the soil if you would grow anything worth while. The experimental station calls your cheerful attention to the fact that on a few acres properly cared for more can be raised than on your big farm under the methods employed by you. You are expected to try this thing yourself. Nothing succeeds like success.

The Pennsylvania railroad is going to establish experimental stations on their lines. Why? Because the farmers have been going west or to South Dakota, where a man last year couldn't keep chickens because it was 40 degrees below zero and he had no snow to stuff the cracks with; to Manitoba, where they go to raise wheat, with what result? No crop last year. What is the use of going west or northwest when we have thousands and thousands of idle acres right around us? The railroads are spending money for bulletins for you to read, for everyone to read. The Long Island railroad has never made both ends meet and has been on the point of bankruptcy dozens of times and yet the stockholders go on putting their money in because the future is assured. It has been a little slow in coming, but it will come. Success has not come as quickly as they thought it would, but they haven't lost hope.

Sometimes our soil isn't right to raise the things we are trying to make grow. If it is acid, it needs to be made alkaline. If your soil is sour, it won't grow crimson clover. It will grow raspberries and lima beans that seem to do just as well on such soil. Put wood ashes on the soil, say 400 pounds to the acre. We bought city manure. It cost us 95 cents a ton. I find in Connecticut and Massachusetts they pay as high as $5.00 a ton for this humus, because you can't get along without it. Without that manure you might put on 20 tons of commercial fertilizers and you couldn't grow a wisp of hay or anything else. Commercial fertilizers without humus will do nothing. Down in the Hackensack Valley

there is just seven feet of humus, all coming from fallen leaves and plant growth, and it is growing big crops. When plants are analyzed we find they always contain potash, phosphoric acid, nitrogen, and a few other mineral substances. Plants containing all these elements must have those elements to grow. Will you tell me where those plants are going to get it in the humus valley? I can't guess. Straight vegetable matter without any fertilizer whatever except what nature put there. They get their nourishment out of the soil, air and water, all three. These plants grow and they grow in humus; they have air and water and vegetable matter. Don't forget this when you begin your work this spring.

Another thing you can't get along without. That is water. Dig a well, drive a well, blast a well, have water. When you get ready to set your plants out, don't wait for Providence. In the west they have found out they couldn't grow crops without water, and the consequence is they are enlarging their water supply every year.

We use water in another way. Somebody asked this morning what we had got to spray for. Nobody will ever tell him; there are so many things, nobody knows. But he must get busy. We have blight and bugs enough for several countries. Whenever we bring a new plant or shrub from anywhere we bring an enemy with it. We must spray to kill them.

A thing that helps us on the bug question is birds. You want birds and you can't have them unless you have plenty of water. With us last year we had 67 varieties of birds and they probably killed billions and billions of bugs. We sprayed, of course, but the birds got a tremendous number. The water was what brought them. Have running water somewhere on your place.

You must have air for your plants, not only above but also beneath. You get that by cultivation. On ten acres we always get three or four crops, never less than two on any acre.

Use a good cultivator—a man in Philadelphia invented the Planet Jr. I used to ship carloads of them to Mexico and China; they are not fully appreciated in this country. A man with a Planet Jr. by actual time will take care of ten acres well, while a man with a hoe will take care of one acre, middling only.

The labor question is an interesting one. New York and Boston is just full of men wanting to work on the land; they don't want to live in the city; they are starving to death and you can get them into the country. Don't imagine just because they don't speak English they are not as good as we are. Some of them can point with pride back to the civilized times when their ancestors were writing poetry while our ancestors were living in caves, and eating snakes. Don't you holler "dago" until you find out a man's pedigree. Then treat them right and be a real man; don't coop the men up in quarters in which you wouldn't house your animals. No wonder they rebel.

Now for the Market Garden products: Our radishes were put on the market a little earlier than the Jersey farmers sent theirs and we got five cents for them: when they came with theirs the price was down to half a cent a bunch, and we quit. Then the lettuce. The people think there is nothing like the Big Boston head lettuce. We are gradually teaching the people to eat the loose leaf lettuce; we can sell anything in the lettuce line if it is good quality. In fact you can sell anything you wish to sell if it is good and you can prove it. About Lady apples—I see you have some here. If every farmer would plant an acre of that apple and raise good ones, he could sell them. You can't find any in the markets. If you will raise good ones you can sell them all right, and you can't raise too many either.

In bunching our radishes we make the bunches so that every one is good; there are no "bum" ones in the middle. We save our tops and poor vegetables for the pig,—and it pays to keep a pig to eat imperfect vegetables, for we get a cent and a half a pound more than is paid for swill-fed pork. There is money in pigs and always will be.

Rhubarb. By placing in the spring a protection about the plants they will make a rapid growth and you will get the extra price for early crop. A German told me that he bought some land on Long Island, about 30 acres, and put 24 of it under cultivation, employing 32 men, doing market gardening. He had a bank of gravel to the north of a strip of poor land upon which he put manure, then planted rhubarb, clearing up $1,500 on rhubarb alone last season. Use old barrels or boxes or kegs as a protection around the roots and you will be surprised at the difference in the growth.

Some say they cannot head lettuce. I have tried 19 varieties and they all head; if your lettuce doesn't head, you must have sowed the loose-leaf seed.

Corn. We sell the Golden Bantam. I used to pick the nubbins and have it cooked with the Evergreen and Country Gentleman and visitors at the house would wonder why the children picked for the little ears. They found out after they had tasted of it.

The moment we get one crop off we put another on the land. Therein lies our success, constant work. Our water tank holds 5,000 gallons; it takes 2½ gallons of kerosene to fill the tank. I don't care whether my neighbors wait for the rain to plant their vegetables out, I plant mine when I am ready to do it and get the benefit.

Early cauliflowers grow rapidly and we have a good market for them. On the 22d of June we shipped the first. New York is able to pay and will pay for them. We planted the seeds a little earlier to get the early market and big price.

Peas. The very early ones are not especially good. The best we can get is the Early Prolific. We are still hunting for a better variety. I try 7 or 8 new peas every year. Thomas Laxton is a wonderfully good one; they are a little more expensive, but they are worth the difference and the customers will pay it.

Beans. Here is an example of spraying. The first year we planted the yellow pod bean we were very anxious to get good results. They grew beautifully and the yield was going

to be good, when one morning I found every pod rusty. You ought to have seen me get after them. I wanted humus bad, yet I burned every one of them. We consulted and then planted some more right on top of the old hills where we pulled the first ones out. We watched the second crop come on—people said we must not spray until a few leaves were out. We waited until a few leaves were out and the rust came again. We planted the third crop, and as soon as the first sign of growth came through the dirt I just drowned them with Bordeaux. We didn't have one single sign of rust on one of the beans; they were absolutely perfect, and the seed all came out of the same bag. I sprayed three times and I felt that we had headed the rust off. Of course we don't know just what the result would have been if we had not sprayed. I kept the beans and sent them to the experiment station. I have planted them for the last three years and have had no rust on them, and the experiment station reports no rust. We sprayed but once after they began to blossom.

Lima beans. I never cared to break my back carrying poles for beans and twisting the vines so they could untwist again and then when the beans are eight or nine feet high and frost comes, having to lift the poles out in order to get the beans and then not finding more than a quarter of them ripe,—so we conceived the idea of allowing them to run on this wire fence and when they got to the height of the fence we clipped the vines. The result was we got a yield just exactly three times as great as raising them on poles. I figured it in this way: If you clip the ends off you keep the strength down below and get better pods; then by running on the fence you get good air and plenty of sunlight; while on the pole they make a solid mat of vines and half the beans can't grow or mature; they keep climbing and making bloom and the results are not satisfactory. In the fall we take up the fence, roll it and put it away until the next spring; the fence is just ordinary poultry wire, 4 feet high. I always put it running north and south so as to get plenty of light and sun on both sides.

Tomatoes. The earlier you plant your seeds the more money you get for your fruit. We use paper pots—the same ones we have used for three years. With this style of pot you can transplant without disturbing the roots; thus the growing goes right on. We have never had our tomatoes checked a bit. We ship no tomatoes that are not perfectly ripe and sound and every slice can be used. We put them in what is called a four-quart crate. When tomatoes were selling in New York as low as 25 and 15 cents a bushel I didn't know that we could get a right price for ours, but when I went in the city and saw the way the fruit was packed—a few good ones on top and soup in the bottom, I knew we could sell our crates. I left them at a store while I was out looking at the market, and when I returned I found the clerk had sold all I had brought in for $1.50 a crate of less than half a bushel. If I could have furnished them I might have sold a hundred crates a day at that price.

Potatoes. I buy the best seed I can get, it don't make any difference what the price is. If they were $7.50 a bushel and I couldn't afford a bushel, I would buy a quart and plant those and have enough the next year to do something with. If we give the potato a good chance to grow and not have it buck up against clods of earth, but grow in a seed bed, so they don't have to force their way through the chunks, we will have no trouble in getting good yields of fine potatoes. You must give the potato ground thorough cultivation; we use the disc cultivator. We don't have many little ones; when we do, we use them at home.

Carrots. We sow them in the double drills: if you use them before they are matured, the flavor will be much more delicate. There is a good market for this vegetable.

Baskets or Home Hampers. We make an assortment of vegetables, trying to pack 9 kinds in the hamper, for which we get $1.50 delivered. Our customers know they are getting fresh vegetables and we have no trouble in getting rid of all we pack. The hamper costs us 14 cents, and the express is 35 cents, netting us one dollar, we figure. We change the

contents as the different vegetables come on. We could dispose of everything we raise on the 18 acres in the home hampers if we would.

Melons. Montreal melons at $3.50 apiece, $36 a dozen wholesale! They raise them under glass, little cold frames; they have to keep the glass on throughout the early season. We raise melons and good ones, using soap boxes and bags, and they do well. What do we do to keep the blight off? It is a hard proposition, but we do it with Bordeaux mixture and keep our melon vines two weeks longer than our neighbors and then usually the blight gets us. In New Jersey, some use rotten fish, kerosene, or anything that stinks, because they say that bugs don't like bad smells. The blight is a different proposition; they say there is no cure. Bordeaux is a preventative. We begin to spray early; that is the secret of spraying; begin just as soon as your plant is up. We always use a combination of Bordeaux and arsenate of lead on cabbages and melons. We use that on fruit trees three or four times a season and have never seen any injury. We used lime and sulphur and that was all right. We have used Scalecide and that is all right. They both of them accomplish their purpose absolutely. I know that positively. If you follow directions I do not believe there can any injury come from Scalecide and I never heard of any from the use of Bordeaux. I have heard of serious injury to the apple from the use of Target brand of scale oil. I went down on the Peninsula and was told that it had absolutely killed orchards; so you mustn't use all miscible oils. Use some common sense in spraying with any mixture.

Water Melons. A mighty good crop; they have to be raised on the right kind of soil. Water melons, like corn, you must eat fresh, with the dew on. There are many fine melons; we don't find much difference in the taste, but there is a difference in the shipping quality. The Sweetheart is a fine melon, also the Kleckley Sweets.

Sea Kale. After you get your bed of it, like asparagus it will come up in the spring and absolutely break through

the frozen earth. When it shows itself spread the dirt over it, and the next time it comes up, cut it; you will find it the most delicate green. Cook it as you would asparagus or celery; it is delicious. We have raised it for four or five years; it is well worth trying; plant it from seed, and then you will have it for years to come.

Endive. There are many varieties of this vegetable. As it grows you must bring it together and tie with wisp of straw. It is a valuable plant, easily grown, and there is a good market for it.

Another new comer is the Venetian Squash. The meatiest and sweetest squash I have ever seen, a very rich yellow. It looks like a big acorn; the seed cavity is small and there is an abundance of thick meat.

Sweet Potatoes. These were hit by the frost and wilted down and I thought they were out of business. In between them I put extra tomato plants. Soon after the sweet potatoes sailed in and I never saw such growth in my life. The tomatoes also matured and I never saw two crops yield so much. It is a combination I never would have dreamed of, but it worked all right.

Cabbages. Lots of them. Long Island is a famous place to raise cabbages and there is always a good market for them. We are troubled with the cabbage worm and for it I use arsenate of lead; it sticks better than the paris green. We use it clear up to the end of the season, too. New York and Boston markets will tell you not to use any poison. It has been carefully tested and found to be true that if a man sits down, is a regular gourmand, and eats 200 cabbages, the poison left on the cabbages after being sprayed makes him just a trifle sick. I can't tell you the strength of the arsenate of lead we use; I think it is something like three pounds to 90 gallons of water.

Brussels Sprouts. We grow these to keep us busy. It is something we can do in the winter. We usually pick up to the fifteenth of February; this year we stopped in Janu-

ary. They bring us from 8 to 30 cents a quart; they usually run a quart to the plant. The city people are very fond of them and they will pay big prices for them.

There is always an enormous market for flowers and almost any woman likes to raise them.

There is also money in sheep. There is nothing that can or will clear up a field for you quicker than a flock of sheep. Try them.

Alfalfa. The reason I had a good crop was because the bacteria that alfalfa needs was there. I got it from an old alfalfa field. There are two other things necessary; in the first place your soil must be absolutely free from acidity. It must be sweet. Put on lime to help keep it sweet; then you must have humus; that is vegetable matter; then your alfalfa will grow all right. It makes the finest fodder of anything you can grow; cut it when it is green. The moment you see the first blossom on the alfalfa, cut it; that is the only way to make your crop a success, and by cutting it early you will get two more crops off the same land. Don't try to grow alfalfa unless your soil is thoroughly cultivated.

At 1.30 a short recess was taken for dinner.

AFTERNOON SESSION.

Owing to the very lengthy morning session it was 2.30 o'clock when the Society reassembled for the afternoon meeting.

President Gold called to order and announced that the first business of the afternoon according to the program was the election of officers.

Election of Officers.

PRESIDENT GOLD: We will have the report of the Committee on Nominations if they are ready to report.

STANCLIFF HALE: Mr. President and fellow members, your Committee would respectfully submit the following list of names as nominations for the various officers of this Society:

For President—Chas. L. Gold, of West Cornwall.
For Vice-President—E. Rogers, of Southington.
For Secretary—H. C. C. Miles, of Milford.
For Treasurer—Orrin Gilbert, of Middletown.
For County Vice-Presidents:
Hartford County—L. C. Root, of Farmington.
New Haven County—Norman S. Platt, of New Haven.
Fairfield County—Geo. A. Drew, of Greenwich.
Litchfield County—Chas. S. Phelps, of Canaan.
Middlesex County—Walter Fawthrop, of Cromwell.
Windham County—F. J. Taber, of South Windham.
New London County—E. Haley, of Mystic.
Tolland County—John R. Houston, of Mansfield.

PROF. GULLEY: Mr. President, I move that the report of the committee be accepted and adopted and that the Secretary be directed to cast one ballot for the list of officers as presented.

This motion was seconded and duly passed.

The Secretary then proceeded to cast the ballot and the following list of Officers of the Society was declared duly elected for the ensuing year:

President—CHARLES L. GOLD, of West Cornwall.
Vice-President—E. ROGERS, of Southington.
Secretary—H. C. C. MILES, of Milford.
Treasurer—ORRIN GILBERT, of Middletown.

County Vice-Presidents.

Hartford County—L. C. ROOT, Farmington.
New Haven County—NORMAN S. PLATT, New Haven.
Fairfield County—GEO. A. DREW, Greenwich.
Litchfield County—CHARLES S. PHELPS, Canaan.
Middlesex County—WALTER FAWTHROP, Cromwell.
Windham County—F. J. TABER, South Windham.
New London County—E. HALEY, Mystic.
Tolland County—JOHN R. HOUSTON, Mansfield.

Report of Special Committee on Fruit Exhibit.

The Special Committee appointed at an earlier session to judge the exhibit of fruit at this meeting presented the following report through Mr. Wilfrid Wheeler:

Considering the past years when fruit conditions were more or less abnormal, the exhibit of fruit is very creditable, particularly in the color of the same, which is far above the average.

The Baldwins, Ben Davis, Peck's Pleasant and Wagener are especially good. The dry season of the past year is largely responsible for this high color, as no sooty fungus was noticed.

The exhibit of apples from the Connecticut Agricultural College is exceptionally good and is one of the best educational features of the meeting.

Only two packages of apples were shown. One of fancy Baldwins in one-half bushel basket for nearby home market;

the other of Ben Davis in the regulation box for long distance shipping. One can of pickled peaches deserves mention as being a possible way of using up the unsalable small fruit.

The complete list of awards as made by the Committee will be found on another page.

It was voted to accept the report of the Committee and thank Mr. Wheeler and Mr. Farnsworth for their services.

Secretary Miles read an announcement of the coming meeting of the American Pomological Society to be held at St. Catherine's, P. Q., Canada, in the fall of 1909, with a request for the appointment of delegates from Connecticut.

On motion, it was voted that the President be authorized to appoint five delegates from this Society to that meeting.

MR. J. H. HALE: If we can use our influence I would suggest that we try to have the American society arrange to hold its meetings as late in September as possible. If the meeting is held earlier in the season it will be difficult for many of us to attend on account of the harvesting of our crops.

President Gold subsequently announced the appointment of the following delegates:

J. H. Hale, C. E. Lyman, N. S. Platt, Prof. A. G. Gulley, H. C. C. Miles.

Resolutions.

The following resolution relating to the bill before Congress known as the "Insecticide bill," the object of which is to regulate the purity of insecticides, was introduced by Mr. J. Norris Barnes:—

Whereas, the use of the various articles prepared and known as "Insecticides" has become of prime importance in protecting our forests, parks, orchards, gardens, and agricultural crops in general from the ravages of insects, and

Whereas, it is equally important that the purity and strength of these insecticides should be dependable and unquestioned, and

Whereas, the Executive Committee of the Manufacturers, Entomologists, and Agricultural Chemists' Association have introduced into the Congress of the United States an insecticide bill, having for its object the regulation and guaranteeing quality of all insecticide articles manufactured or imported into the United States, said bill in the Senate being known as bill No. 6515, and in House of Representatives as bill H. R. No. 21318; said bill in the Senate being in the hands of the Agricultural Committee, and in the House said bill being in the hands of Committee on Inter-state and Foreign Commerce;

Therefore, be it Resolved, that we, the members of the Connecticut Pomological Society, in annual meeting assembled, do hereby desire to heartily express our appreciation of the objects sought to be accomplished by this said bill, and do earnestly desire that same be enacted into law.

Be it Resolved, that copies of this resolution be sent by the Secretary of this Society to the Senate Committee on Agriculture and also to the House Committee on Inter-state and Foreign Commerce and Committee on Agriculture.

Dr. Britton spoke in favor of the measure and seconded the adoption of the above resolution.

On vote the resolution was adopted.

A resolution in memory of Dr. Gurdon W. Russell, whose death was announced at the morning session, was prepared by Mr. Geo. A. Parker and presented by Mr. Hale, as follows:

MR. J. H. HALE: In behalf of Mr. Parker, Superintendent of Parks of Hartford, and a longtime member of this Society, I wish to present the following resolution, as he is not able to be here at this time:

"*Whereas*, this Society has learned with the greatest regret of the passing from our midst of our honored and much loved member, Dr. Gurdon W. Russell; and

Whereas, the call to go forward and beyond came yesterday morning just before this convention was called together, and the end came quietly without pain, without a struggle, just like slipping away, drawing one breath here and the next hereafter,

To him, it is all gain; to us, it means the loss of his kindly words and inspiring presence; and yet it is not all loss even to us, for we will always feel that there awaits us in the more beautiful gardens, and the more fruitful orchards of our Heavenly Father, one who was transplanted from our midst in the fulness and ripeness of his earthly life, to grow on and on in the hereafter, and be waiting to welcome and instruct us there, even as he has welcomed and instructed us here.

Resolved, that as an expression of our sorrow, we offer this resolution as a testimonial of his long years of interest in, and service to, the horticulture of our State, and of this Society.

Resolved, further, that a committee of three be appointed by our President, to draft such memorials as will tell of his connection and service to this Society; that it may be printed in our Annual Report and filed in our archives, that those that follow us may not forget."

MR. HALE: Probably 40 years ago, when my brother and I started in small fruit growing on the home farm at Glastonbury, I well remember an elderly man driving into the yard one day and introducing himself as Doctor Russell, a lover of fruits and flowers. He had heard of our starting the work and wanted to call and see us. We had a delightful visit. And many times since has he called on us. He was one of the best informed old-time pomologists in our State. Not in a professional way was he a fruit grower, but as a side line of his profession. His passing out at the age of almost a hundred, yesterday, seems a distinct loss; he was just as actively interested to the last in the work of the fruit

growers. It seems fitting at this time that we should pay tribute to Dr. Russell in this manner.

MR. C. H. WILEY: I would like to second that resolution, and say a word in connection with it. About the time Mr. Hale speaks of, Dr. Russell was interested in the Horticultural Society of Hartford and always came into our meetings; he was a genial, kindly man, and his sugggestions and words will be missed by all with whom he came in contact.

The resolutions were then unanimously passed by a rising vote.

The following committee was subsequently appointed to prepare a memorial to Dr. Russell: J. H. Hale, G. A. Parker, C. H. Wiley.

DR. W. E. BRITTON: Mr. President, a word in regard to the question of the control of insect pests and other enemies of our orchards and fruit crops.

Following the governors' conference in Boston in the fall, the secretaries of the boards of agriculture and State nursery inspectors of the New England States came together to consider the development of fruit growing in New England, following the address by Professor Craig, and the control of insect pests came up. It was voted to make our nursery laws as strict as possible, and also to make the requirements of the nursery stock shipped from one State to another as small and at the same time as effective as possible. Some of you know that for some years there has been on foot an attempt to secure a national measure whereby the laws of the United States might be more uniform, but this has failed absolutely, as I understand. Consequently a nurseryman shipping stock from one State to another must first learn about the laws prevailing in that State, and as they are different in nearly all States he must have on hand at all times a list of the various State laws. The only thing to do is for the various States to make their laws as nearly uniform as possible. During the last month or six weeks, the inspectors of

New York State have discovered in young fruit stock brought from France something like 1,800 nests of the brown tail moth containing living caterpillars. These they discovered only by chance. Only for their discovery and destruction they might have been distributed throughout New York and other States. At the present time there is no provision for the inspection of nursery stock at the port of entry. This should be a national provision. The different State officials have no authority to inspect the stock that is brought into the custom house, and it is only after the stock arrives at its destination that it can be examined. Our law at the present time is weak in that respect. At a meeting of the nurserymen in Baltimore during December they drew up roughly a law which is an attempt at making the matter more uniform. I have a copy of the same. It has some features which I think desirable to place on our statute books. I would present the same at this time and make a motion that the whole matter be referred to our legislative committee, with power to act, if they see fit.

PROFESSOR GULLEY: I have no doubt that the matter is very desirable. I certainly would support the motion and am in favor of having the resolution passed so that action be taken as far as possible in line with other States.

The motion to refer the matter to the Committee on Legislation was put to vote and unanimously passed.

PRESIDENT GOLD: We are now to have an address by a gentleman from New Jersey who was unable to be present yesterday, when he was scheduled to speak. I am glad to introduce to you Mr. Albert T. Repp, who will tell us of "Methods and Results on a Successful New Jersey Fruit Farm."

Methods and Results on a Successful New Jersey Fruit Farm.

By Albert T. Repp, Glassboro, N. J.

The conditions in different localities vary so much that we find methods must vary to suit the locality; therefore the methods that would bring successful results in New Jersey would not apply perhaps in this State at all. On August the 18th last, the New Jersey Horticultural Society met at our fruit farm. Our friend and editor Mr. Collingwood, on approaching the farm with some friends in a carriage, asked the question, "What slovenish-looking farm is this?" and was astonished to hear the reply, "This is the Repp farm." In his address of the day he said that at first sight he was amazed at the weeds grown by the Repps. So, in view of the fact, I am equally as much amazed that I should be asked to address this meeting on methods used in New Jersey. But as I said in the beginning, as localities differ, to obtain results the methods must vary. So we obtain methods from different localities and we apply them to our farm and many times find them practical and sometimes otherwise, always measuring them of course by the results. So whatever remarks I shall make I must ask that you will not consider them as practical in your State, until you have given them some test.

First, in regard to planting orchards, we look much to the selection of trees; we prefer good two-year trees for planting. We plant them 20 feet apart each way, with the view of cutting some of them out as they grow too large for the space. We plant corn between for a few years, using plenty of fertilizer so as not to draw too much from the tree, and at the same time secure good cultivation. Second, the work of pruning engages our attention; not that we prune the young tree, but we watch its growth and prepare to select the coming tree from it. The first year we do not prune at all. We think the future of the tree and its productiveness depend on the careful pruning of the early years of its life. We have learned by experience that to refrain

from pruning the tree early in life will thicken the top and make much better chance for selecting the future top for the tree, and at the same time develop the trunk rather than the top. This may be contrary to the teachings of our forefathers, but it is the result of careful observation.

The fertilizer we use is 2½ per cent. Ammonia, 8 per cent. Phosphoric Acid, and 10 per cent. Potash. This we broadcast over the ground before plowing in the spring at the rate of 2,000 lbs. per acre. We use an abundance of fertilizer on our apple trees, as we want to grow fruit spurs and wood the same year, and as there is not enough natural plant food in the ground for this, we must substitute artificial plant food. We do not use cover crops, as we have tried them and they did not prove satisfactory to us.

We plow all of our orchards in the spring and keep up cultivation until the first of July, sometimes as often as once a week. The most of the growth of the trees is over by this time in our section, then we let the weeds grow as they will from this time on. Mr. Collingwood was mistaken in his article when he said we do not believe in humus, because we depend on the weeds for humus. We have used this method for a number of years and found it very successful. We begin spraying our young apple trees as soon as the fruit makes its appearance; the first spraying on the larger trees we begin just before the buds open. We use 3 lbs. sulphate copper, 10 lbs. lime, ½ lb. Paris green, to 50 gallons water. The second spraying is made as soon as the blossoms drop. We use arsenate of lead and we then alternate with Bordeaux mixture to the end of the season, which is about the first of August. On the late varieties, because of trouble with the coddling moth being so prevalent in our section, we are compelled to spray very late. We have one trouble we cannot explain and thus far we have not found any professional men to explain it; it is a rot that appears in the blossom end of the apple and very soon destroys the fruit.

The market question in our section is an easy problem, as we are convenient to both the New York and Philadelphia markets when we have the goods. The growing and

marketing on our farm is divided in three sections. I have charge of the fruit growing, or, in other words, producing the goods, and my brother, Charles Repp, attends to the cold storage where the fruit is kept awaiting the time for marketing, and another brother, Jos. P. Repp, has the store in Philadelphia, where the fruit is sold at 154 Dock street. Our specialties are apples, pears and grapes.

At the conclusion of Mr. Repp's very practical talk, the subject was continued in the following

Discussion.

Mr. Winsor: Why do you use an excess of lime in spraying?

Mr. Repp: We find it to advantage; the spray sticks better to our trees.

Mr. Farnsworth: In regard to pruning trees when planting. Do you mean you don't prune when you plant?

Mr. Repp: No, simply set the tree out; we use the two-year-old trees; we find that pruning in early life makes the tree smaller at ten years old and decidedly different in shape. It is all contrary to the teachings of our forefathers, I know.

A Member: When do you prune?

Mr. Repp: The second year, and then when our trees are five or six years old they begin to prune themselves. They open up and don't need so much thinning. The way we prune is very satisfactory to us.

Mr. Henry: If you had a peach tree six feet high, such as grow down south, what would you do with it?

Mr. Repp: I can't say. I was talking about apples; our specialty is apples.

Mr. Platt: What variety of apples?

Mr. Repp: Mostly Winesaps. We have the Red Astrachan, Williams' Early, Maiden Blush, and Sutton. We have 450 acres and are setting out more and more. We have 13,000 Winesaps; that is our specialty; it is a great export apple.

Prof. Gulley: Do you use the "filler system" in planting?

MR. REPP: Yes, sir.

PROF. GULLEY: Have you got to the thinning part yet—removing the fillers?

MR. REPP: No; we have not got to that yet. When we get there I have it planned to tell my men what to do and then go away. When I come back the trees will be gone.

PROF. GULLEY: Are you pruning those you expect to take out?

MR. REPP: Yes; they are all treated alike and are growing very nicely.

MR. PLATT: Have you had the experience of your trees blossoming very full, and then failing to set much of a crop? What causes the failure of crop?

MR. REPP: I think an excess of nitrogen. You give an excess application of barnyard manure to trees and they will not bear as well as if you used commercial fertilizer. The blossoms seem to blast.

PRESIDENT GOLD: I think that is right. I use very little commercial fertilizer; we have a good deal of stable manure, and I have had a good deal of trouble with young orchards not bearing; they grow good wood, but don't yield any sort of a crop of fruit. I have trimmed the trees and done everything I knew of and yet fail to get apples from the young trees. When they get to be 8 or 10 years old they bear some, but run to wood and foliage mostly.

A MEMBER: What do you use for the San Jose scale?

MR. REPP: We use crude oil for the scale and have used it for 10 years. We have only changed once—that was to lime and sulphur, but went back to the oil.

A MEMBER: I should like to hear from Mr. Repp regarding his methods of thinning, picking, grading, and packing of his fruit.

MR. REPP: The summer apples we pick just the large ones at first; we go over the trees several times, the Maiden Blush as high as six times. Our fruit is shipped to the Philadelphia market, the baskets to be paid for by the consumer. If you sell apples in the Philadelphia market the man

who buys them pays for the baskets. No other market in the United States does it. They are graded in three or four grades; one man does that work.

MR. PLATT: Do you take any special pains to prevent your apple trees from losing their leaves during the summer?

MR. REPP: The Bordeaux mixture keeps the foliage good if it is applied several times.

A MEMBER: What would happen if you didn't use it?

MR. REPP: The leaves would come off.

The following question from the program list was called for:

QUESTION: What are the comparative merits of lime-sulphur mixture and the soluble and miscible oils?

MR. REPP: I know nothing about that; we have only used lime and sulphur twice, eight years and two years ago. I have never investigated the other oils; we have always used the crude oil and it has been satisfactory. I would say this, that we had a lot of trouble with the lime and sulphur; it very nearly ruined us; the scale almost ate us up those years.

A MEMBER: Have you ever injured any of your trees with crude oil?

MR. REPP: I never lost a tree by the continued use of the oil.

A MEMBER: What kind of oil do you use?

MR. REPP: It is a standard oil—the Standard Oil Company sells it; it costs, I think, 11 cents now.

A MEMBER: How is that applied?

MR. REPP: With a Deming pump; small nozzle and very high pressure.

A MEMBER: Do you heat your oil?

MR. REPP: We heat the oil with live steam to about 110 or 120 degrees and then put it on with high pressure when there is a good wind.

A MEMBER: That is a hard question. I have put it on when the thermometer was 15 and 20 degrees below zero. If you heat it you can apply it all right; I don't see as there is

any difficulty in putting it on. Some try to put on all they can; that is the trouble; we try to see how little we can put on. I have seen instances where it has been applied too freely. I could take a spoon and dip vaseline out of the little corners. No wonder such an application or continued application killed trees. It couldn't help it.

MR. ROGERS: I have never had any bad effect from either. I have always had good results from lime and sulphur, and I prefer it for peach trees to oil, but I have had good luck with both lime and sulphur and the oil.

PRESIDENT GOLD to Mr. Rogers: Didn't the oil kill the scale on the peach trees?

MR. ROGERS: I didn't use the oil on the peach trees; I have always used lime and sulphur on peach and the oil on apple trees. I am surely in favor of oil for apple trees in preference to the lime and sulphur. It is easier to apply and you can apply it at most any time, and the lime and sulphur you have to boil and prepare it at a certain time, and use it, or we do, in the spring.

A MEMBER: Why don't you use the oil on peach trees?

MR. ROGERS: Because it has little effect as a fungicide. I have always used lime and sulphur on peach trees with such good success; it cleans the tree up in such good shape that I have always used it. I have seen oil used on peach trees and didn't like the looks of it.

PROF. JARVIS: I don't know as it is necessary to take up much time on this matter, but it may be of interest to know that a bulletin has just been issued by the Storrs Experiment Station on the subject of home-made and prepared miscible or soluble oils. This bulletin reports the experiences of the Experiment Station for several years on the subject and use of various commercial and home-made miscible oils. If you have not read this bulletin, if you will send a request to the Station, a copy will be sent you.

There are a few more matters I woud like to speak of. In discussing this question yesterday the speaker, Professor Surface, made some statements which he said to-day he was

sorry he had made, to give the impression that the oils are uniformly injurious and that it is not safe to use them. In my experience I have never seen any injurious effect from the use of oils either on peach, apple, plum or pear trees, and as a pretty good test of the action on young trees, pears, plums and apples and currant bushes, we dipped them in soluble oil and held them under the liquid for one minute, roots, tops and all, and no injury whatever was observed in the trees in any respect. This was a home-made preparation and very similar to a great many of the newer preparations that are appearing on the market. The one thing we must remember and keep always in mind in using the soluble oils, we must first test them to see if they will mix with water. I do not believe there is any danger with a 1 to 15 solution of the well-known soluble oils on the market on any kind of a tree. I have given it a severe test, spraying with crude petroleum. Why should we expect ill results from a preparation containing not more than 6 per cent. of petroleum? In our operations with one of our orchards the trees have been sprayed for 6 years with "Scalecide" and have shown no ill effects.

MR. ROGERS to Prof. Jarvis: Have you known of peach trees having been sprayed for that length of time with oil being all right?

PROFESSOR JARVIS: I do not know about any that have been sprayed for more than three years. But I cannot see where there can be any harm; there is nothing in the oil to accumulate and cause ill effects; when the rains come they wash the oil away. I repeat, I can think of no reason why oil sprays should harm any trees, if properly used.

MEMBER: How long should soluble oils be applied to trees to be effective before the rain washes it off?

PROF. JARVIS: I believe the oil should be on the trees from 24 to 36 hours, and probably longer, to be effective. If rain should come and wash the spray off within 24 hours after application, I would advise a second spraying. The oil is thoroughly soluble and as the rain comes it becomes a

part of the general solution and runs off the tree and has probably not had time to kill insect life.

DR. BRITTON: I should expect the results would be much better if no rain came within two or three days, but it is generally supposed that miscible oils kill the scale much more quickly than lime and sulphur. There is one point which should be borne in mind, and that is this: most of the packages now contain directions for handling contents, but the contents in each original package, whether to make a single gallon or a barrel, should be mixed very thoroughly before any is taken out or diluted with water. I have seen injury caused to trees because the man having in charge the work simply went and dipped out a vessel of liquid from off the top of the barrel without stirring it. The quantity he took would not mix with water, and the consequence was that nearly every bud on the tree to which the liquid was applied, was killed, and the tree did not put forth leaves until along the latter part of June, and the buds were all killed. There is where a great many people make the mistake and a great deal of injury is done. The contents of the packages need to be thoroughly mixed and stirred before being used and it needs to be noticed whether it mixes with water or not. It is also said that some of the soluble oils are placed in packages that the wood absorbs some of the alkali, and so it is necessary to add something to it before using. I believe if the miscible oils are handled properly and carefully, there need be no injury to any trees in Connecticut. However, if a man has been spraying his peach orchard with lime and sulphur and is satisfied with it, I should advise him to continue its use. I believe it is such an excellent fungicide that we should not lose sight of it in our great desire to get something that is easy to apply.

MR. FARNSWORTH: I would like to ask Professor Jarvis if he has made observations in regard to the fungicidal properties of the oil preparations.

PROFESSOR JARVIS: Last year, in our experiments at Middlefield, we sprayed about a thousand trees with oil. In an adjoining lot there was another orchard which was

sprayed with lime and sulphur, and another block very near by that was not sprayed at all. The unsprayed block was very thoroughly affected with leaf curl and a great many leaves dropped. In both blocks sprayed there was no dropping of leaves. That was a surprise to me, because I did not know of, and had not looked for, fungicidal properties in the oil, and I am not satisfied now that there are any, but I feel there must be some value there, and think that is still another question that needs to be determined.

PROFESSOR SURFACE: I would like to take this opportunity to make my views clear concerning the oil and the lime and sulphur washes. It appears, unfortunately, that my expressions were misunderstood to make the whole sweeping condemnation of oils. Such impression I did not mean to convey by any manner of means. What I did mean, and do yet, is that there is danger to trees from the use of oil. I did not explain at the time the force of this danger, but my friend Dr. Britton has explained this in part. Whatever may be the cause, the fact remains, occasionally there is such injury. However, from my observation and from the reports that have been brought to me, there are certainly very grave and disastrous results, according to the kinds of oils used. I came here expecting to render service to the fruit growers, not to "knock" any manufacturer or agent, and I feel it my duty to give out this word of warning,—that if in one case in a hundred a man may injure his trees, it will be the hundredth man who suffers and the loss becomes severe. In naming the oils that injure, the "Target brand" I mention first. I have known many cases of injury by the use of that, and next to that, from my observation, would perhaps be the use of crude petroleum, and I can name several men who have suffered from the use of these oils. I have a record of a man using Target brand who injured a thousand trees. The next in line is the home-made soluble oils. The soluble oils are not usually uniformly made. Next would come "Scalecide" and "Thompson's soluble oil." Since I spoke yesterday, I have received these voluntary reports here in this place of injuries by oils to fruit trees. I am not con-

demning the oils, but simply stating facts. This must be borne in mind when oils are used, however: never apply an oil that is not thoroughly emulsified or mixed with water. I am not here in the interest of any lime and sulphur firm, nor am I here to speak against the interest of any oil firm, but only to say, let us be sure the oils are properly emulsified. If they are not, then there is liable to be danger.

QUESTION No. 1. How can we handle our apples to secure most profitable returns? was next taken up and the following very interesting paper was read by Mr. Winsor, in answer to the same.

How Can We Handle Our Apples to Secure the Most Profitable Returns?

By THOMAS K. WINSOR, Greenville, R. I.

The growing of apples for market is a subject that is very interesting to me. Because the business, if properly managed, is profitable. Because we are brought in closer touch with nature, and the finer sensibilities of man are brought out. The successful growing of apples means the intelligent application of labor and material, also well defined plans, resulting in good crops of fine fruit.

The growing of orchard fruits is one of the most lucrative branches of agriculture.

We are living in a time of progress, in the fruit growing industry, and one of the results of this progress is we are growing apples of large size, beautiful in color and delicious in flavor, for the table, instead of the old varieties which were intended for the cider mill only. To be brief, I will not try to tell you how to grow fancy apples, but simply to give you an idea of how I manage my own orchards and fruit crops.

The farm on which I now live is my birthplace, and has been producing apples of some kind for over 100 years.

About four years ago, I cut down an apple orchard of

five acres; the trunks of some of these trees were nearly three feet in diameter, and others were just a shell with the heart rotted out. This piece of land is being prepared for a new setting of trees; I remove the stumps and rocks with dynamite.

My oldest orchard consists of 100 Greenings and Baldwins about 75 years of age. I keep this orchard in sod most of the time, because it is so stony; I top-dress it with chemicals, spray it thoroughly, and get fair crops of apples.

My next orchard in age consists of 150 R. I. Greenings, 25 Baldwins, and 10 Roxbury Russets, making a total of 185 trees, and was set out in 1861 by my uncle, who, after beginning this good work, enlisted in the army. For a few years it had a hard struggle, until my father came into possession of it, and for a number of years this orchard bore big crops of fine fruit. In the meantime other orchards were being set out, and dairying and the raising of vegetables for market were well established on the farm. And this orchard was sadly neglected. At the time that I came into possession of the farm, which was in the spring of 1903, this orchard was bearing small crops of inferior fruit, the trees were full of dead limbs, and an excess of live ones. The ground was a tough sod, and the orchard had a very sickly appearance. I trimmed out all dead limbs, and some live ones, scraped off all loose bark, plowed, applied nitrate of soda, muriate of potash, and ground bone, then harrowed repeatedly, and sprayed with Bordeaux and poison, and harrowed some more. The change that came over that orchard was simply wonderful; how those trees grew! How the foliage and bark put on a good healthy color. And it seemed to me as those large, dark green leaves swayed back and forth, they did it in appreciation of the care and kindness I had given them. Each year since 1903, this orchard has received either wood ashes or bone or muriate of potash or lime. And each year but two it has received cultivation. And it receives a thorough spraying with Bordeaux and poison and lime and sulphur annually.

So much for the methods and labor of reviving an old orchard that was dying, as compared with one that is vigorous, healthy and beautiful.

Now for the returns for my labor. In the fall of 1903, I harvested 200 barrels of good apples. This crop was the smallest, and poorest, I have received since that date; 1904, 300 barrels; 1905, 250 barrels; 1906, 550 barrels; 1907, 250 barrels; 1908, 700 barrels. No doubt you all remember the wretched apple market we had during the winter of 1907-1908. Two hundred barrels of the 250 which I harvested in the fall of 1907, I sold for $5.00 per barrel, or for $1,000 for the 200 barrels.

I have just begun to sell No. 2 fruit for $4.50 to $5.00 per barrel from 1908 crop. If the No. 2 sells for $4.50, the No. 1 may taste like money.

My next orchard consists of 200 Baldwins, set in 1881. It has received my personal care for 20 years, and is receiving plenty of pruning, spraying and cultivation and feeding, and is giving me from 300 to 1,000 barrels of apples annually.

My next orchard in age is 16 years old this spring, and consists of 200 Baldwins, 30 Greenings and 35 Gravensteins. In 1907 I harvested 800 barrels fancy Baldwins (besides many boxes of Gravensteins) which sold for from $4.25 to $6.50 per barrel, while more common grades sold for $1.50 to $3.00. This is the third crop I have received from this orchard.

Next in age I have 150 Greenings, 200 Baldwins, 100 set 6 years ago. These trees are inter-set with peach, and receive clean cultivation. Besides these I have 130 trees of Early Williams, Red Astrachans, Porters, and Gravensteins, most of which are bearing. These are nice varieties for summer and fall marketing. The figures that I have given in this paper are from actual records and it is no fairy tale.

Harvesting.

My farm is located 8½ miles from a cold storage warehouse. My apples are picked into burlap lined, drop handle, half bushel baskets. They are poured into a running

or sorting table, 8 feet long, 5 feet wide at the back. It runs to a point, like the bow of a boat, is 8 inches deep, with a bottom made of 1½ inch slats, half inch apart, and is built on an axle and pair of wheels, so that it pitches toward the small end, or outlet, which will stand about 8 inches above an apple barrel. Burlap is fastened to the small end and is let down into the barrel to prevent bruising the fruit. From this arrangement the apples are sorted, immediately packed and headed, and are carted to cold storage as fast as picked. By the above methods I am enabled to keep my apples until the following spring and summer, and to have apples to sell, when my friends have none and I am able to supply a high quality apple to the fancy trade.

No doubt you will notice that I have not mentioned setting, pruning, mixing and applying the spraying materials and fertilizers and tillage, although each of these operations are of vital importance, and are worthy of special consideration, yet I cannot dwell upon them, for I have to be brief.

Occasionally I receive circulars from Washington and Oregon, advertising their ideal apple lands, at fabulous prices, and soliciting capital from the east, to develop the apple industry of the Northwest. There is no need of this. There is no section of the Western States so densely populated as Southern New England. And the wages per capita received exceeds those paid in any part of our country. We can stay right here and grow fancy apples, right in the midst of this fancy market, and keep in touch with our customers, thus avoiding heavy freight charges and deceptive commissions, and dishonesty at long range; by so doing we shall keep thousands of dollars here in New England which are now going West.

Although it is a pleasure for me to read this paper to you, I would that this hall were filled with boys and girls from our New England farms. I would like to tell them the folly of going to the cities to enter the shops and counting-room, when there are fortunes in our New England hills awaiting the youth, for its development. While at work we

are not surrounded by brick walls, neither do we have to tramp on cobble stones when going to dinner; instead, we have the pure air to breathe, a carpet of green to walk upon, and a canopy of blue over our heads; and the songs of the birds to cheer us. What vocation furnishes pleasanter surroundings and associations than these?

Discussion.

Question: How do you grade the No. 2's for size?

Mr. Winsor: 2½ to 3 inches, the maximum size.

Question: What are your No. 1's?

Mr. Winsor: They are 3 to 4 inches for Greenings; the Baldwins not quite as large. I had an old Greening orchard in a badly neglected condition when it came into my hands. By good care it is now in fine condition and it is wonderful to see the change.

Question: Did you cut back the tops of the Greenings any or leave them their original height?

Mr. Winsor: They never were very tall, but I make it a practice to keep the top down; on most of our apple trees we pick the fruit on short ladders. I think our longest ladder is 18 feet. In my young orchard we can pick with a 12-foot ladder. From above, the tops of the trees look as though they had been mowed; they are as smooth as a lawn.

Question: Do the tops get tremendously thick?

Mr. Winsor: No, sir; if so, I take them out. We must have plenty of sunshine; that is one of the elements for making color.

Question: You heard Mr. Repp's remarks about not trimming trees when they are young. What do you say about that?

Mr. Winsor: I believe in pruning. I begin to trim them as soon as they are set.

MR. WHEELER: I set about a thousand pear trees last spring and did not touch the trees as to trimming and didn't lose a tree. In another place I set 300 apples and pruned them; I lost perhaps about 50 out of the lot. We had a very dry season. I don't know whether that had anything to do with it or not. The pear trees were planted in dry soil. I have not tested the question enough yet to know whether there is anything in it.

A MEMBER: In regard to this cutting back of apple trees, I have a little orchard of 185 trees that were set six years next spring. There are a few Gravensteins, say 25, about the same of the Wealthy, and the rest are Baldwins. The land was a pasture where there was pine wood growing. We cleaned it off and got it so we could plow it and dig it up some. The trees are doing fine. I cut them back. I wanted them down low, so I headed them low and when some of them had grown branches four feet high I would cut them off and pretty soon that would happen again, and on all these tall limbs there were no fruit buds; all they did was to climb straight into the air. We have heard Hitchings say it is wrong to cut them, but to let them grow. Yet I cut them off and this year scarcely any of them have grown 2 feet; they are looking fine and you will find there will be fruit on them soon. This last year I had a few Baldwins on my five-year-old trees.

PRESIDENT GOLD: What about their bearing?

A MEMBER: As soon as they begin to bear that will take their strength, or some of it, and will stop that growing of tall shoots. Whenever I find limbs that are interfering with each other, I cut them out, but leave the others.

Discussion of questions on the program list occupied the remainder of the afternoon until the closing hour.

QUESTION NO. 7: Has basic slag been used with satisfactory results?

MR. REPP: I have had no experience along that line, but at the last meeting of our society at Trenton I asked Pro-

fessor Voorhees if I could get something to give color to apples. I said I could grow the size all right, but that we were off on color. He wrote me a letter, in which he said: "It has occurred to me that instead of using the sulphate of iron, as suggested to you in Trenton, you might use the basic slag phosphate, which contains a large percentage of oxide of iron, and which also contains phosphoric acid in good form and considerable free lime. This material may be purchased of the Coe-Mortimer Co., 24-26 Stone Street, New York City. An application of 400 to 500 pounds per acre would be, I think, sufficient for your purpose." I have not used it at all as yet.

PRESIDENT GOLD: Has anyone in the audience had any experience in the use of basic slag?

MR. DREW: I have been using basic slag at the rate of 500 pounds to the acre on old orchards for two or three years and have had remarkable results, not only in helping the color of fruit, but in the production of fruit buds. I think in connection with sulphate of potash it is the best thing I know of.

A MEMBER: How about the color?

MR. DREW: I think it has helped it greatly, although the land I used it on was a rather wet clay soil, where naturally you would not get as highly colored fruit as on gravelly soil.

A MEMBER: Do you think iron as fertilizer is of any value whatever?

MR. DREW: I could not say as to that. I think lime and phosphoric acid helps out greatly. Perhaps the free lime has not been emphasized enough. I am sure it is a fine thing.

MR. IVES: Does Mr. Drew think there is any advantage in using any form of potash? I have always used a high grade of sulphate of potash.

MR. DREW: For those reasons you might as well buy your sulphate of potash in more concentrated form, in smaller

quantities. I think all who are interested in fruit growing should be careful to save their lime. The good effects of the use of lime in fruit growing I believe have not been emphasized enough.

QUESTION No. 6: What should be done to educate the consumer as to the good quality of apples?

N. S. PLATT: I think we had better follow the custom of calling for good apples everywhere and insist upon getting them. I know of no better way to educate the public to the good quality of apples. We are not very proficient in that work and we have a good many things to study and learn. I know when Gravensteins are in the market people will buy them in preference to anything else. They will learn the other varieties slowly if we will put them on the market. Most of our apples don't go far from the place where they grow; they are marketed close by.

QUESTION No. 18: Are bees a good thing on a fruit farm; how many colonies should a beginner try to care for?

PRESIDENT GOLD: I understand there is a good deal of complaint of honey bees injuring fruit when it is ripe. Bee men have told us repeatedly that the bees will never sting sound fruit. Has anyone here anything to tell on this question?

MR. FENN: The honey bee can only suck from a puncture that has been made by some other insect.

MR. WHEELER: A few years ago we raised grapes and the bees sometimes came and sucked the juice of the grapes when the fruit had cracked. I think bees are a great advantage on a farm, inasmuch as they distribute the pollen of small fruits. I would advise a person who has never had any experience with them to have but one colony to start with. If you have success with that one then you can increase the number, if you desire. In some places there are so many bees kept they cannot gather sufficient honey to feed themselves, and they have to be fed otherwise.

PRESIDENT GOLD: I agree with Mr. Wheeler's suggestions, and think the ideas good, although I have never kept bees.

QUESTION No. 5: Have the prepared lime-sulphur washes now on the market proved satisfactory and economical?

MR. FARNSWORTH, of Ohio: We have perhaps the best appliance for preparing the wash in our State and have been using it for a good many years. For the last two or three years we have been spraying in a smaller way and have been using the prepared mixtures. This last year, owing to the fact that one of the factories was located near us, we did not fire up our own plant at all, the cost being about the same, and we considered we were saving our labor and time, and then the prepared mixture is more easily managed and more uniform. I have been in the factory during the preparation of the mixture and I know that every tankfull is tested before being sent out, and if it varies from the standard they will either reinforce it or reduce it. We have always been successful in the use of lime and sulphur and shall use it again this year.

QUESTION No. 10: How can we cheapen the cost of harvesting apples?

MR. WINSOR: I don't know of any way better than that I mentioned in my paper. In some parts of the country they pay men so much a barrel, but I prefer to pay my men by the day and have the fruit handled more carefully.

QUESTION No. 13: The best blackberry for general market?

MR. WHEELER: The Snyder is the best shipping berry we have. The only trouble with it is that it turns red if you don't pick it just right.

The special committee appointed to examine the exhibition of implements and fruit growers' supplies presented its report. (Complete report will be found on page 174).

President Gold announced the appointment of the following committee on Publicity: Stancliff Hale, Glastonbury; A. T. Henry, Wallingford, and Ellicott D. Curtis, Litchfield. Also the full list of standing committees for the year was named.

At quarter-past four, the program having been practically finished and no further business appearing, a motion to adjourn was made and carried and President Gold declared the 18th Annual meeting closed.

Many of the members left to take early trains home, while others remained for a last look at the exhibits and to talk over the events of the great meeting, which all agreed had been the most lively, interesting and successful ever held by the Connecticut Pomological Society.

Report of the Special Committee on Fruit Exhibit, with List of Awards.

CLASS II.

BEST COLLECTION FIVE VARIETIES MARKET APPLES.

First Premium to E. M. Ives, Meriden $2.00

CLASS III.

BEST COLLECTION FIVE VARIETIES DESSERT APPLES.

First Premium to E. M. Ives, Meriden 2.00

CLASS IV.

BEST SINGLE PLATES APPLES.

Baldwin.

First Premium to E. M. Ives ..... .50
Second Premium to W. A. Stocking & Sons, Simsbury ..... .25

Rhode Island Greening.

First Premium to E. E. Brown, Pomfret Center ..... .50
Second Premium to E. M. Ives ..... .25

McIntosh.

First Premium to A. A. Moses, Unionville ..... .50

Wagener.

First Premium to A. A. Moses ..... .50
Second Premium to E. E. Brown ..... .25

Roxbury Russett.

First Premium to G. A. Drew, Greenwich ..... .50
Second Premium to E. M. Ives ..... .25

Ben Davis.

First Premium to H. E. Savage Sons, Berlin ..... .50
Second Premium to R. F. Underwood, Easthampton, Mass. ... .25

Westfield.

First Premium to F. D. Rogers, Munson, Mass. ..... .50
Second Premium to E. M. Ives ..... .25

Congress.

First Premium to F. D. Rogers ..... .50

Stark.

First Premium to Dennis Fenn, Milford ..... .50

Pearmain.

First Premium to F. D. Rogers ..... .50

Peck's Pleasant.

First Premium to E. E .Brown ..... .50
Second Premium to E. M. Ives ..... .25

Golden Russett.

First Premium to E. M. Ives ..... .50

King.

First Premium to E. E. Brown ..... .50
Second Premium to W. T. Coe & Son, Northford ..... .25

Northern Spy.

First Premium to E. E. Brown ..... .50
Second Premium to W. T. Coe & Son ..... .25

Fallawater.

First Premium to E. M. Ives ..... .50

Mann.

First Premium to A. J. Clark, Durham ..... .50
Second Premium to C. L. Clark, Durham ..... .25

CLASS V.

BEST SINGLE PLATE PEARS.

Second Premium to H. E. Savage Sons, Berlin ..... .25

CLASS VI.

BEST PACKED PACKAGE FANCY MARKET APPLES.

First Premium to H. E. Savage Sons 2.00
Second Premium to W. A. Stocking & Sons 1.00

SPECIAL CLASS.

JAR PICKLED PEACHES.

First Premium to L. H. Warncke, Cannon Station ..... .50

Report of Special Committee on Implement Exhibit.

The following firms were represented in the display of Horticultural implements, supplies, spraying outfits, fruit packages, nursery stock, etc., etc.

J. G. Harrison & Sons, Berlin, Md.

Display of nursery stock, apple, peach and pear trees and California privet.

Gardner's Nursery, Cromwell, Conn.

Nursery stock.

Barnes Bros. Nursery Co., Yalesville, Conn.

General line of fruit trees and other stock.

E. M. Ives, Meriden, Conn.

Wire-wound, oil spraying hose.

Frost Insecticide Co., Arlington, Mass.

Soluble oil for the Scale, arsenate of lead and general spraying supplies.

Niagara Sprayer Co., Middleport, N. Y.

Niagara Gas Sprayers, prepared lime-sulphur wash, arsenate of lead and general supplies for spraying.

The Frank S. Platt Co., New Haven, Conn.

Gould Pumps and appliances, arsenate of lead, lime-sulphur wash, bee keepers' supplies and a general line of seeds, etc.

Harvey Jewell, agent, Cromwell, Conn.

The Hardie Pumps, "Scalecide" and spraying supplies.

Cadwell & Jones, Hartford, Conn.

The Deming Spray Pumps and supplies, "Scalecide" and tools for the fruit grower.

Bacon & Donnovan Engine Co., Springfield, Mass.

Gas engines, fire extinguishers, feed and litter carriers, cow stanchions, manure spreaders and general farm supplies.

Hemingway's London Purple Co, New York.

London Purple and arsenate of lead for spraying.

J. T. Robertson Co., Manchester, Conn.

The Jarvis oil compound for spraying for San Jose Scale.

Cutaway Harrow Co., Higganum, Conn.

Clark's bush and bog harrow and the Cutaway tools.

Coles & Co., New York.

Fruit packages, peach and berry baskets, picking baskets, etc.

D. S. Walton & Co., New York.

General line of fruit baskets.

The Burr Nurseries, Manchester, Conn.

Nursery stock.

This year's exhibition filled nearly all of the available space in the lower hall and formed a valuable and interesting feature of the convention. Visitors thronged the room between the sessions and the display must have proved of great educational value. The exhibitors were charged a slight rental for space, thus ensuring fair treatment by the management.

No feature of our meetings should receive more careful attention than these industrial exhibits.

E. ROGERS,
BENJ. FENN,
A. T. HENRY,
Committee.

PART TWO

A Brief Record of Field Meetings, Institutes, Exhibitions, Etc., Held in 1908.

Summer Field Meetings, 1908.

The Society's campaign of field meetings in 1908, as in previous years, formed one of the most important features of the year's work. Success attended each effort in this line, the gatherings emphasizing once more the great value of an outdoor meeting, where fruit growers have the opportunity of studying at first hand the methods employed by successful orchardists and farmers in various parts of the State. As a day of recreation and social enjoyment also, the field meeting is way ahead of any other form of gathering.

As conditions for holding the usual strawberry field day in June were somewhat unfavorable, our efforts were first directed to orchard meetings, since the peach crop of 1908 promised to be a bountiful one.

Accordingly, the following arrangements were made for the

First Field Meeting of the Season.

IMPORTANT BUSINESS MEETING
of the
CONNECTICUT POMOLOGICAL SOCIETY
At Wallingford, Conn., June 25th, 1908.

In place of our usual June Field Meeting, it has been arranged to hold a gathering of the members

AT THE TOWN HALL, WALLINGFORD, THURSDAY, JUNE 25th, 1908,

for the purpose of discussing plans for handling the season's Fruit Crops and to visit some of the nearby Wallingford Fruit Farms.

READY FOR A TOUR OF THE ORCHARDS.

Field Day at the Chas. E. Lyman Farm, August 4, 1908.

At the suggestion of the Society's Committee on Markets and Transportation, the Business Session will be held at 11 a. m., when it is hoped that every Peach Grower in the State will be on hand to report the condition and give estimates of the coming Peach Crop, in order that proper arrangements can be made for shipping and marketing the crop to the best advantage.

Let every Fruit Grower, especially interested in the 1908 *Peach Crop, be present to give as complete figures as possible.*

At 1 o'clock, lunch at the hall, strictly on the basket plan. Be sure and bring your lunch! Lemonade will be furnished by the Society.

The afternoon will be devoted to a trip to the orchards, berry fields and nurseries of Barnes Bros. and possibly other nearby fruit farms, going by busses, for which a small fare will be charged.

All interested in such a meeting are urged to attend and help make it a success. It will pay every Peach Grower to make a special effort to come.

This meeting was not largely attended, but those present included all the leading peach growers of the State, and the object for which the meeting was called was, therefore, attained.

The growers met in the Wallingford town hall and got down to business at 11 a. m., with President Gold in the chair. Each grower present was invited to give a statement of his peach crop and the probable yield of his orchards in baskets of fruit. Everyone responded more or less at length, and incidentally some interesting and valuable points were brought out regarding fruit crop conditions throughout the State.

The peach crop was found to be a full one, from 80 to 100 per cent. being the estimate of most growers. Some orchards, however, were showing weakness in the trees, due to various causes more or less uncertain, the drouth of 1907, winter injury, the scale and a somewhat extended outbreak of the yellows being given as the most apparent causes.

The outlook for apples was not so encouraging, and a light crop was the forecast of those present. While the apple bloom had been heavy, but a small percentage of fruit set and a crop of not over 25 per cent. would be the result.

Plans for obtaining a more complete census of crop figures were discussed, and it was voted to instruct the Secre-

tary to send out report blanks to all growers in the State with a view to securing accurate figures on the peach crop, and that this information be made available for the railroads and the fruit buyers in nearby markets.

The business meeting then adjourned, and after a basket lunch, carriages were taken for a visit to the Barnes Bros. nurseries and orchards at Yalesville, a short distance away.

All spent a very profitable afternoon in looking over this extensive establishment, with its many acres of growing nursery stock, including several millions of young peach trees.

The orchards include dwarf apples (a new venture in Connecticut), a large block of cherries, also pears, and most extensive of all, the 50,000 peach trees, 25,000 of which were in bearing. Most of these trees were looking well and carrying a splendid crop of fruit. Some of the peach trees, however, were in a less vigorous condition, and this will cut down the total yield. Winter injury and the yellows were generally thought to be responsible for the trees showing signs of weakness.

The visitors were unanimous in their praise of the work of the Messrs. Barnes, whose energy and enterprise in fruit growing is known far and wide. A hearty vote of thanks was tendered the firm, and also the other Wallingford friends who did so much to make the day's outing a success.

Peach Field Meeting at Middlefield, August 4, 1908.

As a fitting tribute to the extensive peach growing industry of our State and the splendid crop promised for this season, a "Peach Field Day" was arranged for at Mr. C. E. Lyman's big farm in Middlefield.

The invitations read as follows:

Mr. Chas. E. Lyman cordially invites the members and friends of
THE CONNECTICUT POMOLOGICAL SOCIETY
To Visit
"THE LYMAN FARM" AT MIDDLEFIELD,
TUESDAY, AUGUST 4.

Peach growing being the leading feature on this well-known farm, it is planned to make this occasion

A GREAT PEACH MEETING!

from start to finish, and the Culture, Harvesting, Shipping and Marketing of this season's Peach Crop will receive special attention.

PEACH MEN! YOU CAN'T AFFORD TO MISS IT.

All who accept Mr. Lyman's invitation will have the opportunity to see one of the largest, best-managed and most successful farms in the State. There are nearly 1,000 acres in the farm, 300 of which are in peach orchards. This year's crop is expected to yield over 30,000 baskets, and the trees loaded with fruit make a splendid showing at the present time.

Three thousand apple trees have been planted, as well as extensive new orchards of peaches.

Hay is also a big feature on the Lyman farm, 700 tons being the crop this year. Then, too, some 40 acres of ensilage corn are grown for feeding the 2,000 or more lambs fattened each winter.

In short, Mr. Lyman's great farm is one of the model farms of Connecticut, and being beautifully located on a range of hills, is an ideal place for a successful field meeting. *It will repay all interested in fruit and general farming to come and see what has been accomplished by one who has faith in Connecticut soil.*

Teams will be furnished to show you over every part of the orchards and farm.

After dinner a program of speaking, discussion and business. Several good speakers have been arranged for to address the growers on subjects of timely interest, among others Prof. M. B. Waite, of the U. S. Department of Agriculture, at Washington.

It is expected that reports of fruit crop conditions will be made and plans discussed for the movement of this season's big Peach Crop. Representatives from the Freight Department of the N. Y., N. H. & H. R. R., also leading Commission Men and Fruit Buyers, will be present, anxious to meet our growers.

Members! Don't miss this important Event. It will be a source of PROFIT as well as PLEASURE TO YOU.

With perfect weather conditions, a great big attendance of from 500 to 600, and every detail carefully followed out, this meeting was a successful event and one long to be remembered.

Certainly no larger or more enthusiastic out-door meeting of Connecticut farmers and fruit growers has ever been held in the State, and with such a hospitable host as Mr. Lyman proved to be, it was a delightful day for all who attended.

The forenoon was devoted to a tour of the orchards and farm crops, and as the noon hour approached the company gathered under the big trees in the meadow opposite the Lyman home, where a bountiful lunch was enjoyed.

The day being very warm, all were glad to linger under the grateful shade and listen to the program of speaking, presided over by President Charles L. Gold of the Society. The host, Mr. Lyman, was first introduced, and in his genial way welcomed his many guests, assuring them of his pleasure in seeing so many present. Briefly and with characteristic modesty he told them of his fruit growing work and the other branches of his farm operations which have proved so successful. Mr. Lyman expressed his strong faith in the Connecticut soil, and especially its possibilities in the line of peach growing.

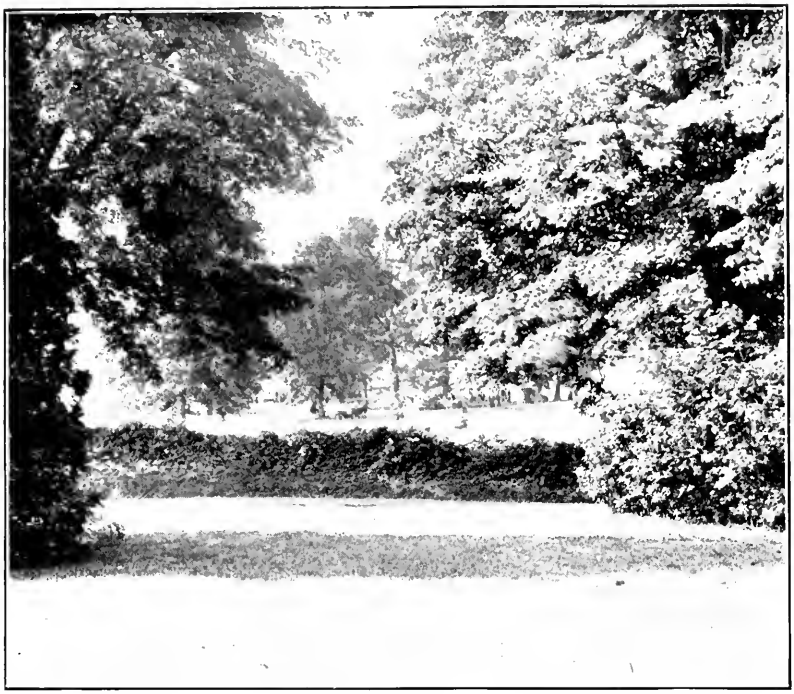
This address was responded to by Mr. J. H. Hale, who, in a witty and interesting way, thanked the host and complimented him on his pronounced success as a fruit grower and business farmer.

Mr. Hale went on to say that the scale has frightened many of our growers and now the peach yellows threatens to wipe out many orchards where it has been neglected. Even some of our best growers, Mr. Lyman included, are having their troubles with this dread disease. The only remedy is greater vigilance in the care of our orchards.

The N. Y., N. H. & H. R. R. was represented at the meeting by several of its officials, and Mr. Flint of the freight department addressed the growers on the transportation of peaches. He declared that the road would do its best to give the growers the service they require and could furnish refrigerator cars where necessary.

Mr. Flint answered many questions regarding the service and the handling of the 1908 peach crop.

Prof. M. B. Waite of Washington, D. C., was the next speaker and gave a very instructive talk on "Peach Diseases." His valuable and timely advice was eagerly received by the growers, who plied him with numerous questions.



A BIT OF MEADOW AND GROVE WHERE THE DINNER WAS ENJOYED

LISTENING TO THE AFTER DINNER PROGRAM (Mr. Hall "Has the Floor.")

SCENES AT THE BIG FIELD MEETING AT THE LYMAN FARM, MIDDLEFIELD, AUGUST 4, 1908.

Dr. G. P. Clinton of the State Experiment Station followed, speaking on the same topic.

The leading speaker of the day was Mr. George T. Powell of Ghent, N. Y., the well-known horticultural expert, whose address was full of interest and instruction. He complimented Mr. Lyman on his fine orchards and well-conducted farm and went on to show that the soil of New England is not in a depleted condition, but can be so handled as to produce very profitable crops of fruit.

With a vote of thanks to Brother Lyman and announcements regarding future field meetings, the meeting adjourned to allow time for further visits to various parts of the farm. Among those present were a great many representative fruit buyers and commission men from Boston, New York, Springfield, Providence, Worcester, Hartford, New Haven and Bridgeport, and considerable business was transacted between the growers and buyers, a feature of the meeting worth much to all concerned.

Of Mr. Lyman's fruit growing, which is well illustrated by the cuts shown on accompanying pages, it may be said that the first start was made some twenty years ago, with a small orchard of 500 peach trees. From that the business has grown, year by year, until at the present time 350 acres are devoted to peaches, and the crop for the coming year is estimated at from 50,000 to 60,000 baskets.

In all the twenty years of peach growing on this farm there have been but four without a crop of fruit—a record almost unequalled in any other peach growing State, we believe.

There is a twenty acre apple orchard just coming into bearing.

Mr. Lyman has mastered the details of peach culture step by step, until now he is recognized as an expert in this line of fruit growing.

Excellent business management is shown in this branch of his farm work, as in all the others, and while Mr. Lyman is not given to boasting, without doubt the returns from his large orchards have been extremely satisfactory.

The method employed has been to acquire old and rough pasture lands located on high ridges, such as are easily found through Middlefield and Durham, and then by intensive cultivation and careful handling and feeding of the trees, make them produce peaches of high quality and splendid appearance.

Such fruit commands a ready market, and "Lyman peaches," as well as "Lyman lamb" and "Lyman hay," enjoy a very high reputation among buyers who appreciate the highest quality. Success to Mr. Lyman, and our sincere thanks for all that he and his family did for us at this delightful meeting.

Third Field Meeting of the Season at South Manchester, August 19, 1908.

Through the kindness of Mr. Seth Leslie Cheney we were able to arrange for still another field meeting during the season. This was held on Wednesday, August 19, at the well-known "Cheney Farm" in South Manchester, and was attended by a large company of fruit growers and market gardeners, who passed an enjoyable and profitable day.

From the fact that Mr. Cheney makes a specialty of market garden crops, a great many vegetable growers were attracted to the meeting, making the gathering very largely a "Vegetable Field Day," one of the first that has been held in the State.

The following announcement concerning Mr. Cheney's fine farm was made in the program and none were disappointed in what they found to inspect and study on this well-managed farm:

"The Cheney Farm, of which Mr. Thos. L. Brown is the manager, comprises some 70 acres of fine land; 45 acres are devoted to growing vegetables for market. Up-to-date methods are followed, and the visitors will see splendid crops of Potatoes, Peppers, Onions, both American and Spanish varieties, Rhubarb, a block of 12,000 Asparagus, besides many other market garden crops. In fruits, many Strawberries are grown, also Grapes, Pears,

Apples, etc. Modern implements are used, some of which will be shown in operation. Mr. Cheney devotes about 6,000 feet of glass to the production of plants and winter green-house crops, and mushrooms are successfully grown. A new plant-house is now in process of building.

"Altogether there is very much of interest to be seen and studied on this well-conducted market-garden farm.

"South Manchester, the home of the great Cheney Silk Works, is one of the most attractive towns in the State, and those who attend the meeting will find pleasure in visiting the beautiful parks, public buildings, private residences, etc., etc."

On arriving at South Manchester after a delightful trolley ride from Hartford, the visitors were taken directly to the Cheney farm, where the host and his efficient manager, Mr. Brown, showed us over the extensive fields of vegetable crops, the large greenhouses and farm buildings, all models of neatness, convenience and good management. All quickly realized that this was one of the best market garden establishments in the Hartford district, if not in the whole State. The vegetable products are marketed locally and in Hartford, where their fine quality and attractive packing find for them a ready demand. One of Mr. Cheney's "hobbies" was shown in the number of modern tools for cultivation, spraying, etc., that are in daily use in his fields.

When the noon hour arrived teams were taken for Cheney Hall, where a nice lunch was served to all present, over 200 in number. The ladies of the local grange helped to entertain the visitors and all were well cared for.

Cheney Hall, which is a splendid public building, built for the use of the town by the Cheneys, was also the scene of the afternoon meeting. This informal gathering was called to order directly after lunch by President C. L. Gold of the Society, and the first thing on the program was an address of welcome by the host of the day, Mr. Seth Leslie Cheney. The response was given by Mr. S. F. Willard of Wethersfield, who thanked Mr. Cheney in behalf of the Society and spoke of the many valuable object lessons pre-

sented at the Cheney Farm. Mr. Willard said he was glad the Society was doing something to interest the market gardeners as well as the fruit growers. Fruits, vegetables and flowers all go well together and each should receive its share of attention from us all.

It is a privilege and a pleasure to come to such a beautiful town as South Manchester, where so much has been done through the efforts and generosity of the Cheney family to beautify and adorn both the public and private grounds of the village. The results of a strong sense of civic pride are to be seen on every hand, and no finer town can be found anywhere in our State.

The next speaker was A. N. Farnham of New Haven, who in the course of his remarks complimented the Cheneys and the town of South Manchester, saying that these magnificent results show thrift, a virtue that we should all be proud of.

Regarding the business of market gardening Mr. Farnham said he believed there is money to be made in cultivating the soil, but we are all cultivating more acres than is profitable. We must practice more intensive culture. Our foreign-born neighbors are teaching us this lesson. The thing to do is to grow more and better crops on less acres. Over-production and competition in vegetables will force us to adopt a change of methods if we would reap a reasonable profit from our labors.

Mr. T. L. Brown, the manager of the "Cheney Farm" gave a short and interesting talk on varieties, showing samples of various vegetables and explaining the merits of improved varieties of high quality. It is very necessary, he said, to breed up our strains of seeds, many of which deteriorate rapidly. To overcome the many plant diseases with which farmers have to battle, why not breed hardy varieties that will resist disease?

Prof. A. T. Stevens of the Connecticut Agricultural College made an interesting address, referring especially to

A WELL GROWN 4 YEAR OLD PEACH TREE IN THE TUNNIS ORCHARDS.
PERFECT IN FORM, VIGOR AND FRUITFULNESS.

GROWING APPLE TREES BY THE "MULCH SYSTEM" — TUNNIS FRUIT FARM

SNAPSHOTS TAKEN IN THE ORCHARD OF T. H. & L. C. ROOT,
FARMINGTON, CONN.

the best methods of packing fruits and vegetables for market. He said Mr. Cheney had reason to be proud of his farm and its fine products.

The first requisite in proper packing of our products is *cleanliness*, the next *uniformity* in the grading and third, absolute *honesty* in packing. He exhibited various kinds of improved baskets and packages and explained their advantages to the grower and also the consumer. He thought the trouble in market gardening was not so much overproduction as the carelessness shown in packing and the poor distribution of our crops.

Mr. W. H. Burr of Westport spoke next, his remarks being very instructive as well as interesting. He referred to the changes that are taking place in the market garden districts of the State, where in many instances the land is in demand for fine homes for the wealthy people, who are coming out from the cities to live in the country. This is true especially along the shore and on the hill lands that make such sightly locations for a country home. As for the rapidly increasing foreign element we can make them into good American citizens when they locate in the back country towns of our State, but conditions are not so favorable if they herd in the larger cities and towns.

The Secretary made announcements regarding the Society's coming annual exhibition, and with a rising vote of thanks to Mr. Cheney the meeting adjourned.

The remainder of the afternoon was devoted to a tour of the town, with its lovely parks and drives and the many elegant public buildings and private residences, as well as the famous Cheney silk mills.

This pleasant day in beautiful South Manchester will long be remembered by those who attended the meeting, and the occasion proved a fitting close to the summer's series of field days.

Institute Work in 1908.

A report of this feature of our work is included in the Secretary's report on page 9, and it is only necessary to add here that during the season of 1908 this Society, as in the past, performed its share of the Farmers' Institute work of the State.

The total number of Institutes held in 1908 was less than usual, owing to the fact that arrangements between the several State organizations were undergoing a change, and the readjustment was not completed in time for an extended winter's campaign.

However, a number of successful meetings were carried out, those held by the Pomological Society being as follows: February 19, 1908, at Woodbridge, with Woodbridge Grange; February 28, at Ekonk, in co-operation with the State Poultry Association; March 3, at Milford, with Indian River Grange; March 27, at North Haven, with North Haven Grange, and co-operating with the State Board of Agriculture; March 31, at Naugatuck, with Beacon Valley Grange, and on January 29, 1909, at Southington, in co-operation with the Dairymen's Association.

Practical and timely subjects of particular interest to the several localities were discussed at these meetings, the speakers comprising workers from the Experiment Stations and the State Agricultural College, as well as experienced fruit growers from this and other States. In every case the attendance and interest shown was fully up to the standard of former years, proving conclusively the value of such work in our State.

Concerning the future of farmers' institute work in Connecticut, it is difficult to speak, although the matter is most important and deserves careful consideration. The subject of farmers' institutes is a very broad one, and it seems impossible for all interested in it to agree upon the wisest course to pursue. In our State it has been, and is, largely voluntary work on the part of the different organizations represent-

ing the several branches of farming, but each organization is striving to make use of a portion of the State funds entrusted to it for the best interests of the State at large.

Whether it is best to continue this plan of individual Society work, with its attending evils of friction, rivalry and misunderstanding and more or less waste of time and funds, or whether to place the work entirely in the hands of a central bureau, with a single official in charge, is the problem to be solved. Certain it is that the latter plan is in successful operation in most of the other States, and what is good enough for them ought to be for Connecticut, modified, of course, to suit our peculiar conditions.

Without doubt, some State law regulating and defining the scope of the work is greatly needed.

The Pomological Society would welcome any change that will tend to bring about an improvement in the conduct of farmers' institutes and result in the greatest good to the greatest number.

The Eleventh Annual Exhibition of Fruits, at Rockville, September, 1908.

SCHEDULE OF PREMIUMS OFFERED.

First Division—Collections.

Class	1.	Best general collection of fruits by grower, of which not more than two-thirds to be of apples. See Rule 7..	$10.00	$5.00	$3.00
Class	2.	Best collection, 15 varieties of apples..	5.00	2.50	1.00
Class	3.	Best collection, 10 varieties of apples ..	3.00	1.50	.75
Class	4.	Best collection, 8 varieties of apples, for general purposes	2.00	1.00	.50
Class	5.	Best collection, 5 varieties of apples, for market use*	3.00	1.50	.75
Class	6.	Best collection, 12 varieties of pears ..	5.00	2.50	1.00
Class	7.	Best collection, 6 varieties of pears ...	2.00	1.00	.50
Class	8.	Best collection, 12 varieties of grapes ..	5.00	2.50	1.00
Class	9.	Best collection, 6 varieties of grapes ..	2.00	1.00	.50
Class	10.	Best collection, 10 varieties of peaches,	5.00	2.50	1.00
Class	11.	Best collection, 6 varieties of peaches .	3.00	1.50	.50

Second Division—Single Plates.

Class	1.	Best single plates of following varieties of apples, each ..... Red Astrachan, Sweet Bough, Williams' Favorite, Oldenburg, Porter, Gravenstein, Red Bietigheimer, Fameuse, Fall Pippin, Maiden Blush, Twenty Ounce, Hurlburt, Wealthy, Rome Beauty, R. I. Greening, Baldwin, Talman Sweet, Cogswell, Hubbardston, Jonathan, Gilliflower, King, Northern Spy, Belleflower, Pewaukee, McIntosh Red, Red Canada, Sutton, Wagener, Westfield, Jacob's Sweet, Fallawater, Golden Russet, Roxbury Russet, Newtown Pippin, Peck's Pleasant, Ben Davis, Hyslop Crab, *and for all other worthy varieties, premiums of one-half the regular amounts are offered*: That is, 50c., 25c. and 15c., respectively.	$1.00	$ .50	$ .25
Class	2.	Best single plate of following varieties of pears, each ..... Clapp's, Bartlett, Bosc, Angouleme, Louise Bonne, Diel, Onondaga, Anjou, Lucrative, Boussock, Buffum, Howell, Flemish Beauty, Mt. Vernon, Seckel, Clairgeau, Lawrence, Sheldon, Easter Buerre, Keiffer, Le Conte, Nelis. *Of other worthy varieties not to exceed ten.*	$1.00	$ .50	$ .25

*This class is intended to draw out the growers' ideas of value of varieties. In making the award this will be considered as well as the condition of the specimens shown.

Class	3.	Best single plate of following varieties of grapes, each ..... Moore's Early, Brighton, Concord, Eaton, Hartford, Wilder, Worden, Isabella, Agawam, Delaware, Diana, Diamond, Jefferson, Campbell's Early, Clinton, Green Mountain, Catawba, Lindley, Salem, Empire State, Martha, Niagara, Pocklington. *Of other worthy varieties not to exceed ten.*	$1.00	$ .50	$ .25
Class	4.	Peaches and plums, each valuable variety	$1.00	$ .50	$ .25
Class	5.	Quinces, each valuable variety	1.00	.50	.25
Class	6.	Grapes grown under glass, one bunch each variety	1.00	.75	.50
Class	7.	Cranberries, best exhibit, any variety..	2.00	1.00	

THIRD DIVISION—CANNED FRUITS, JELLIES, ETC.

For Table Use.

(Wives and daughters of members may compete in this division without payment of any membership fee.)

Class	1.	Best collection canned fruit, 15 varieties	$6.00	$3.00	$2.00
Class	2.	Best collection canned fruit, 8 varieties	4.00	2.00	1.00
Class	3.	Best collection canned berries, 6 varieties. See Rule 8.	3.00	2.00	1.00
Class	4.	Best collection pickles, 6 kinds, one quart each	3.00	2.00	1.00
Class	5.	Best collection jellies, 6 kinds	3.00	2.00	1.00
Class	6.	Best single can of the following fruits. Strawberries, Blackberries, Black and Red Raspberries, Currants, Gooseberries, Huckleberries, Cranberries, Grapes, Pears, Yellow and White Peaches, Apples, Quinces, Crab Apples, Cherries, Pineapples, European Plums, and Japan Plums (See Rule 8.)	.75	.50	.25
Class	7.	Best single jar jelly made from above named fruits	.75	.50	.25
Class	8.	Best sample unfermented fruit juice, each kind, not to exceed six	.75	.50	.25

FOURTH DIVISION—NUTS, ETC.

Class	1.	Best specimen any variety cultivated nuts	$1.00	$ .50	$ .25
Class	2.	Best sample of native nuts, any kind..	1.00	.50	.25
Class	3.	Best collection native nuts, made by boy or girl and correctly named (exhibitors in this class not required to be members of the Society)	2.00	1.00	.50
Class	4.	Best arranged table piece of home-grown fruits	2.00	1.00	.50
Class	5.	Best packed barrel, choice market apples	5.00	2.50	1.00
Class	6.	Best box, choice apples	2.00	1.00	.50
Class	7.	Best standard basket choice peaches ..	2.00	1.00	.50
Class	8.	Best peck basket choice peaches	1.00	.50	.25
Class	9.	Best package choice grapes	1.00	.50	.25

Class 10.	Best package of apples, pears, peaches or plums, of not over one peck, and of convenient size for buyer to carry*	2.00	1.00	.50
Class 11.	Articles not classified, for which discretionary premiums may be awarded.			

RULES OF THE EXHIBITION.

Rule 1. All exhibits must be received for entry not later than noon of Tuesday, September 22, and must be in place by 6 p. m., as judging will begin promptly on opening of second day—Wednesday. (This rule will be strictly enforced.)

2. Entries of collections in First and Third Divisions should be made with the Secretary on or before Saturday, September 19, using enclosed entry blank for the purpose, that proper table room may be provided.

3. All articles entered, except in Fourth Division, must be grown or prepared by the exhibitor.

4. All fruits shall be correctly labeled (if possible) and except grapes and crab apples, five specimens, neither more or less, shall make a plate, either single or in collection.

Of crab apples ten specimens, and of grapes three bunches, shall make a plate, except where noted. The collections also shall embrace just the required number of plates.

5. No exhibitor shall make more than one entry for the same premium, nor enter the same plate for more than one premium.

6. In the various collections, the value of the varieties shown, as well as the conditions of the specimens, will be considered in making the award.

7. Entries in Division 1, Class 1, must not contain over two-thirds apples, or over one-fourth of any other single class of fruit.

8. Entries of different kinds of Canned Fruit must be self-evident; that is, separate varieties of "red raspberries" or "yellow peaches" will not be considered as distinct kinds. Cans to be opened for sampling at the discretion of the judges.

9. Lists of varieties in all collections must be made and placed with entry card on collection.

10. As the object of the Society is to encourage the growth of fruits of fine quality, wormy or diseased specimens or those infested with San Jose Scale will not be allowed to compete.

11. Premiums will be awarded to members of the Society only, except as noted in Third Division.

12. No exhibit shall be removed without the consent of the committee, until the close of the meeting. Exhibitors are requested to state whether the fruit is to be returned to them, or donated to the Society.

SPECIAL FEATURES.

A Complete Display of Spraying Machinery, Spray Mixtures and Supplies.

Manufacturers and dealers will be given freely space to exhibit Spraying Apparatus and Supplies of every description. A splendid

*This is intended to draw out the growers' ideas of an ideal package in size and shape to be easily carried by consumers.

chance will be afforded to show the machines in actual operation and reach the Connecticut farmer and fruit grower, who are looking for the best spray goods on the market.

We expect to arrange for a demonstration of spraying mixtures and the preparation of the best and latest remedies for San Jose Scale, insects and diseases by experts from the Experiment Stations.

Also practical demonstration of packing fruits for market and shipment. Experts will show latest and best methods of packing and packages for most profitable returns. Judging of fruits and how to know varieties and their value will be explained by the expert judges in attendance.

The above list of prizes was offered for the Society's Eleventh Annual Exhibition, which was held in connection with the Rockville Fair on September 22, 23, 24, 1908.

Considerable competition developed among the fairs of the State in their efforts to secure our exhibit in 1908, which demonstrates the high place occupied by our fruit show as a valuable addition to any local fair.

After careful consideration of the various conditions involved the choice fell to the Rockville Fair, and a very successful exhibition was the outcome. The Society is no stranger to the people of this section of the State, this being the third exhibition we have held in Rockville, and each time our welcome seems warmer.

The details of this event have been so fully covered in the reports of the Secretary and the Exhibition Committee that only a brief word is necessary here.

Owing to the light crop of apples there was a shortage in some departments, but peaches, pears and grapes made a fine showing, and all in all, the show was a creditable one in every respect. The women's exhibit of canned fruits, jellies, etc., while few in numbers, was a display of a high order, showing quality in the fruit itself and an expert knowledge on the part of the exhibitors in putting up the goods in attractive manner. Undoubtedly this is the result of the educational side of our exhibitions from year to year, and this, after all, should be the main object of such shows. We certainly hope more of the housewives will take an interest in this department in the future and that the exhibits may be increased and the competition become keener. The preserving

of fruits in the best possible manner should receive more attention, while as a business proposition it offers very profitable returns.

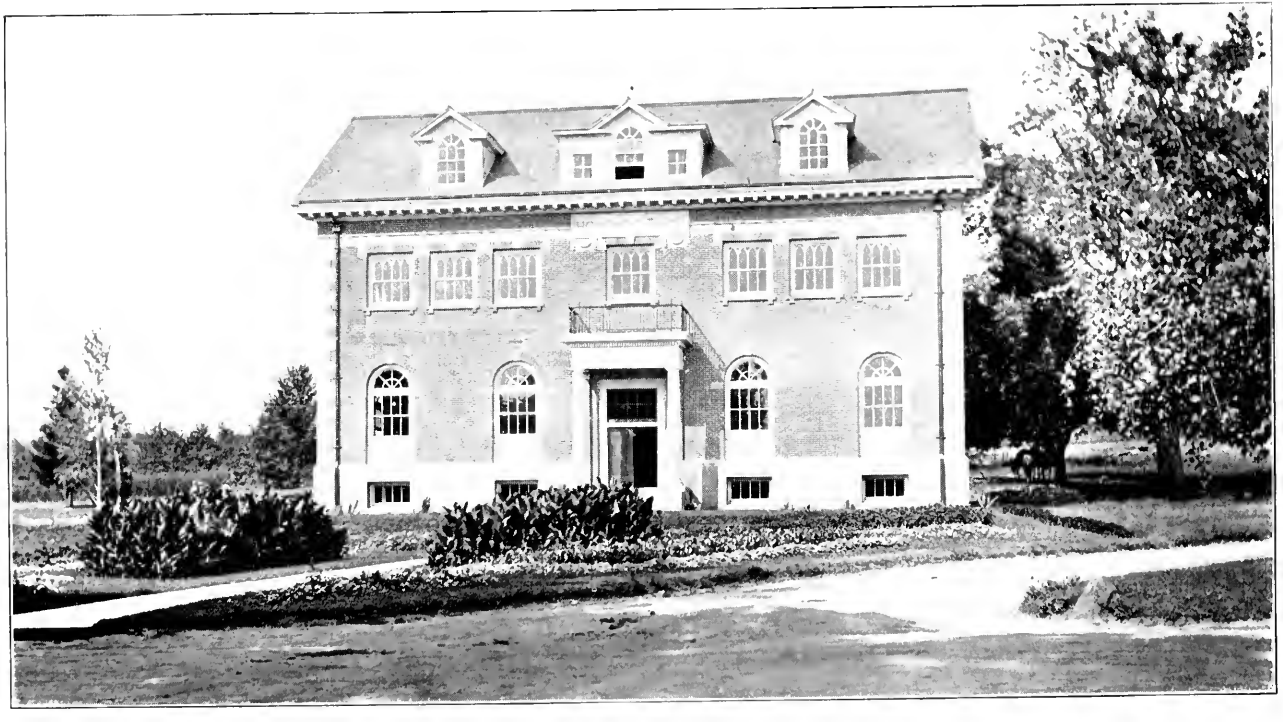
About 800 plates of fruit were on the tables, the whole forming a magnificent show, and $306.15 in prizes was distributed to 42 exhibitors.

Those who composed the committee of judges were John W. Clark of North Hadley, Mass.; Wilfrid Wheeler of Concord, Mass.; W. P. Robertson, Hartford, and Mrs. H. L. Crandall, Farmington, the two latter on canned fruits.

A somewhat new feature was undertaken in connection with the exhibition, viz., a display and demonstration of spraying machinery and supplies. This proved of much interest to the many fruit growers and farmers in attendance at the fair.

Prof. C. D. Jarvis of the Storrs Experiment Station arranged a very comprehensive exhibit of spraying supplies, while various spray pump manufacturers sent exhibits of their machines, many of which were shown in operation. Mr. H. L. Frost of Arlington, Mass., the spraying expert, aided with the demonstration work. Such object lessons should be made a feature of all our horticultural gatherings, for in no better way can the important points in spraying methods be impressed upon the grower.

Another year it is hoped to carry out some practical work in the packing of fruits and the expert judging of exhibits, both of which can be so well demonstrated during the progress of the exhibition.



HORTICULTURE HALL.

The New Building Recently Completed at the Connecticut Agricultural College

The New Horticulture Building at the State Agricultural College.

The Horticulture Building, an excellent cut of which is shown on the opposite page, is the latest addition to the splendid group of buildings at the Agricultural College at Storrs.

The building, which is of colonial style of architecture, is just completed, having been started in 1908. Davis & Brooks of Hartford were the architects, and H. Wales Lines Co., Meriden, the builders. The structure is 75 x 45 feet, of brick construction, with concrete trimmings. The interior finish is of ash, and the arrangements inside are conveniently planned and with a view to meet the increasing demands of the Horticultural Department and at the same time they embody many original up-to-date ideas in outfits for instruction in horticulture. The basement contains a large room for spray apparatus, cold storage for fruits and plants, room for preparing vegetables for market, and store rooms for spraying chemicals and tools. The first floor has a large class and lecture room, with seats for 60, a working laboratory, offices and other rooms for seeds, photographic work and the keeping of records.

The second floor has a laboratory fitted for drawing, microscopic work and other table operations, and also a horticultural museum in one half, and the other half is devoted to the classes in botany, and fully equipped for the purpose.

The building was erected at a cost of $27,000.00, and when the equipment is installed $5,000.00 more will have been spent.

Close to the Horticultural Laboratory is a range of greenhouses, just completed, the equal of anything of the kind provided at any other State college. These were built by the Lord & Burnham Co., of New York, and embrace six houses of various sizes, including a large plant-house, vinery, propagating house, vegetable forcing house, rose and

carnation house, and students' practice house, together with workrooms and florists' tenement. These buildings are near together and both heated from basement of workrooms of greenhouse and protected by having boilers, connected so either can be used for either building. They occupy a nearly level space in the center of the campus. The range of greenhouses and work rooms cost about $25,000.00.

These buildings, taken in connection with the field equipments of gardens, orchards and nurseries, puts the college in position for horticultural instruction equal, at least, to any institution in New England.

Prof. A. G. Gulley, who has been in charge of the Horticultural work at Storrs for the past twelve years, is to be congratulated on the successful completion of these fine buildings. They will stand as a monument to his untiring energy in building up the department of horticulture at the college. The fruit growers of Connecticut should feel proud of this new equipment at Storrs and should give the work their hearty support. Connecticut horticulture well deserves to be so worthily represented at the State Agricultural College.

Spraying Machinery.*

What to Buy, Where to Buy It and the Use of It.

A detailed discussion of the various types of spraying outfits would require space far beyond the limits of this article. But so insistent is the demand for such information, that the subject cannot be entirely overlooked. Those who expect to purchase spraying machinery should procure catalogues from the various firms and compare equipments and prices. So keen has been the competition that manufacturers of spraying machinery have been very active in perfecting their apparatus and, as a result, we have a great variety of styles from which to choose. The Experiment Station has received catalogues of spraying machinery from the following firms:

American Horticultural Distributing Company, Martinsburg, W. Va.
Aspinwall Manufacturing Company, Jackson, Michigan.
Bateman Manufacturing Company, Grenlock, N. J.
Bean Spray Pump Company, San Jose, Cal.
E. C. Brown & Co., Rochester, N. Y.
S. B. Church, 66 High St., Boston, Mass.
Deming Company, Salem, Ohio.
W. & B. Douglas, Middletown, Conn.
Dust Sprayer Manufacturing Company, Kansas City, Mo.
Field Force Pump Company, Elmira, N. Y.
Friend Manufacturing Company, Gasport, N. Y.
Goulds Manufacturing Company, Seneca Falls, N. Y.
Hardie Spray Pump Company, Hudson, Michigan.
Leggett & Bros., 301 Pearl St., New York, N. Y.
Morrill & Morley, Benton Harbor, Michigan.
F. E. Myers & Bro., Ashland, Ohio.
Pierce-Loop Sprayer Company, Northeast, Pa.

*These very timely suggestions concerning spraying machinery are clipped from a recent bulletin of the Storrs (Connecticut) Experiment Station, whose kindness in allowing their use in this Report is acknowledged. The suggestions should prove valuable to every fruit grower for reference.

Rochester Machine Tool Works, Ltd., Rochester, N. Y.
Spraymotor Company, London, Ont., and Buffalo, N. Y.
Wallace Machinery Co., Champaign, Ill.
Frost Insecticide Company, Arlington, Mass.
Niagara Sprayer Co., Middleport, N. Y.
H. L. Hurst Manufacturing Company, Canton, Ohio.
Thomas Peppler, Hightstown, N. J.
R. H. Deyo & Co., Binghamton, N. Y.

Pumps and Accessories.

All metal parts of the spraying equipment that come in contact with the spray liquid should be made of brass, or some other metal, that will not be affected by the chemicals. Iron in any form should not be used unless covered with some other metal. Neither should leather nor rubber valves be employed. A closely fitting brass valve is used on the best pumps. To facilitate taking a pump apart for cleaning nd repairing, the working parts should be readily accessible. This may be accomplished in various ways. Some pumps have their working parts outside the tank, where they may be taken apart with ease. Others have their cylinders within the tank and must be detached from the latter before they can be taken apart comfortably. The Hardie pump is of the latter class, but it is supplied with a pair of clamps, making it very easily detached from the tank. Pumps with their working parts within the tank are usually lower and for use in the orchard are not so liable to be in the way of branches.

Pumps. There are several different types of pumps used for spraying. The most common of these, and the one generally used on bucket and barrel outfits, is known as the simple-acting pump. Such a pump has but one set of ports or valves. The cylinder is emptied and at the same time filled by the upward stroke of the plunger. A modification of this type, of which Gould's Standard is an example, is so arranged that part of the contents of the cylinder is discharged by the upward stroke of the plunger and the rest by the return stroke. Such a pump is not truly "double-acting," although usually designated as such. The advantage of such pumps

over those of the regular single-acting type is that they maintain a continuous and uniform discharge.

The *double-acting pump*, on the other hand, is provided with at least two sets of ports or valves. In this case the cylinder is filled from one end by one stroke and emptied by the return stroke of the plunger, filling at the same time from the other end. Pumps of this kind are usually horizontal and operated with an upright handle by either one or two men. They are of large capacity and seldom used on barrel outfits.

The *two-cylinder* type consists, as its name implies, of two independent cylinders, operated with a single lever or handle. The cylinders may be either vertical, like Gould's Monarch or horizontal like the Friend.

Hydraulic pumps, of which Myers Hydraulic Pump is an example, are those with which a large air chamber is used. The liquid is forced into the air chamber under pressure by means of check valves. It is discharged through the nozzles by the force produced by the cushion of compressed air, which may be maintained for several minutes after the pump stops. Such pumps are frequently used with horse-power outfits for spraying field crops.

The *rotary* or "clock" pumps, while easier of operation than most other forms, are short lived and, for this reason, have not given satisfaction.

AGITATORS. Spraying outfits are generally equipped with an agitator to insure the discharge of the spray liquid at uniform strength. The most common type of agitator is the *dasher*, which works with either an up and down or a side motion. With barrel outfits they are usually attached to, and operated with, the handle of the pump, while with tank outfits they are operated either with a belt from the engine or by means of a chain and sprocket on the wheel of the cart. Better agitation may be obtained if the dasher has both side and up and down motions. Probably the best type of agitator is that constructed in the form of a *screw-propeller*. In large horizontal tanks, the use of a shaft bearing several "propellers" and extending the full length of the tank, is recommended.

Jet agitators are contrivances for diverting part of the spray-liquid to the bottom of the barrel, where it is ejected with force through a small opening. They are unsuited to hand outfits for the reason that it is almost impossible to keep up sufficient pressure at the nozzle while the agitation jets are open. They may be of service with large outfits where abundant power is available.

Extension Rods. These are small metal pipes of varying lengths, with or without bamboo covering. The longer ones are used for reaching the higher branches of trees, and shorter ones for spraying beneath low-growing plants. One-fourth or three-eighths inch brass or iron pipe is used for the purpose. Brass pipe is decidedly better than iron. Eight feet is probably the average length for spraying fruit trees, but many twelve-foot rods are in use. Those covered with bamboo are more rigid and decidedly easier on the operator. The distal end of the rod should be equipped with a *drip-guard,* to prevent the liquid from coming in contact with the hands of the operator. The other end should be equipped with a *stop-cock* so that the liquid may be conveniently turned off, or on, when desired.

Hose. A four-ply, one-half inch hose is generally used for orchard work, although some prefer three-eighths inch size. For spraying fruit trees from the ground, twenty-five to fifty foot lengths are used, while from a tower ten or twelve foot lengths are sufficient.

Nozzles. Three well defined types of nozzles are in general use for spraying purposes: The Bordeaux, the Vermorel and the Friend or Mystry.

I. The *Bordeaux* type is represented by the Bordeaux, Perfecto, Niagara and Seneca. Nozzles of this type may be adjusted so as to throw a solid stream or a fan-shaped spray. They are not suited to orchard spraying, nor for the spraying of any trees that may be reached with an extension rod. They are suitable for spraying very tall trees, like the elm, where it is necessary to throw a solid stream to reach the top of the tree. A stream produced in this way breaks up after leaving the nozzle and forms a spray by the action of the air.

II. Nozzles of the *Vermorel* type are very numerous, the following being the most common: Australian, Bean, Buena, Cyclone, Dewey, Eureka, Handy, Imperial, San Jose, Spray-motor, Vapor-Mist, Vermorel. They produce a fine conical spray and are largely used for spraying fruit trees and vegetable plants. Some of them are supplied with a degorger for removing solid substances from the opening of the nozzle. With the Spray-motor, the Vapor-Mist and the Eureka the degorger may be operated by simply pressing the nozzle against a branch, while with the Vermorel it usually becomes necessary to lower the extension rod and operate the degorger by hand. On account of the small opening in this type of nozzle it frequently becomes clogged and in order to produce sufficient spray, two or more nozzles are necessary.

III. The third type is represented by the Atomic, the Friend, the Mistry, the Mistry Jr., the Power, the Simplex and the Tiger. These are very similar to those of the Vermorel type, differing chiefly in having a larger chamber, and a larger opening and in their ability to produce a larger spray. On account of the larger opening, they cause less trouble by clogging. Discs with different sized openings, specially adapted to the various conditions, are usually furnished with each nozzle. Brown's Atomic nozzle is fitted with a device for regulating the size of the opening, making it possible to change from a fine spray to a solid stream. Other nozzles of this type are equipped with a degorger for clearing the opening, but when care is taken in keeping the solution free from coarse material, such a device is not necessary. As a rule these degorgers make the nozzle unnecessarily heavy and often cause much annoyance by getting caught among the branches. The Friend nozzle is made in two styles. One is constructed so as to throw a spray at a slight angle. This is undoubtedly a great convenience when spraying fruit trees and also when spraying beneath low-growing plants. The Mistry may be adjusted to spray at any angle but is objectionable on account of its tendency to leak at the swivel.

A nozzle like the Friend angle nozzle is well adapted to

a wide range of conditions. One of such nozzles on the end of an extension rod is light and convenient to handle, and will throw a spray large enough for most purposes. The size of the spray, or the amount of material discharged, may be increased, without seriously affecting the fineness of the spray, by using a larger opening and additional pressure. Nozzles of the Vermorel type, on the other hand, are not suited to orchard spraying when used singly, and when used in clusters are too heavy, and are somewhat difficult to operate among the branches. Again, when two or more sprays come in contact, they tend to dribble, causing a waste of some of the solution and more or less annoyance to the operator.

Strainers. To prevent the clogging of nozzles, all spray mixtures should be strained into the tank. Brass wire cloth of about twenty meshes to the inch is probably best for this purpose. Strainers are usually made in the form of a funnel, and some have a raised center, giving more straining surface. A strainer should also be attached to the end of the suction pipe.

Various devices called *separators* and *nozzle protectors* have recently been put on the market. One of these consists simply of a brass cup separated into two chambers by a disc of wire cloth through which the spray liquid must pass before entering the hose. All sediment is thus collected in the lower half of the cup and may be removed at any time through an opening for the purpose. The writer has not used any of these devices, but is of the opinion that they may be of service in preventing the clogging of nozzles, especially with field crop sprayers, where many nozzles are in use.

Kinds of Outfits.

Bucket Outfits. As the name implies, such an outfit consists simply of a force pump and a bucket. The bucket usually holds from five to ten gallons. The later outfits of this kind have the pumps attached, which is a great improvement over the old method of holding the pump in place with the foot. Bucket outfits are useful for greenhouse work or

for the small back-yard garden. They may be purchased at from $3 to $8.

KNAPSACK OUTFITS. Such outfits are made to attach on the back of the operator and hold about five gallons. Outfits made entirely of brass and copper may be purchased at from $10 to $15. They are very useful on small plantations and in greenhouses. Some growers claim that young fruit trees may be sprayed more economically with the knapsack than with any other outfit. Some provision should be made on such outfits to prevent the drip from the plunger rod from running down the back of the operator. A deep gutter with an opening through which the liquid runs back into the tank, is provided on some outfits.

There are now on the market several small compressed-air outfits of about three or four gallons capacity and costing about $5 to $10. A few strokes of the piston is sufficient to produce a spray lasting several minutes. They are of the same general usefulness as the knapsack outfits.

HAND CART OUTFITS. The capacity of such outfits is usually from 20 to 30 gallons. They are especially useful in vegetable gardens and in places inaccessible to wagons. Such outfits are often useful for watering plants. They consist usually of a small tank or barrel on a two-wheeled truck and are drawn around by hand. Some of smaller capacity are erected on a wheelbarrow. Whether on one or two wheels, they are very difficult to haul over soft ground. In vegetable gardens the crops likely to require spraying should be planted so as to accommodate a barrel outfit in a horse cart, or one of the regular horse-power sprayers.

BARREL OUTFITS. These outfits consist of a pump mounted on either side of a barrel. They are used both for vegetable garden and orchard spraying. The outfit may be carried about on a common wagon or cart or on a stone boat or sled. An outfit with the pump on the side of the barrel is preferred for the reason that it is less likely to interfere with the branches while driving through the orchard, and also for the reason that the mixture is more easily agitated. Such outfits

should always be equipped with an agitator and be made to accommodate two leads of hose. Barrel outfits are suited to orchard work where the trees are not more than fifteen feet in height. Many of the barrel pumps are incapable of producing sufficient pressure for two leads of hose and, for this reason, the double-acting or double-cylinder pumps are recommended. Generally these pumps are used with the tank outfits, as described in the next paragraph, but may also be used with a barrel on a wagon, large stone boat or sled.

Tank Outfits. Tank outfits are of large capacity and are operated either by hand or by power from a steam or gasolene engine. They consist of a large tank of about 100 to 500 gallons capacity and are mounted on a four-wheeled truck with wide tires. Horizontal tanks with a half-round bottom are preferred. Those for spraying tall trees are equipped with a tower or elevated platform with a railing around it. Those operated by hand are usually equipped with a horizontal pump of the double-acting or double cylinder type. They may be operated by either one or two men. Three or four leads of hose are frequently used, but it is seldom advisable to use more than two, one by the man on the tower and one by the man on the ground. The agitator is usually operated by a sprocket gear attached to one of the wagon wheels. These outfits are very suitable for mature apple orchards of moderate size.

Outfits with which steam or gasolene power is used vary greatly in capacity and mechanical construction. Since our commercial orchards are usually located on hilly lands, where it is difficult to transport these heavy outfits, their chief use in Connecticut is in spraying shade trees around cities and towns. The gasolene outfits are much lighter and more compact than the steam outfits and may prove serviceable in the larger commercial apple orchards, especially those on level ground and with very large trees. Such outfits are more economically operated than hand pumps and have the additional advantage of producing abundant pressure.

Compressed-air Outfits. These are contrivances spe-

cially designed to obviate the usual objection to the large and clumsy power outfits. In general such outfits consist of a stationary power plant for compressing air in a tank. This tank of compressed air and another one containing the spray liquid is taken to the orchard on a wagon and the compressed air used to force the liquid from the tank. Some outfits have but one tank, which contains both the compressed air and the spray mixture. On account of their lightness many growers prefer to use these compressed air outfits. Their use has not become general for the reason that too much time is lost in charging and recharging the tank with air.

With this class of outfits may be discussed the *Niagara gas sprayer*. It is a tank outfit which utilizes compressed carbonic acid gas to force the liquid from the tank. It consists of a steel tank of 50 to 250 gallons capacity and a wrought iron tube containing carbonic acid gas compressed under a pressure of 1500 pounds to the inch. The tubes of gas are purchased from manufacturers in the cities or large towns. When empty the tubes are returned. Its chief advantages are lightness and simplicity of operation. It would seem to be well adapted to orchard conditions in New England where it is so difficult to haul the large power outfits over the hilly lands. It has not become popular, however, and is used only to a very limited extent. The chief objection to its use is the cost and trouble of securing the compressed gas. The steel tanks are very compact and much lighter than the ordinary wooden tanks and are admirably suited to the use of one of the more powerful hand pumps. The steel truck and tower usually supplied with this outfit are also very well adapted to orchard spraying.

Horse-power Outfits. These outfits differ from hand outfits in that the power for working the pumps is secured by gearing the pump to a sprocket wheel attached to a wheel of the rig or to the axle. Usually they consist of a tank, of from 50 to 100 gallons capacity, mounted on a cart and hauled by one horse, although many two-horse outfits are in use. They are especially adapted to the spraying of field crops like po-

tatoes, beans, cabbages, asparagus and the like, but are unsuited to orchard spraying because of the inability to maintain the pressure after the rig stops. With small fruits, nursery stock, grape vines and young orchards they have been successfully used. Some outfits have their nozzles adjusted in such a way as to direct the spray beneath the plant. This is a great advantage in spraying for diseases like potato blight. The most common error in the use of these outfits consists in the use of too many nozzles. Three or four nozzles with abundant pressure are often more serviceable than twice the number with insufficient pressure. Outfits to be drawn with one horse should be equipped with a tank containing not more than fifty gallons and with not more than four nozzles. For large areas a two-horse outfit equipped with a hundred-gallon tank and six or eight nozzles, is recommended. Such outfits should be geared higher than the one-horse outfits, so as to produce power enough to supply the additional nozzles. If it becomes necessary to use more than eight nozzles, a tank outfit equipped with a gasolene engine should be employed.

A fruit-spraying outfit consisting of a powerful double-acting or double-cylinder hand pump and a 50 to 200 gallon tank on an ordinary wagon, with wide tires, may be employed effectively for spraying field crops by attaching the necessary piping to the rear of the wagon and connecting it to the pump with a hose. A strong man may produce pressure enough for from four to six nozzles. Nozzles of the Friend type are most suitable for field-crop outfits, for the reason that they are less liable to clog.

Emulsion Pumps. These are contrivances for the purpose of applying oil and water simultaneously and in definite proportions. The proportions cannot be definitely regulated, however, and for this reason such outfits are not reliable.

Dust Sprayers. There are many contrivances on the market for applying insecticides and fungicides to plants in powder form. Their use is not recommended except in sections where water is unavailable.

Care of Spraying Machinery.

It is always advisable to rinse out thoroughly the spraying outfit and all utensils after use. Many of the spraying mixtures have a corrosive effect on metal parts, and scales of metal "rust" often cause serious trouble by clogging the nozzles. As oil is very injurious to rubber it is advisable to pump clear water through the hose after spraying with oil.

Barrels and wooden tanks while not in use should be kept partly filled with water to prevent drying out and leaking.

Before spraying time arrives it is well to examine carefully the spraying outfit, to be certain that everything is in readiness.

NECROLOGY.

During the past year Death has again entered the ranks of our Society and has taken an unusually heavy toll from our membership.

Following our usual custom, we consecrate, as is most fitting, these final pages of the Report to the memory of those whose loss we mourn.

Death has robbed us of their presence, but the memory of their good deeds will ever abide.

Following is the list of those deceased since our last Report was published:

DR. GURDON WADSWORTH RUSSELL, *of Hartford,* died February 3, 1909, at the ripe age of ninety-four years. Dr. Russell was the oldest member of the Society, with which he had been connected for many years. His interest in horticultural matters was remarkable. He loved every growing plant and tree and possessed a keen knowledge of fruits and flowers, which he cultivated for pure love of them rather than for any thought of pecuniary gain. His passing, after a long and useful life, removes one more of that distinguished group of Connecticut horticulturists which numbered such veterans as P. M. Augur, T. S. Gold, Edwin Hoyt and others. Dr. Russell was of Colonial descent, born in Hartford April 19, 1815, the son of John and Martha Wadsworth Russell. He was distinguished in the medical profession, and for nearly sixty years was the medical director of the Aetna Life Insurance Company. A Hartford paper says of Dr. Russell's active life:

> There seemed to be no end to the activities of this man. To his regular professional work, his devotion to the Hartford hospital and the retreat, his religious services and political work, not

to mention his writings from time to time, he added an intimate knowledge of nature, which he loved, and in whose communion he spent many, many hours. His library is a wealthy assemblage of learning devoted to these matters, and in former years he found time to spend long seasons on his farm on Cedar mountain, in closest study of the out-of-door world of trees and flowers.

It seems strange that so diverse and active a life could have lasted so long, for Dr. Russell was never rugged, indeed he was quite the opposite in health; but this very fact led him to observe the closest care of his physical health, and perhaps, after all, the weakness was a source of strength, and his zealous care of himself the real reason for his long and busy life.

Profound sorrow marked the passing of this "grand old man" in his native city and throughout the whole State.

PAUL THOMSON, *of West Hartford,* who died in February, 1909, had been an active member of the Society since its organization. Mr. Thomson, who was of Scotch descent, was well known as a successful gardener, florist and fruit grower. He was active in the grange and in town affairs and was held in high esteem by all with whom he was associated.

WM. M. TYLER, *of Waterbury.* Mr. Tyler had been an active member of the Society almost from the beginning, and was a regular attendant at its meetings and greatly interested in its work. His death, which occurred in March, 1909, brings a sense of loss to all his associates. For many years he was one of the largest peach growers in his section of the State, attaining success in this line of work. Mr. Tyler was a man of high character, beloved by all who knew him.

CHAS. H. HALL, *of Cheshire,* died in the winter of 1909 and had been a member of the Society since 1901.

EDWARD H. BARNES, *of New Haven,* died suddenly in the spring of 1909. He became a member of the Society in 1905 because of his deep interest in fruit culture, especially

peach orcharding. Mr. Barnes was not only a successful business man of New Haven, but he was also a partner in orchard ventures in Wallingford and Middlefield. He early saw the possibilities in investing in Connecticut fruit lands, and it is to be regretted that he did not live to see the full results of this faith in the planting of fruits.

Hon. George M. Clark, *of Haddam*, died during the winter of 1908. Mr. Clark, who had been a member of the Society and interested in its work for many years, was a well-known and picturesque figure in Connecticut agriculture, in the political and civic life of the State and of his native town. He was famed as the inventor and manufacturer of the well-known Cutaway tools, which have played so important a part in soil cultivation the world over. Mr. Clark made a special study of the grass crop and was perhaps best known to the farmers of the country as the "grass culture crank." His phenomenal crops of grass were grown by intensive methods and he freely gave to others the benefit of his successful experience with this important farm crop. Original and somewhat eccentric in many of his ideas, Mr. Clark was nevertheless a man of marked ability and his death removes a strong personality from Connecticut agriculture.

Dr. Wm. J. Ford, *of Washington*, a well-known physician of Litchfield County, and a man deeply interested in horticulture and rural welfare.

Silas A. Griswold, *of West Hartford*—a long-time member of the Society and one interested in all its work, particularly the exhibitions, where, with his brother, he was a frequent exhibitor of choice fruit.

N. N. King, *of Suffield*. Mr. King was a veteran fruit grower and an active member of the Society since 1895. He was a man of high Christian character and will be

greatly missed in his own community as well as among the fruit growers of the State.

MRS. ANNIE E. PAULISON, *of West Hartford*, a member of the Society since 1906.

WM. C. HALE, *of Willimantic*, who became a member of the Society in 1906.

ALLAN R. YALE, *of Meriden*, died suddenly in the fall of 1908. Mr. Yale was an enthusiastic fruit grower and made a special study of spraying. He was a promising young man whose death is keenly felt by us all.

LIST OF MEMBERS

OF THE

CONNECTICUT POMOLOGICAL SOCIETY

1909

This list corrected to Aug. 1, 1909.

LIFE MEMBERS.

Ashton, Frank B., Middletown.
Talcott, Phineas, Rockville.
The Conn Agricultural College, Storrs.
Brown, J. Stanford, Yonkers, N. Y.
Shepperd, Walter S., Shaker Station.
Brown, Everett E., Pomfret Center.
Geer, Everett S., Hartford.
Lucchini, Victor E., Meriden.
Gulley, Prof. Alfred G., Storrs.
Miles, Henry C. C., Milford.
Gold, Charles L., West Cornwall.
Gilbert, Orrin, Middletown.
Clark, Arthur J., Durham.
Curtis, Ellicott D., Bantam.
Bronson, Nathan S., New Haven.
Jarvis, Chas. M., Berlin.

ANNUAL MEMBERS.

Abbe, Linden S., Hazardville.
Adams, Joseph, Westport.
Albiston, Joseph, So. Manchester.
Allen, Chas. I., Pequabuck.
Alsop, J. W., Avon.
Allyn, W. I., Mystic.
American Horticultural Distributing Co., Martinburg, W. Va.
Andrews, Cornelius, New Britain.
Andrews, J. E., New Britain.
Apothecaries Hall Co., Waterbury.
Armstrong, Lee F., Oxford.
Atkins, F. C., Hartford, 12 South Highland street.
Atkins, Mrs. F. C., Hartford, 12 South Highland street.
Atkins, T. J., Middletown.
Atwater, Edwin B., New Haven, Box 207.
Atwood, C. B., Watertown.
Atwood, Oscar F., Brooklyn.
Ashendon, H. H., Waterbury.
Augur, Alfred H., Middlefield.
Averill, H. O., Washington Depot.
Bacon, Eben W., Middletown. R. F. D. No. 1.
Bailey, F. B., Durham.
Bailey, Mrs. F. B., Durham.
Barker, C. A., Westville, R. F. D.
Barker, J. Harry, Branford.
Bartlett, F. A., Stamford.
Bartlett, Francis A., White Plains, N. Y.
Baldwin, Walter H., Cheshire.
Barber, Henry A., Danbury.
Barber, Joseph, Rockville, R. D.

Barber, Mrs. Joseph, Rockville.
Bard, J. Sprague, Brooklyn.
Barnes, J. Norris, Yalesville.
Barnes, John R., Yalesville.
Barton, Richard, Thompson.
Bassett, George E., Clintonville.
Baumgardt, H. F., Highwood.
Beach, A. S., Bridgeport, R. F. D.
Beach, Chas. L., Storrs.
Beach, L. A., Wallingford.
Beach, J. H., Branford.
Beach, Z. P., Wallingford.
Beaupain, R. T., So. Norwalk, 192 West street.
Beckwith, G. C., New Hartford, R. F. D.
Beckwith, W. M., New Hartford, R. F. D.
Beebe, C. C., Wilbraham, Mass.
Beers, F. H., Brookfield Centre.
Beisiegel, Jacob, Woodbridge.
Benham, Leonard M., Highwood.
Benham, Wilbur H., Highwood.
Bernhard, Albert, Meriden.
Bigelow, E. W., Litchfield.
Bishop, Mark, Cheshire.
Blakeman, J. H., Oronoque.
Blakeman, Frank E., Oronoque.
Bliss, Ethelbert, Ludlow, Mass., R. F. D.
Boardman, F. E., Middletown, R. F. D.
Bolles, C. P., Wilbraham, Mass.
Bonner, Chas. W., Rockville.
Boynton, C. C., Cheshire.
Bray, S. W., Milford.
Brewer, C. S., Hartford.
Bridge, H. J., Hazardville.
Brinsmade, W. H., Bridgeport, R. F. D. No. 4.
Britton, Prof. W. E., Experiment Station, New Haven.
Brinker, Chas., New York City, 25 W. 33d street.
Brockett, Ernest R., North Haven.
Brooks, H. R., Glastonbury.
Brooks, John N., Torrington.
Brown, G. F., Cannon Station.
Brown, H. H., Monsey, N. Y.
Brown, H. W., Hartford, 43 Main street.
Brown, Jas. F., Jr., North Stonington.
Brown, Stanton F., Poquonock.
Brown, T. L., So. Manchester.
Brownson, S. B., Shelton.
Brundage, Benj., Danbury, R. F. D. No. 20.
Brundage, Chas. H., Danbury.
Brush, G. M., New Fairfield.
Buell, H. B., Eastford.
Burnham, C. N., Middlefield.
Burr, C. R., Manchester.
Burr, W. H., Westport.
Burr, Eugene O., Higganum.
Burt, E. M., East Long Meadow, Mass.
Burton, Geo. W., Beacon Falls.
*Bushnell, Huber, Berlin.
Bushnell, Mrs. Huber, Berlin.
Bushnell, J. C., Farmington.
Butler, George E., Meriden.
Butler, George S., Cromwell.
Byington, Jas. L., Forestville.
Callahan, Thos., Newington.
Camp, David N., New Britain.
Candee, J. H., Sheffield, Mass.
Carini, Bartholomew, South Glastonbury.
Carpenter, C. W., Munson, Mass.
Carrington, L. W., Southington R. D. 2.
Cassady, M. J., Oxford.

* Deceased.

Cass, Chas. F., Waterbury, R. F. D., No. 1.
Chamberlain, F. A., Terryville.
Cheney, Seth Leslie, So. Manchester.
Child, C. H., Woodstock.
Christian, W. W., Berlin.
Churchill, Fred G., Wethersfield.
Churchill, Levi B., Wethersfield.
Churchill, Stephen, Wethersfield.
Clark, A. L., Waterbury.
Clark, Arthur F., Higganum.
Clark, Frank T., Beacon Falls.
Clark, Merritt M., Brookfield Center.
Clark, O. R., Higganum.
Clarke, Clifford L., Durham.
Clarke, David A., Milford.
Clinton, E. B., Clintonville.
Clinton, Dr. George P., Experiment Station, New Haven.
Clinton, Prof. L. A., Storrs.
Coe, Ernest F., Edgewood avenue, New Haven.
Coe, W. T., Northford.
Coleman, M. L., Seymour.
Coleman, M. P., South Coventry.
Coles, John E., 109 Warren street, New York City.
Colton, F. B., Hartford.
Comstock, G. C., Norwalk.
Cook, Allen B., Farmington.
Cook, H. B. Georgetown.
Cook, S. G., Branford.
Cooke, H. G., Branford.
Cooke, Marcus E., Wallingford.
Cooper, J. M., Wallingford.
Cornell, Joseph, Norwalk.
Cosgrove, Geo. A., Willington.
Crandall, Mrs. H. L., Farmington.
Crowell, David A., Middletown.
Curtis, H. B., Cheshire.
Curtis, Newton M., Sandy Hook.
Curtis, Robert W., Stratford.
Dabney, H. D., New Britain, R. F. D., No. 2.
Dart, C. O., Rockville.
Davis, A. B., Rockville.
Davis, E., Branford.
Davis, Edson G., Torrington.
Davis, Henry B., Southbury.
Davis, Mrs. A. B., Rockville.
Dearden, Greenwood, Tolland.
Deming, H. P., Robertsville.
Doolittle, Arthur H., Bethany.
Doolittle, D. A., Bethany.
Doolittle, S. B., Wallingford.
Douglass, G. F., Collinsville.
Drew, G. A., Greenwich.
Driggs, Oliver K., Vernon.
Duncan, R. R., Wethersfield.
Dunham, H. C., Middletown.
Dyer, E. W., Berlin.
Eddy, Frank C., Unionville.
Eddy, J. C., Simsbury.
Eddy, John S., Unionville.
Ellison, E. W., Willimantic.
Ellsworth, David J., Windsor.
Ellsworth, E. J., Ellington, R. F. D.
Elwood, C. F., Greens Farms.
Elwood, J. F., Green Farms.
Emerson, J. B., New York City, 20 E. 30th street.
Emmons, F. A., East Canaan.
Ennis, Bertrand O., Highwood.
Eno, Frank H., Simsbury.
Evans, Archie J., Hockanum.
Fagan, Joseph A., Forestville.
Fairchild, H. L., Bridgeport, R. F. D., No. 4.
Farnham, A. N., Westville.
Fawthrop, Walter, Cromwell.
Fay, John H., West Cheshire.
Felber, John J., Rockville.

Fendall, Chas. E. & Son, Towson, Md.
Fenn, Benj., Milford.
Fenn, Dennis, Milford.
Fenn, Robert M., Middlebury.
Fisher, Willard, New York City, 81 Fulton street.
Fisk, H. B. & Co., Providence, R. I.
Forbes, John P., West Haven, R. D.
Forbes, J. S., Burnside.
Foster, Sylvester M., Westport.
Francis, D. G., Rockville, 42 Talcott ave.
Francis, Judson E., Durham Center.
French, W. H., Wolcott.
Frost, Frank M., Yalesville.
Frost, Fremont, Hartford.
Frost, H. L., Arlington, Mass.
Frost, Willis E., Bridgewater.
Fuller, Wm. H., West Hartford.
Fullerton, H. B., Huntington, L. I., N. Y.
Gager, John M., Willimantic.
Gardner, A. H., Meriden.
Gardner, I. L., Meriden.
Gardner, R. H., Cromwell.
Garrigus, H. L., Storrs.
Gaylord, E. W., Bristol.
Geer, Isaac G., Norwich, R. F. D., No. 6.
Gehring, Fred, Rockville.
Gelston, J. B., East Haddam.
Gilbert, Henry, Middletown.
Gilbert, Mrs. Orrin, Middletown.
Gilbert, Thomas, Middletown.
Godfrey, E. S., Jr., Storrs.
Goldsborough, H. H., Eagleville, R. F. D.
Gorton, Fred D., North Green, N. Y.
Gotta, John, Portland.
Grasselli Chemical Co., The, New York, 60 Wall street.
Gray, Chas. A., Norwich, R. F. D. 1.
Gray, F. W., Waterbury.
Gray, J. B., Norwich, R. F. D. 1.
Greene, A. F., Woodbury, R. F. D.
Gridley, E. D., Southington, R. F. D.
Griffith, Geo. H. Bristol.
Griswold, H. O., West Hartford.
Griswold, J. B., Newington.
Griswold, R. S., Wethersfield.
Griswold, S. P., West Hartford.
Griswold, Thomas & Co., South Wethersfield.
Griswold, W. F., Rocky Hill.
Goulds Mfg. Co., The, Seneca Falls, N. Y.
Gulley & Bonner, Rockville.
Hale, George, Westport.
Hale, G. H., South Glastonbury.
Hale, J. H., South Glastonbury.
Hale, Stancliff, South Glastonbury.
Haley, E., Mystic, R. F. D.
Hall, Geo. B., Moodus.
Hall, G. D., Wallingford.
Hall, G. H., Manchester.
Hall, Lovell, Middletown, 420 Main street.
Hall, Wilbur H., Wallingford.
Hamilton, H. L., Ellington.
Hammer, V. T., Branford.
Hammond, Joseph, Jr., Rockville.
Harrison, Orlando, Berlin, Md.
Hart, E. S., New Britain.
Hart, E. W., Forestville.
Hart, S. A., Kensington.
Hart, Mrs. S. A., Kensington.
Hawley, E. J., Bridgeport, 27 Hough avenue.

Healey, L. H., North Woodstock.
Hein, C. V., East Longmeadow, Mass.
Hemingway's London Purple Co., New York, 133 Front street.
Henry, A. T., Wallingford.
Higgins, Wm. L., M.D., South Coventry.
Hilliard, H. J., Sound View.
*Hills, T. Morton, Willimantic.
Hillyer, Appleton R., 91 Elm street, Hartford.
Hillyer, Prof. H. W., Farmington.
Hines, John T., Farmington.
Hitchcock, A. L., Plainville.
Hixon, Adin A., Worcester, Mass.
Hollister, Geo. H., Experiment Station, New Haven.
Hollister, Kirkland, South Glastonbury.
Hopson, G. A., Wallingford.
Hotchkiss, Chas. M., Cheshire.
Hotchkiss, William, Bristol.
Hough, E. J., Wallingford, R. F. D.
Hough, George E., Wallingford, R. F. D.
Hough, Joel R., Wallingford.
Houston, J. R., Mansfield Depot.
Hoyt, James, New Canaan.
Hoyt, Stephen, New Canaan.
Hubbard, Clement S., Higganum.
Hubbard, Elmer S., Middletown.
Hubbard, John B., Guilford.
Hubbard, J. M., Middletown.
Hubbard, Paul M., Bristol.
Hubbard, Robert, Middletown.
Hull, James, Durham.
Hungerford, Newman, Torrington, R. D. 2.
Hunt, W. W., Hartford.
Huntington, Chas., Windsor.
Hurlburt, Henry A., Jr., Wilton.
Huss, J. F., Hartford.
Innis, A. C., Ridgefield.
Ives, E. M., Meriden.
Ives, Mrs. E. M., Meriden.
Ives, Miss Florence C., Meriden.
Ives, Julius I., South Meriden.
Ives, Wm. B., Wallingford.
Jackson, Elmer, Wilton.
Jackson, J. C., Norwalk, R. F. D., No. 42.
Jacobs, Arthur C., Mansfield Center.
Jarvis, C. D., Storrs.
Jenkins, Dr. E. H., Experiment Station, New Haven.
Jennings, W. S., Fairfield, R. F. D. 9.
Jennison, E. F., Hartford.
Jerome, F. M., New Britain.
Jewell, Harvey, Cromwell.
Jewell, Mrs. Harvey, Cromwell.
Johnson, C. B., Southbury.
Johnson, Dr. F. E., Mansfield Depot.
Jones, E. A., New Canaan.
Kelley, Edward, New Canaan.
Kelley, W. J., New Canaan.
Kellogg, Geo. A., West Hartford.
Kelsey, Davis S., West Hartford.
Kelsey, Frederick, Higganum.
Kelsey, James H., Meriden.
Kendall, James H., Auburndale, Mass.
Kenney, J. P., Hockanum.
Kilduff, P. J., Bristol, R. F. D.
Killam, Edw., Thompsonville.

* Deceased.

Kingsbury, Addison, South Coventry.
Kingsbury, Andrew, Rockville, R. F. D. No. 2.
Kingsbury, John E., Rockville.
King, Horace, Thompsonville.
King, Mrs. N. N., Suffield, R. F. D.
Kirkham, John S., Newington.
Knapp, M. C., Danbury.
Knowles, Wm. A., Middletown.
Knoxhall, J., Hockanum.
LaField, J. Howard, Plainville.
Lane, Willis A., New Britain.
Lapsley, Arthur B., Pomfret Center.
Laurenson, Robert, Eagleville.
Lewis, Fred J., Highwood.
Loomis, Chas. N., Bolton.
Loomis, John, South Manchester.
Loverin, D. P., Huntington.
Lowrey, H. P., Whigville.
Lowrey, L. L., Bristol.
Ludlum, H. A., Wolcott.
Lyman, C. E., Middlefield.
Lynch, Wallace, Brooklyn, N. Y., 591 St. Mark's ave.
Main, C. R., Poquetanuck.
Mallon, James, Rockville, 8 Spruce street.
Manchester, E., Bristol.
Manchester, E. F., Bristol.
Manchester, George C., Bristol.
Manchester, H. G., Winsted.
Mansfield, Peter, West Hartford.
Marshall, Joseph, Seymour.
Martin, J. A., Wallingford.
Martin, W. B., Rockville.
Martin, W. B., Rockville.
Maxwell, W., Rockville.
May, Otto, Glastonbury.
May, W. B., Hartford.
McCormack, Samuel, Waterbury, 1063 N. Main street.
Newton, J. P., Saybrook.
McKay, W. L., Geneva, N. Y.
McLean, John B., Simsbury.
McLean, S. G., South Glastonbury.
Mead, Seaman, Greenwich.
Merriman, E. D., South Coventry.
Merriman, J. H., Southington.
Miller, C. H., Berlin.
Miller, E. Cyrus, Haydenville, Mass.
Miller, E. S., Wading River, L. I., N. Y.
Miller, F. B., Bloomfield.
Mills, D. E., Bristol.
Minor, Geo. N., Bristol.
Mitchell, W. L., New Haven, 1505 Chapel street.
Molumphy, J. T., Berlin.
Montague, H. E., 109 Warren street, New York City.
Moore, E. A., New Britain.
Morgan, S. W., Wethersfield.
Morton, E. G., Broad Brook, R. D.
Morris, Chas. G., New Haven, Box 1352.
Morris, F. S., Wethersfield.
Morse, C. Z., Shelton.
Moses, A. A., Unionville.
Mosley, A. W., Glastonbury.
Mowry, Albert J., Centerdale, R. I.
Mudge, E. P., New Canaan.
Mueller, C. J., Berlin.
Munson, E. W., New Haven, 986 Dixwell avenue.
Munson, Rev. Myron A., West Hartford.
Munson, W. M., Huntington, Mass.
Munson, R. A., Highwood, Station 4.
Nettleton, H. L., Durham.
Newhauser, R. F., Farmington.

Newton, Robertson & Co., Hartford.
Noble, H. C., New Britain.
Olcott, W. H., South Manchester.
Olds Gas Power Co., Boston, Mass.
Ott, Fred, Cheshire, R. F. D.
Paddock, J. H., Wallingford, East Main street.
Page, B. F., Northford, R. F. D.
Palmer, Selah, Portchester, N. Y.
Parker, G. A., Hartford.
Parker, John B., Jr., Poquonock.
Patch, A. Warren, Boston, Mass.
Patten, D. W., Clintonville.
Patterson, B. C., Torrington.
Pauley, Geo. A., New Canaan.
Payne, Frank C., Portland.
Payne, Lyman, Portland.
Pease, C. P., Ellington.
Peasley, Fredk. M., Waterbury.
Peck, B. A., Bristol.
Peck, Henry B., Northfield.
Penny, James K., Danbury.
Perley, G. P., Woodstock.
Pero, Louis, South Glastonbury.
Perry, Chas. M., Southbury.
Peters, Henry D., Highwood.
Phelan, Franklin V., Vernon.
Phelps, A. H., Clinton.
Phelps, Chas. S., Canaan.
Phelps, E. J., Enfield.
Phelps, Mrs. E. J., Enfield.
Phelps, G. N., East Haddam.
Philips, Alan, Farmington.
Pierce, Mrs. I. E., Bristol.
Pierpont, A. B., Waterbury.
Pierpont, A. J., Waterbury.
Pierpont, W. L., Waterbury.
Pinney, B. F., Ellington, R. D.
Pitkin, A. L., Talcottville.
Plant, A. B., Branford.
Plant, Albert E., Branford.
Platt, Frank N., Milford.
Platt, Frank S., The, Co., New Haven.
Platt, G. F., Milford.
Platt, N. S., 395 Whalley avenue, New Haven.
Platt, William F., Milford.
Pomeroy, E., Windsor.
Porter, Marshall, Hebron.
Potter, H. F., North Haven.
Powell, E. C., Springfield, Mass.
Pratt, B. G., 11 Broadway, New York City.
Pratt, F. B. & Co., Boston, Mass.
Price, Walter E., Warehouse Point.
Pring, Geo. H., Wallingford.
Pring, Thos. J., Wallingford.
Putnam, J. H., Litchfield.
Race, R. H., North Egremont, Mass.
Rand, Mrs. P. C., Meriden.
Rengerman, Wm., East Granby.
Reynolds, C. C., Slocum, R. I.
Rhodes, R. H., Rocky Hill.
Rice, J. L., Ludlow, Mass., R. F. D.
Rice, J. W., Wilbraham, Mass.
Ripley, Louis A., Litchfield
Rise, J. G., Litchfield.
Risley, Chas. R., Silver Lane.
Roberts, C. S., Riverton.
Roberts, Earl C., Middletown, R. F. D. No. 2.
Roberts, E. J., Middletown.
Roberts, Horace, Moorestown, N. J.
Robertson, L. J., Manchester Green.
Rogers, E., Southington, R. D.
Rogers, F. D., Monson, Mass.
Rogers, Geo. H., Cheshire.
Rogers, James, Simsbury.

Rooke, J. R., Bloomfield.
Root, L. C., Farmington.
Root, T. H., Farmington.
Russell, S., Jr., Middletown.
Sanderson, Lucien, New Haven.
Savage, Clarence H., Storrs.
Savage, Theo. M., Berlin.
Savage, Willis I., Berlin.
Schmidt, E., New Canaan.
Schneider, Herman, New Canaan, Box 260.
Schultz,, C. H., Hartford.
Schultz, W. F. & Co., Hartford.
Schwink, J. G., Jr., Meriden.
Segur, Dr. G. C., Hartford.
Seward, Arthur I., Durham Center.
Shedd, G. V., Preston.
Sheldon, F. J., Enfield.
Shepardson, W. M., Middlebury.
Sherwood, N. H., Southport.
Silliman, J. F., New Canaan.
Simpson, W. A., Wallingford.
Sinclair, Alex., Stepney Depot.
Skinner, M. G., Higganum.
Slater, Geo. B., Manchester.
Slater, Geo. H., Glastonbury, R. F. D.
Smart, Geo. W., Silver Lane.
Smith, Geo. V., New Haven, 69 Church street.
Smith, G. W., Hartford, Box 38.
Smith, H. P., North Haven.
Smith, Joseph, West Cheshire.
Smith, J. Eliot, Wolfville, Nova Scotia.
Smith, J. H., Hartford, 249 Fairfield avenue.
Smith, Dr. L. A., Higganum.
Soby, Charles, Hartford, 855 Main street.
Southwick Oil Co., Rochester, N. Y.
Spence, Geo. E., Cheshire.
Spicer, G. W., Deep River.
Splettstoezer, Herman, New Britain, R. F. D. No. 2.
Stack, G. M., New Milford.
Staples, G. W., Hartford.
Steere, Enoch M., Chepachet, R. I.
Steere, Sayles B., Chepachet, R. I.
Stevens, A. T., Storrs.
Stevens, C. T., North Haven, R. D.
Stevens, H. C., East Canaan.
St. John, D. A., New Canaan.
Stocking, W. A. & Son, Weatogue.
Stocking, Wilbur F., Milford.
Stockwell, S. T., West Simsbury.
*Stone, D. E., Cheshire.
Stoughton, Lemuel, Warehouse Point.
Strumpf, George, Burnside.
Surface, Prof. H. A., Harrisburg, Pa.
Taber, F. J., South Windham.
Tanner, John E., Moosup, R. F. D. No. 1.
Tanner, Walter C., Voluntown.
Taylor, C. G., New Canaan.
Taylor, Edward J., Southport.
Taylor, J. M., Kensington.
Teachman, F. B., Farmington.
Terrell, C. L., Cheshire.
Terry, James, Hartford, 78 Wethersfield avenue.
The Vreeland Chemical Co., Little Falls, N. J.
Thomas, W. S., Groton.
Thompson, Chas. A., Melrose.

* Deceased.

Thompson, Chas. B., Moodus.
Thompson, Wm. H., East Haddam.
Tillinghast, G. G., Vernon.
Titus, Ellwood V., Glen Cove, L. I., N. Y.
Todd, E. A., Waterbury, R. F. D.
Toth, A. M., Wallingford, R. D. 2.
Tracy, M. E., Orange.
Trask, Abner, Silver Lane.
Treadwell, G. B., Storrs.
Tucker, F. E., Vernon.
Turney, Oliver, Fairfield.
Tuttle, S. L., Wallingford.
Tyler, S. A., Meriden, 455 Broad street.
Underwood, R. F., Mount Tom, Mass.
Usher, R. C., Plainville.
Vibberts, L. A., New Britain.
Viets, R. B., New Britain.
Vine Hill Farm, Elmwood.
Von Herff, B., New York, 93 Nassau street.
Wakeman, H. S., Saugatuck.
Wakeman, J. S., Saugatuck.
Wakeman, S. B., Saugatuck.
Walden, B. H., Experiment Station, New Haven.
Waldo, Harold B., Naubuc.
Wallace, E. J., Wallingford, West Quinnipiac street.
Waller, W. E., R. D., Chestnut Hill, Bridgeport.
Wiard, F. S., Yalesville.
Warncke, Louis H., Cannon Station.
Warner, E. C., Clintonville.
Watrous, J. L., Meriden.
Watson, John, Rockville, R. F. D.
Weed, T. L., New Britain.
Welch, G. H., Torrington.
Wells, Dudley, Wethersfield.
Wells, Dudley, 2d, Wethersfield.
Wells, W. W., South Woodstock.
West, S. B., Columbia.
Wheeler, Wilfrid, Concord, Mass.
Whitten, Geo. T., Hartford, 1100 Albany avenue.
Wiggin, Mrs. C. D., Providence, R. I., 40 Princeton avenue.
Wilcox, R. C. & Sons, Guilford.
Wilder, F. W., Watertown.
Wiley, Clarence H., Hartford, 122 Collins street.
Willard, S. F., Wethersfield.
Williams, A. W., New Britain.
Williams, F. B., Naugatuck.
Williams, Miss L. S., Hartford, 1492 Broad street.
Wills, H. H., Vernon Center.
Winsor, Thos. K., Greenville, R. I.
Wolcott, R. R., Wethersfield.
Wood, G. P., Ellington.
Wood, O. S., Ellington.
Woodhouse, S. N., Wethersfield.
Woodruff, C. V., Orange.
Woodruff, R. H., Guilford.
Wooster, R. H., Southbury, R. F. D. No. 2.
Wooster, W. A., New Britain, 118 Camp st.
Woody, C. A., Boulder, Colo.
Wright, John L., Middletown, 342 Main street.
Wright, W. O., Clinton.
Yale, Arthur C., Meriden.
Yarrington, Chas., Seymour.
Young, A. F. & Co., Boston, Mass.
Young, C. O., Yalesville.