

The Project Gutenberg eBook of Northern Nut Growers Association Report of the
Proceedings at the Fifth Annual Meeting

This ebook is for the use of anyone anywhere in the United States and most other parts of the world at no cost and with almost no restrictions whatsoever. You may copy it, give it away or re-use it under the terms of the Project Gutenberg License included with this ebook or online at www.gutenberg.org. If you are not located in the United States, you'll have to check the laws of the country where you are located before using this eBook.

Title: Northern Nut Growers Association Report of the Proceedings at the Fifth Annual Meeting

Editor: Northern Nut Growers Association

Release date: February 9, 2008 [eBook #24559]

Language: English

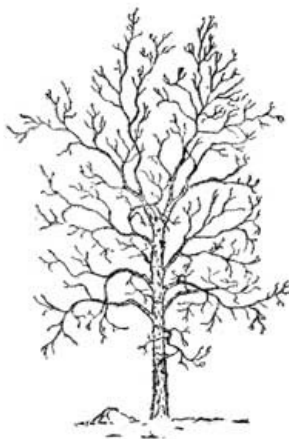
Credits: Produced by Marilyn Fraser-Cunliffe, E. Grimo and the
Online Distributed Proofreading Team at <http://www.pgdp.net>

*** START OF THE PROJECT GUTENBERG EBOOK NORTHERN NUT GROWERS ASSOCIATION
REPORT OF THE PROCEEDINGS AT THE FIFTH ANNUAL MEETING ***

DISCLAIMER

The articles published in the Annual Reports of the Northern Nut Growers Association are the findings and thoughts solely of the authors and are not to be construed as an endorsement by the Northern Nut Growers Association, its board of directors, or its members. No endorsement is intended for products mentioned, nor is criticism meant for products not mentioned. The laws and recommendations for pesticide application may have changed since the articles were written. It is always the pesticide applicator's responsibility, by law, to read and follow all current label directions for the specific pesticide being used. The discussion of specific nut tree cultivars and of specific techniques to grow nut trees that might have been successful in one area and at a particular time is not a guarantee that similar results will occur elsewhere.

**NORTHERN
NUT GROWERS ASSOCIATION
REPORT
OF THE PROCEEDINGS AT THE
FIFTH ANNUAL MEETING**



**EVANSVILLE, INDIANA
AUGUST 20 AND 21,**

TABLE OF CONTENTS

Officers and Committees of the Association	4
Members of the Association	5
Constitution and Rules of the Association	10
Proceedings of the Meeting held at Evansville, Indiana, August 20 and 21, 1914	11
Report of the Secretary-Treasurer	17
Proposed Score Card for Judging Nuts	20
Status and Possibilities of Nut Culture in the North, T. P. Littlepage, Washington, D. C.	23
Discussion on Cultivation and Fertilizers for Nut Trees	31
Personal Experiences with Hybridization of Nut Trees, Dr. Robert T. Morris, New York	37
The Use of Dynamite in Tree Planting, C. D. Evans, Delaware	43
Demonstration of Grafting and Budding Nut Trees, R. L. McCoy, Indiana, and Paul White, Indiana	47
Discussion on Seedling Trees	52
Seedling Nut Trees. The Nomenclature of Northern Pecans, Dr. J. Russell Smith, Pennsylvania	54
Practical Suggestions on the Production of Nut Orchards, Dr. C. A. Van Duzee, Georgia	61
The Function of the Class Journal, Ralph T. Olcott, <i>Editor American Nut Journal</i>	65
Discussion on Top Working Large Nut Trees	68
Report of the Committee on Nomenclature	73
Report of the Committee on Exhibits	74
Report of the Committee on Resolutions	74
Session at Enterprise	75
A Plea for the Planting of Nut Trees, Colonel C. K. Sober, Pennsylvania	85
Discussion on the Hazel or Filbert	88
Appendix:	
The History of the Persian Walnut in Pennsylvania, J. G. Rush, Pennsylvania	93
A Comparison of Northern and Southern Conditions in the Propagation of Nut Trees, J. F. Jones, Pennsylvania	96
Top Working Large Walnut Trees, W. C. Reed, Indiana	101
Interest in Nut Growing in the Intermountain States, Dr. L. D. Batchelor, Utah	104
Report from G. H. Corsan, Canada	105
Distribution of Persian ("English") Walnut Seedlings in Michigan	107
Examples of Some Recent Correspondence	109
Preliminary Report on the Persian Walnut, by the Secretary	114
Correspondents and Others Interested in Nut Culture	118
Some Recent Literature on Nuts and Nut Growing	124
Present at the Fifth Annual Meeting of the Northern Nut Growers Association	126
Annual Meeting in 1915	127

OFFICERS OF THE ASSOCIATION

<i>President</i>	J. RUSSELL SMITH	University of Pennsylvania
<i>Vice-President</i>	W. C. REED	Indiana
<i>Secretary and Treasurer</i>	W. C. DEMING	Georgetown, Connecticut

COMMITTEES

Executive
T. P. LITTLEPAGE

R. T. MORRIS
AND THE OFFICERS

Nomenclature

W. C. REED
R. T. MORRIS
E. R. LAKE
C. A. REED
R. L. MCCOY

Membership

W. C. DEMING
LEON D. BATCHELOR
C. H. PLUMP

Hybrids

R. T. MORRIS
J. R. SMITH
C. P. CLOSE

Promising Seedlings

T. P. LITTLEPAGE
C. A. REED
J. RUSSELL SMITH

Press and Publication

RALPH T. OLCOTT
T. P. LITTLEPAGE
W. C. DEMING

STATE VICE-PRESIDENTS

Arizona	C. R. Biederman	Garces
California	Claude D. Tribble	Elk Grove
Canada	G. H. Corsan	University of Toronto
Connecticut	Newman Hungerford	Torrington, R. 2, Box 76
District of Columbia	T. P. Littlepage	Union Trust Building, Washington
Florida	H. Harold Hume	Glen Saint Mary
Georgia	J. B. Wight	Cairo
Illinois	E. A. Riehl	Alton
Indiana	R. L. McCoy	Lake
Ireland	Dr. Augustine Henry	5 Sanford Terrace, Ranelagh, Dublin
Kentucky	A. L. Moseley	Calhoun
Maryland	C. P. Close	Department of Agriculture, Washington
Massachusetts	James H. Bowditch	903 Tremont Building, Boston
Michigan	H. L. Haskell	209 North Rowe St., Ludington
Minnesota	C. A. Van Duzee	Minneapolis
Missouri	Alfred E. Johnson	McBaine, R.1
New Jersey	C. S. Ridgway	Lumberton
New York	Dr. Ira Ulman	213 West 147th St., New York City
North Carolina	W. N. Hutt, State Horticulturist	Raleigh
Ohio	Harry R. Weber	601 Gerke Building, Cincinnati
Pennsylvania	J. G. Rush	West Willow
Tennessee	Egbert D. Van Syckel	Trenton
Utah	Leon D. Batchelor, Horticulturist, State Agricultural College	Logan

MEMBERS OF THE NORTHERN NUT GROWERS ASSOCIATION

ARIZONA

C. R. Biederman, Garces

CALIFORNIA

Tribble, Claude D., Elk Grove

Tucker, T. C., Manager California Almond Growers' Exchange, Sacramento

CANADA

Corsan, G. H., University of Toronto

Crow, J. W., Professor of Pomology, Ontario Agricultural College, Guelph

Dufresne, Dr. A. A., 217 St. Christopher St., Montreal

Fisk, Dr. George, 101 Union Ave., Montreal

Henderson, Stuart, Victoria, British Columbia, Box 77

Saunders, W. E., 352 Clarence St., London, Ont.

CONNECTICUT

Barnes, John R., Yalesville

Deming, Dr. W. C., Georgetown

Deming, Mrs. W. C., Georgetown

Hungerford, Newman, Torrington, R. 2, Box 76

Ives, Ernest M., Sterling Orchards, Meriden

Miller, Mrs. Charles, 32 Hillside Ave., Waterbury

Morris, Dr. Robert T., Cos Cob, R. 28, Box 95

Plump, Charles H., West Redding

Pomeroy, E. C., Northville

DELAWARE

Evans, C. D., care of DuPont Powder Company, Wilmington

Lord, George Frank, care of DuPont Powder Company, Wilmington

DISTRICT OF COLUMBIA

Close, Prof. C. P., Pomologist, Department of Agriculture, Washington

Lake, Prof. E. R., Pomologist, Department of Agriculture, Washington

+Littlepage, T. P., Union Trust Building, Washington

Kinsell, Miss Ida J., 1608 17th St., Washington

Orr, Herbert R., Evans Building, Washington

Reed, C. A., In Charge of Nut Culture Investigations, Department of Agriculture,
Washington

*Van Deman, Prof. H. E., Washington

FLORIDA

Hume, H. Harold, Glen Saint Mary

Prange, Mrs. N. M. G., Jacksonville

Simpson, Ray C., Monticello

GEORGIA

Wight, J. B., Cairo

ILLINOIS

Aldrich, H. A., Neoga

Heely, Dr. O. J., St. Libory

Poll, Carl J., 1009 Maple St., Danville

Potter, Hon. W. O., Marion

Riehl, E. A., Alton

Spencer, Henry D., Room 1, Opera House Block, Decatur

Webster, H. G., 450 Belmont Ave., Chicago

INDIANA

Baldwin, C. H., State Entomologist, 130 State House, Indianapolis

Burton, Joe A., Mitchell

Hutchings, Miss Lida G., 118 Third St., Madison

Knapp, Dr. A. J., Evansville

Lockwood, E. E., Poseyville

McCoy, R. L., Lake

Niblack, Mason J., Vincennes

Reed, M. T., Vincennes
Reed, W. C., Vincennes
Schmidt, Hugh C., Evansville
Simpson, H. D., Vincennes
Wilkinson, J. F., Rockport

IRELAND

Henry, Dr. Augustine, 5 Sanford Terrace, Ranelagh, Dublin

KENTUCKY

Matthews, Prof. C. W., Horticulturist, State Agricultural Station, Lexington
Moseley, A. L., Bank of Calhoun, Calhoun

MARYLAND

Holmes, F. S., Agricultural Experiment Station, College Park

MASSACHUSETTS

+Bowditch, James II., 903 Tremont Building, Boston
Hoffmann, Bernhard, Overbrook Orchard, Stockbridge
Knight, Charles F., Rowley
Mason, Harry R., Falmouth
Rich, William P., Secretary State Horticultural Society, 300 Massachusetts Ave., Boston
Smith, Fred A., 39 Pine St., Danvers
Vaughan, Horace A., Peacehaven, Assonet
White, Warren, Holliston

MICHIGAN

Haskell, H. L., 209 N. Rowe St., Ludington

[Pg 7]

MINNESOTA

Powers, L. L., 1200 Lexington Ave., N. St. Paul
Van Duzee, Col. C. A., St. Paul

MISSOURI

Johnson, Alfred E., McBaine, R. 1

NEW JERSEY

Dietrick, Dr. Thomas S., 12 West Washington Ave., Washington
Foster, Samuel F., Secretary North Jersey Society for the Promotion of Agriculture, 100
Broadway, New York City
Marston, Edwin S., Florham Park, Box 72
Mergler, C. W., Hackensack Road and Mt. Vernon St., Ridgefield Park
Putnam, J. H., Vineland
Ridgeway, C. S., "Floralia," Lumberton
Roberts, Horace, Moorestown
Steele, T. E., Pomona Nurseries, Palmyra
Walter, Dr. Harry, Hotel Chalfonte, Atlantic City

NEW YORK

Abbott, Frederick B., 419 Ninth St., Brooklyn
Ackerly, Orville B., 243 W. 34th St., New York City
Baker, Dr. Hugh P., Dean of State College of Forestry, Syracuse
Baker, Prof. J. Fred, Director of Forest Investigation, State College of Forestry, Syracuse
Brown, Ronald K., 320 Broadway, New York City
Bruce, W. Robert, Brick Church Institute, Rochester
Church, Alfred W., Portchester
Ellwanger, Mrs. W. D., 510 East Ave., Rochester
Fullerton, H. B., Director Long Island Railroad Experiment Station, Medford, L. I.
Hickox, Ralph, 3832 White Plains Ave., New York City
Hans, Amedee, Superintendent Hodenpyl Estate, Locust Valley, L. I.
Haywood, Albert, Flushing
Hicks, Henry, Westbury, L. I.
Holden, E. B., Hilton
+Huntington, A. M., 15 W. 81st St., New York City
Keeler, Charles E., Chichester and Briggs Aves., Richmond Hill
Miller, Mrs. Seaman, care of Mr. Miller, 2 Rector St., New York City
Murphy, P. J., 115 Broadway, New York City, care of Ford, Bacon & Davis
Olcott, Ralph T., Ellwanger & Barry Building, Rochester
Pomeroy, A. C., Lockport
Reynolds, H. L., 2579 Main St., Buffalo
Rice, Mrs. Lillian McKee, Adelano, Pawling
Stephen, Prof. John W., Assistant Professor of Silviculture, State College of Forestry,
Syracuse
Storrs, A. P., 117 Front St., Owego
Teele, A. W., 30 Broad St., New York City

Teter, Walter C., 10 Wall St., New York City
Tuckerman, Bayard, 118 E. 37th St., New York City
Turner, K. M., 220 W. 42nd St., New York City
Ulman, Dr. Ira, 213 W. 147th St., New York City
Wile, Th. E., 1012 Park Ave., Rochester
Williams, Dr. Charles Mallory, 48 E. 49th St., New York City
+Wissmann, Mrs. F. deR., Westchester, New York City

NORTH CAROLINA

Glover, J. Wheeler, Morehead City
Hutt, Prof. W. N., State Horticulturist, Raleigh
Van Lindley, J., J. Van Lindley Nursery Company, Pomona

OHIO

Dayton, J. H., Storrs & Harrison Company, Painesville
Denny, Mark E., Middletown
Ford, Horatio, South Euclid
Johnston, I. B., Cincinnati, Station K
Miller, H. A., Gypsum
Rector, Dr. J. M., Columbus
Weber, Harry R., 601 Gerke Building, 123 E. 6th St., Cincinnati
Witte, O. F., Amherst
Yunck, E. G., 710 Central Ave., Sandusky

PENNSYLVANIA

Ballou, C. F., Halifax
Doan, J. L., School of Horticulture, Ambler
Druckemiller, W. C., Sunbury
Fagan, Prof. F. N., Department of Horticulture, State College
Foley, John, Forester, Pennsylvania Railroad Company, 513-A, Commercial Trust Building,
Philadelphia
Hall, L. C., Avonia
Hildebrand, F. B., Duquesne
Hoopes, Wilmer W., Hoopes Brothers and Thomas Company, Westchester
Hutchinson, Mahlon, Ashwood Farm, Devon, Chester County
+Jones, J. F., Lancaster, Box 527
Keely, Royal R., 1702 Mt. Vernon St., Philadelphia
Knipe, Irwin P., Norristown
Lovett, Mrs. Joseph L., Emilie, Bucks County
Martz, Walter C., Lebanon, care of Lebanon National Bank
Meehan, S. Mendelson, Thomas Meehan & Sons, Germantown
Moss, James, Johnsville, Bucks County
Preslar, C. F., 524 Grand View Ave., Pittsburgh
Rush, J. G., West Willow
Schmidt, John C., 900 So. George St., York
Smitten, H. W., Rochester Mills, R. 2
+Sober, Col. C. K., Lewisburg
Thomas, Joseph W., Jos. W. Thomas & Sons, King of Prussia P. O.
Twaddell, E. W., Evergreen Nurseries, Westtown
Webster, Mrs. Edmund, 1324 So. Broad St., Philadelphia
Wister, John C., Wister St. and Clarkson Ave., Germantown
Wright, R. P., 235 W. 6th St., Erie

TENNESSEE

Van Syckel, Egbert D., D.D.S., Trenton

UTAH

Batchelor, Leon D., Horticulturist, Utah Agricultural College, Logan
Pendleton, M. A., 3 Mozart Apartments, Salt Lake City

VIRGINIA

Crockett, E. B., Lynchburg
Parish, John S., Eastham, Albermarle County
Roper, W. N., Arrowfield Nurseries, Petersburg
Shackford, Theodore B., care of Adams Brothers-Paynes Company, Lynchburg
Smith, Dr. J. Russell, Roundhill
Von Ammon, S., Fontella

WEST VIRGINIA

Hartzell, B. F., Shepherdstown

+ Life member
* Honorary member

CONSTITUTION AND RULES OF THE NORTHERN NUT GROWERS ASSOCIATION

Name. The society shall be known as the NORTHERN NUT GROWERS ASSOCIATION.

Object. The promotion of interest in nut-producing plants, their products and their culture.

Membership. Membership in the society shall be open to all persons who desire to further nut culture, without reference to place of residence or nationality, subject to the approval of the committee on membership.

Officers. There shall be a president, a vice-president, and a secretary-treasurer; an executive committee of five persons, of which the president, vice-president and secretary shall be members; and a state vice-president from each state represented in the membership of the association.

Election of Officers. A committee of five members shall be elected at the annual meeting for the purpose of nominating officers for the subsequent year.

Meetings. The place and time of the annual meeting shall be selected by the membership in session or, in the event of no selection being made at this time, the executive committee shall choose the place and time for the holding of the annual convention. Such other meetings as may seem desirable may be called by the president and executive committee.

Fees. The fees shall be of two kinds, annual and life. The former shall be two dollars, the latter twenty dollars.

Discipline. The committee on membership may make recommendations to the association as to the discipline or expulsion of any member.

Committees. The association shall appoint standing committees of three members each to consider and report on the following topics at each annual meeting: first, on promising seedlings; second, on nomenclature; third, on hybrids; fourth, on membership; fifth, on press and publication.

[Pg 11]

Northern Nut Growers Association

FIFTH ANNUAL MEETING

AUGUST 20 AND 21, 1914

EVANSVILLE, INDIANA

The fifth annual meeting of the Northern Nut Growers Association was held in the Evansville Business Association Hall at Evansville, Indiana, beginning August 20, 1914, at 10 A. M., President Littlepage presiding.

THE PRESIDENT: The fifth annual meeting of the Northern Nut Growers Association will now come to order, and I have the pleasure of introducing to you Dr. Worsham who represents the Mayor of Evansville.

DR. WORSHAM: Ladies and Gentlemen of the Northern Nut Growers Association:

Some men are born to greatness and others have it thrust upon them. I stand in the position this morning of a man that has had his greatness thrust upon him. The secretary of the Evansville Business Association, who frequently takes liberties with me, told me a few minutes ago that, in the absence of our Mayor, I was to welcome you.

We extend to you a most cordial welcome to our thriving city. We are always glad to have associations of this kind meet with us, because they bring to us new ideas and new thoughts.

As I looked upon those nuts this morning my mind returned to the time when I was a boy, when my father, although a splendid business man who took advantage of most of the opportunities that presented themselves to him, neglected one of the best he had in selling one hundred and twenty-five acres of land across the Ohio River here, upon which there grow a number of native pecans. The only time we ever had any pecans from that place was when we got a German over there, direct from Germany. He couldn't speak a word of the English language but my father said to him, "Keep the boys out and get some pecans." He went down there with a dog and a gun and we got more nuts that year than ever before or since.

[Pg 12]

This city has the distinction, as I have learned since I came into the hall, of being the center of the nut growing district of the northwest. Another honor that our splendid city has. As you know we are here in the largest hardwood lumber market in the world; we have the cheapest and best

coal of any place in the world; we have the greatest river facilities of any city along the Ohio River; we have six main arteries of railroad into our city, so it is easy to manufacture, easy to ship and easy to dispose of the products of our business in this grand, beautiful and well situated city.

Now gentlemen, remember that Dr. Worsham's telephone is 213, that I am representing the Mayor and Business Men's Association, and that we are perfectly delighted to have you with us. I hope you will have a good time. I thank you.

THE PRESIDENT: Dr. Robert T. Morris will respond first to Dr. Worsham and afterwards Mr. Potter.

DR. MORRIS: Mr. Chairman, Representatives of the Business Men's Association, Ladies and Gentlemen: In Chicago, I met an Englishman who told me he was going to "Hevansville." I did not know just where he meant but after hearing Dr. Worsham's speech, I understand.

This is no doubt one of the coming cities of the world. You have here the field that was fought for by the early settlers and the Indians, and the field that is to be the scene of many wars in days to come.

In the days to come, perhaps a thousand years from now, there may be four or five people to the acre living under conditions of intensive cultivation. This is just the sort of land that will support a population to the best advantage, and you have here conditions suitable for the crop that is to be the crop of the future. People do not fully utilize nature's resources until there is need for doing so. We have depended upon the cereals and the soft fruits and things of that sort, just as the early Indian depended upon the deer and the beaver. The time came when his beaver and his deer disappeared. We, like the Indian, take up first the development of simplest things in plant life. Later, under intensive cultivation, we shall be enabled to support a very much larger population on fewer acres.

We find that nuts contain starch and proteids in such proportion that they will fairly well take the place of meats and of other starches.

Now, this is not an opinion which is individual alone, but is the conclusion of authorities after examination of data. Chemical examination of nuts has been made by our Department of Agriculture at Washington and by chemists elsewhere. The nut crop, then, is to be perhaps the staple food crop for the people of the United States one thousand years from now, when we are depending upon methods of intensive cultivation for the annual plants.

[Pg 13]

It is true, of course, that three thousand years before Christ, the Emperor Yu developed in China a system of agriculture that is better than any European or American system today both as to production and transportation—perhaps including distribution. At the present time China is supporting a larger population to the acre than any other country.

All this comes to mind in response to the address of welcome by Dr. Worsham. Here at this point of our United States, there is already a center of the new movement for the development of the great future food supply of the world, a nut nursery center. Here we find also another feature of great consequence from the economic and politic side. We find honest nurserymen. That is a very important matter. As nations advance in culture the moral side develops, and as the ethical side develops there will be better representatives in the trades and in all callings. The nursery business is near to nature and for that reason simple people have assumed that nurserymen were nearly as white as snow. Those of us who have had some experience with them, know what it means to find honest ones. We deeply appreciate the fact that in this part of the country honest nurserymen are making a name for themselves and for America.

I know Evansville not only in this way that I have been speaking of but also in a professional way because of its doctors. There are two or three or four of the Evansville doctors—you do not know that as members of this Association, but I know it as a member of our great profession—who have placed Evansville upon the map. This city is best known throughout the United States in the medical profession because of some three or four Evansville doctors of the present and past.

Therefore it is with a double pleasure that I respond to the address of welcome given by Dr. Worsham.

THE PRESIDENT: We will now hear from Hon. W. O. Potter of Marion, Illinois.

MR. POTTER: Mr. Chairman, Ladies and Gentlemen: This meeting to me is something out of the ordinary. I can remember that when I was a boy I knew every good hickory nut tree in the community where I was raised, but after I left my native heath and went into the practice of law and got into politics, I forgot all about the hickory trees until just a few years ago when, by accident, I picked up a nut journal. I don't know how it came into my possession but I got it and I read some article on the Indiana pecan, and I read an article on the development of nut trees in the south, and I got interested and commenced studying the subject. I wrote to the Department of Agriculture and got some articles on nut culture from Mr. Reed and others and became still more interested.

[Pg 14]

However, nut culture doesn't mix well with politics or law, and, therefore, it is more or less of a side issue with me. I have gone into nut culture only on a small scale. On my lot in the city of Marion where I live I have set out some pecan trees, and after a hard battle in court all day it is quite a pleasure to get home in the evening and to pull off my coat and to get on some old clothes and go out among my trees. There is nothing better to get one's mind off the daily combat of life.

I was very much impressed with Dr. Worsham's address of welcome and also Dr. Morris's response. I believe that this country is beginning a new era; we are going to experience a metamorphosis. I think we will shed this old shell, take on a new dress and start afresh.

I presume it is here as in Illinois where I was raised. Our farmers came from the south principally, and about all they knew of farming in those early days was to raise corn and some tobacco, but mostly, through our section, corn, and in a few years they corned the land to death. You can go through our country and see old hillsides red with clay and farmers barely eking out an existence. Those people will never be much better off than they are now, but as they pass off and the newer generation comes on, departments of agriculture and horticulture will be organized in the universities, where it has not already been done, and the farmers will be a class of people right up to date. Modern civilization tends to drive the sons back to the farm and that is overdone sometimes. People think they want to go to farming when they don't. We ought not to take up this idea "back to the farm" too largely at once but gradually grow into it. I know what it is to be on the farm and work hard day after day; there is no chance for us under the old conditions; but in higher forms of agriculture or horticulture the American people will find the greatest benefits and pleasures. It gets monotonous for a man who has a profession to stick to that all the time, day in and day out without change, week in and week out, year in and year out, and he gets to driving in a rut. If he will take up a side line it will do him much good. I have gone into nut growing for recreation, not profit, and I think it is an occupation most conducive to a strong mind and a healthy body.

[Pg 15]

This country is getting to a point where we are going to have more producers. We have too many consumers in this country. We talk about the tariff and whether it raises or lowers the price of articles. That is neither here nor there. The thing that will control the prices of foods is the amount of food produced. As Dr. Morris said awhile ago we don't need so much meat as we used to think we needed nor so many other kinds of foods. All the food elements that keep man alive and his body in a healthy condition are contained in nuts, fruits and things of that character, and this to a great extent will eliminate the need for meats. Meat is getting scarce and high. Beef steaks and pork chops are a great deal higher than they formerly were and some of us who are not making as much money in our professions as we need will have to find something else to take the place of them. It seems to me that the solution of the problem is in the production of nuts. The peanut is being manufactured in a great many ways and we are using them on our tables daily, and it will only be a few years when the pecan will be fixed up in as many different ways.

The hickory nut I think is another great nut of this country and great attention ought to be paid to it. Its culture is still in its infancy. I believe that in a few years the hickory nut and pecan will help solve the food problem.

I would not know how to graft any kind of a tree. What trees I need I buy from some good responsible nurseryman and let him do the work of grafting.

I am glad to be a member of this association, although this is the first meeting I have ever attended. I get a lot of enthusiasm from the other members and I have had lots of information from being a member of this association.

I want to thank you, ladies and gentlemen, for listening to my remarks which I had no thought of making. What I have said has been at random.

DR. MORRIS: When I was speaking a minute ago I left out one idea that is clever, and I want to get it in although it belongs to Professor Smith. When we get to the point of intensive cultivation we are to have the two-story farm. We will have the tree which will be the second story and will furnish our meat, and underneath we will have our small crops. In that way we will have a two-story farm.

[Pg 16]

THE PRESIDENT: That is a very good idea, Dr. Morris, and I am glad you got it in. We are very glad to have the remarks by Dr. Morris and Mr. Potter. Mr. Potter has been in the legislature and we are pleased to know that there is one member of a legislature in the United States who does not know how to graft.

MR. POTTER: I am sorry you said that. I wish you had left that out. I was there when Lorimer was elected.

THE PRESIDENT: There is nothing that would cure a legislature of grafting quicker than horticulture.

The chair desires to make an announcement of the program. This morning, there will be the usual talks and papers. We will adjourn at 12 o'clock and meet again at 1 o'clock for the afternoon session until 5 o'clock, at which time the members of the Association and visitors are invited by some of the citizens to take an automobile ride to see the city and the different industries, which I am sure we will all be glad to do. This evening at 8 o'clock there will be a lecture by Mr. C. A. Reed of the Department of Agriculture and he will show us one of the best collections of lantern slides in existence. Everybody is invited, whether members of the Association or not, including the ladies and children.

Tomorrow morning at 7:15 we will take the Rockport traction car here, getting off at Sandale, at which place we will be met by wagons and we will go to Enterprise where you will see a great number of seedling pecan trees of all ages. They are bearing, the limbs hanging down close to the ground, and there will be an excellent opportunity to see the nuts on the trees at close range.

A gasoline boat will meet us at Enterprise between 12 and 1 and we will return to Evansville tomorrow evening, via the river, stopping at proper points, and be in session again at 8 o'clock, finishing up the business of the Association with a lecture by Col. C. K. Sober of Pennsylvania, the great chestnut producer. He has a great many lantern slides and will tell you many things of interest. He is one man who is working earnestly and tirelessly to combat the chestnut blight.

The next thing on the program this morning will be the report of the secretary of the Association, Dr. W. C. Deming.

THE SECRETARY: I have the honor to report as follows:

[Pg 17]

REPORT OF THE SECRETARY-TREASURER

Deficit, date of last report	\$105.05	
Expenses:		
Washington meeting	10.46	
Reporting convention	45.00	
Printing report	217.58	
Miscellaneous printing	23.25	
Postage and stationery	42.84	
Membership A. P. S.	2.00	
Stenographer and multigraphing	7.20	
Express, carting, freight	3.36	
Exchange on checks	.90	
Telephone	.25	
	————	\$457.89
Receipts:		
Dues	\$273.00	
Postage	5.07	
Advertisements	69.05	
Contributions	104.00	
Sale of report	4.00	
Bills receivable	10.00	
	————	\$465.12
Balance on hand	\$7.23	

It was necessary to take out a membership in the American Pomological Society in order to be eligible to receive the bronze Wilder medal awarded for meritorious exhibit of nuts at the Washington convention.

In response to an appeal sent out by the secretary for assistance in defraying the expenses of publishing the report, thirteen members contributed. There was one contribution of fifty dollars, one of twenty-five dollars, several of five dollars and others of lesser sums.

Two advertisements are still not paid for.

It is evident that the income of the association from regular sources is not at present sufficient to pay the expense of printing the annual report, in addition to the necessary expenses of maintenance. It may be possible to reduce the expense of printing the report by omitting cuts and by printing a smaller number of reports, though the saving from the latter expedient would be small.

It seems to be the opinion of some of our members, and it is certainly a good business principle, that we should not undertake the issuing of an annual report until the funds for paying for it are in hand. I would renew my suggestion of last year that a proper committee be authorized to take measures for collecting the funds necessary for this purpose. During the past year a few of the members voluntarily constituted themselves a committee and succeeded in collecting a considerable sum from advertisements which appeared in the report.

It would certainly be a pity to interrupt the regular appearance of the report of our annual meeting.

Seventy-five new members were added during the year, or rather during the nine months elapsed since the meeting at Washington. Since the organization of the Association 212 persons have become members. We have now 132 paid-up members. I feel certain that some of those who have not paid up do not desire to sever their connection with the Association. There have been but three resignations, one of whom gave as his reason "persistent knocking by members of the Association of pecan promotions in the South." No death among our members have come to the secretary's knowledge.

[Pg 18]

Many new members came in at the Washington meeting. A number of others joined as a result of the publicity given the Association by several articles from the pen of one of the members which appeared in various publications. A still larger number appeared to be attracted by the offer

which the secretary took upon himself to make, of the two first reports as a premium for new members on the payment simply of the postage for forwarding them. This action of the secretary was generally approved by the members of the executive committee, though there was some criticism from one or two members of the Association. But it seemed to the secretary better to make this attraction for new members, and to get out the reports where they might do some good, rather than to have so many of them sagging the beams in his attic. The secretary would suggest that in the future he be authorized to offer a complete set of the reports to all new life members, and to other new members the opportunity to buy the back reports at a reduced sum, say 50 cents, or even 25 cents each. This would give a little income toward the expenses of the Association. The copies of our reports are assets and should be realized on.

The field meeting held at the farm of Dr. Robert T. Morris at Stamford, Connecticut, on August 4 was well attended and was instructive and enjoyable. A full account of the meeting will appear in the *American Nut Journal*.

The recent establishment of this journal, partly through the efforts of members of the Association, is a cause for congratulation. We have once more a high class and attractive monthly periodical in which to exchange experiences and by which the public may be reached. Every member of the Association should feel a personal interest in making this journal a success and should seek the opportunity to send to the editor any items of interest to nut growers. Anything relating to this subject is of interest to the enthusiast. The more personal such a journal is made the better. It should not be monopolized by the so-called experts. Everyone interested in nut growing ought to feel it a duty, and consider it a privilege, to communicate scraps of information, little suggestions and, above all, questions and requests for information and advice. Even a little controversy would add spice. Too much harmony becomes insipid. This journal is as much for scrappers as for the men of peace. And, let me quickly add, the women too, suffragists, suffragettes, and antis and those who don't care. Twelve women are members of the Association and women are going to take a large share in nut growing and find in it a profitable and interesting occupation.

Arrangements are being made with the publishers of the *American Nut Journal* whereby membership in our Association may include subscription to the *Journal* at a very small increase in the cost of membership. If we can offer membership and the *Journal* for \$2.50 in advance and the back reports for 50 cents apiece, or the three reports for \$1, and send notice of this to our list of about a thousand correspondents, we ought to increase considerably our membership and do good to the world.

Our rule that membership shall begin with the calendar year always gives rise to some misunderstanding. Those who come in at the time of the annual meeting, or between it and the end of the year, do not like to pay another fee along in January. If there is no objection the secretary will hereafter inform each applicant for membership that membership expires with the calendar year, that membership may be taken out for the present or the coming year, and that membership entitles necessarily only to the publications issued during the year for which membership is taken out. In other words the proceedings of this meeting will be published in 1915 and members for 1914 will not be entitled to it unless paid up for 1915.

[Pg 19]

The investigation of the Persian walnut trees in the East is still going on but the results have not been collated.

I suggest the appointment of a committee to revise our constitution and rules. These have so far served our purpose fairly well but, in the opinion of the secretary, they now need modification and amplification.

I would recall to the attention of the members our present rule that all papers read before it are the property of the Association.

In conclusion the secretary would like to ask each member to help increase the prosperity and the usefulness of the Association by getting new members, by getting advertisements for the annual report, and by paying his annual dues promptly. It is a waste of any nut grower's time to have to dun a lot of careless people.

THE PRESIDENT: The chair will now entertain a motion to approve the secretary's report.

PROFESSOR SMITH: The Northern Nut Growers Association has been very fortunate in many things and especially in its selection of a secretary. The services he has so faithfully rendered are very much appreciated by the Association, and I move the report be accepted.

[Seconded and carried. Also moved, seconded and carried that the secretary be authorized to sell back numbers of the reports at a reduced price.]

DR. VAN DUZEE: I would like to say that a most important thing has been overlooked, and that is that the chair should appoint a committee to lift the load of financing the work of the Association from the secretary's shoulders.

THE PRESIDENT: It is very flattering to suggest that the chair is competent to appoint that committee. Do you make it in the form of a motion, Dr. Van Duzee?

DR. VAN DUZEE: Yes sir, I make that as a motion.

[Seconded and carried.]

PROPOSED SCORE CARDS FOR JUDGING NUTS

Score-Card (Plates, Trays or Cartons)—Black Walnuts, Butternuts and Hickorynuts

General Values:	
Size	10
Form	5
Color	5
Shell Values:	
Thinness	15
Cracking	20
Kernal Values:	
Plumpness	5
Color	10
Flavor	10
Quality	20
	—
	100

Note: For insect or fungous injuries deduct 5-10 points.

Score-Cards—Chestnuts

General Values:	
Size	20
Form	5
Color	10
Freedom from fuzz	10
Size of basal scar	10
Kernal Values:	
Flavor	10
Quality of kernal	25
Thinness and quality of inner skin	10
	—
	100

Note: For insect or fungous injuries deduct 5-20 points.

Score-Card—Filberts

General Values:	
Size	15
Form	5
Color	5
Shell Values:	
Thinness	15
Kernal Values:	
Plumpness	10
Freedom from fibre	10
Color	5
Flavor	15
Quality	20
	—
	100

Note: For insect or fungous injuries deduct 5-10 points.

Commercial Pecans

General Values:	
Size	20
Form	5
Color	5
Shell Values:	
Thinness of shell	10
Cracking quality	20

Kernal Values:	
Plumpness of kernal	20
Color of kernel	5
Quality	15
	—
	100

Score-Card (Plates)—Persian Walnuts

General Value:	
Size	10
Form	10
Color	10
Shell Values:	
Thinness of shell	10
Smoothness of shell	5
Sealing	10
Kernal Values:	
Plumpness	5
Color	10
Flavor (sweetness, nuttyness)	10
Quality (crispness, richness)	20
	—
	100

Note: For insect or fungus injuries deduct 5-15 points.

DR. MORRIS: I would say that this is a very excellent system as a basis for judging. We must at all times have in mind the idea of working to keep the quality very high. The reason for that is because the tendency has been in the other direction. Appearance has been rated very high, especially on the Pacific Coast, which is one of the centers in nut raising today. I observed, while on a trip from southern California to Washington and Oregon, that people all spoke about the beauty of the nuts, and said little of quality. They will show you great, handsome, bleached nuts, and some of the very poorest in quality are the ones about which they talk the most, and they recognize this fact among themselves. I haven't been looked upon with favor when telling them frankly that a certain walnut ought not to be put on the market at all on account of its quality. They resented that attitude on my part, but later when I was standing nearby I overheard rival walnut growers talking to each other. One said to another, "That is a handsome walnut, but you will have to hire an awful good talker to get it on the market." They resented my criticism and my judgment but among themselves said, "You have got to have an awful good talker to get that nut on the market."

[Pg 22]

It is this matter of quality that must stand first among nuts as among men. Many know that there is no better pecan than the San Saba. That is standard for quality, yet it is not regarded as being so desirable as some of the others because of its small size. We must always keep in mind the quality rather than size and appearance. Of course, we like things that look well but that side will be taken care of incidentally in the course of the development of the subject.

PROFESSOR SMITH: Dr. Morris, I should like to ask you a few questions. Is it not the same as it is in the apple and peach market? You know in that appearance counts for a great deal. Are you sufficiently acquainted with the subject to say we will be safe in growing a nut that is second class in appearance but first class in quality?

DR. MORRIS: I am glad Professor Smith brought up that point. There is just one way to approach the matter. Take a fine, handsome, large English walnut, that has been bleached, and has lost quality in the process. Growers have gone to a great deal of trouble to get it on the market. Put alongside of it a small, thin-shelled, high quality walnut that has not been bleached, and tell the dealer who is to sell those two nuts that the great big handsome nut is to sell for 15 cents a pound, and the ugly little one is to bring 30 cents a pound. That will attract the attention of people to the good nuts. You can force people into having good sense, through the exercise of a bit of dexterity in applied psychology.

THE PRESIDENT: Dr. Morris's remarks are very well taken, because nuts are to be eaten and not to be looked at. Is there any further discussion on this subject? If not, we will pass to the next.

THE SECRETARY: The next thing on the program is the appointment of committees. The advisability of amending the constitution and rules has been already referred to. They have served our purpose pretty well up to now but we have outgrown them. In order to expedite matters and get to the real business of this Association, as this constitution is going to be amended anyway, I would like to move that the rules about the appointment of committees be suspended and that the chair be authorized to appoint the necessary committees. This includes the committees which the rules direct shall be elected, but that takes a long time and I move that the chair appoint these different committees.

[Pg 23]

THE PRESIDENT: Do I hear a second to that motion?

A MEMBER: I second the motion.

THE PRESIDENT: It has been moved and seconded that the rules requiring that these committees be elected be suspended, and the chair be authorized to appoint the different committees. The chair holds that it will take three fourths of the members present to suspend the rules. Is there any discussion about this?

MEMBERS: We are ready for the question.

THE PRESIDENT: All in favor of the motion made by Dr. Deming, make it known by saying aye.

[Vote taken.]

THE PRESIDENT: Those opposed, by the same sign.

[None.]

THE PRESIDENT: The motion is carried that the chair appoint the different committees, and they will be announced at the proper time.

The next thing on the program is a paper by the President. I will ask Dr. Morris to take the chair while I read what I have to say.

STATUS AND POSSIBILITIES OF NUT CULTURE IN THE NORTH

T. P. LITTLEPAGE, WASHINGTON, D. C.

The purpose of the Northern Nut Growers Association is to stimulate the production of nuts in the North. We distinguish the North from the South in this regard not because we feel any less interest in the nut industry in the South. The man who once becomes a nut enthusiast is no respecter of Mason's and Dixon's Line or any other line that separates him from an interesting nut tree or from a section in which nuts may be successfully grown. His local interest, however, will naturally be around his own dooryard and neighborhood. So we speak of northern nut culture and northern nut trees because we live in the North and because this is the section of the United States that needs at the present time the most intelligent direction. The South has been forging ahead for a number of years in this field. In fact, pecan culture promises to become second only to the cotton industry in many sections of that country and interest in its possibilities has attracted to it many conscientious, able and prominent horticulturists who are today engaged in pecan growing in the South and who are doing much to put the pecan industry on an honest and intelligent basis. These men have become specialists in the pecan industry and they know more about it than we do in the North. Consequently they do not need our assistance, even if we were able to give it, and, therefore, without any fear of our being criticised for using the adjective "northern" we can limit our investigations and discussions to nut culture in the northern part of the United States with a full knowledge that our southern brethren can take care of themselves, and, in addition, can render us much valuable assistance which assistance we most cheerfully invite.

[Pg 24]

At this point, however, in connection with the use of the terms "northern" and "southern," it may be relevant to make a few observations as to the possibilities in either section. While it is true that the South has a long start of the North in pecan culture, yet the North affords an opportunity for the cultivation of nuts which is not possible in the South. The South is today the home of the delicious varieties of pecan which are a delight to the consumer and a source of fascination and profit to the intelligent producer, but it must be remembered that the northern pecan belt has many excellent varieties that are "good enough." In addition to this, the North is the home of the black walnut, the fine shagbark hickory, the butternut, the chestnut, the hazel-nut, and the chinkapin, and is also adapted to the hardy varieties of the English and Japanese walnuts. All of the nuts just named certainly offer an ample field for our interest and enthusiasm, and, in addition to the keen delight which comes from the successful growing of these trees, there is a possibility of profit which I do not think is excelled in any horticultural undertaking today.

First then, what word of advice or instruction can the Northern Nut Growers Association bring to the prospective nut grower which will be of help? For, after all, the success or failure of this association depends largely upon its ability to help the grower or prospective grower. Before we undertake to give suggestions about the development and culture of nut orchards or to make prophecies as to possibilities, let us stop and take stock for a moment of the present status of the nut industry in the North and consider what we have to build upon and what materials we have with which to work. Mistakes have been made in the past by the prospective nut growers because they did not stop to consider the possibilities of the nuts that were native in their own locality, but looked abroad for something else. This is characteristic of many people. "Distant fields look green," and, of all the imported nut trees, none except the English walnut have been of any success here whatever, while, in one instance at least, their importation has resulted in introducing into this country the fatal chestnut blight, which probably came in on unsuspected

[Pg 25]

stock from Japan. We have better native chestnuts in this country than any foreign chestnut and the blunder of trying to get something different is costing the country millions of dollars through the scourge of the chestnut blight, which threatens to wipe out the industry. It reminds me of the epitaph on the tombstone which read: "I was well and wanted to be better, took medicine and here I am." Therefore, let us consider what nuts we have worth while.

The Pecan

First, we have the northern pecan which is native in certain portions of a belt approximately 150 miles wide, with Evansville, Indiana, on the 38th parallel, as the center. I do not mean to say that the pecan will succeed in all portions of the northern half of this belt or that it may not succeed in many sections farther north. The question of climate, as modified by proximity to oceans and large bodies of water or as made more rigid by absence of these protections, may decrease or increase the latitude at which the pecan can be successfully grown. The orange, for instance, is one of the tenderest fruits and yet, on the western coast, orange groves are flourishing at the same latitude as Philadelphia, which is nearly on the 40th parallel, although it is unnecessary to say that an orange grove would not survive within four or five hundred miles of the 40th parallel any place else except on the favored western coast. The southern varieties of pecans will not flourish in the north and we do not know whether the northern varieties will flourish in the South.

The pecan is a hickory and the northern trees are very hardy and thrifty. Many varieties have been discovered the last few years which are thought to be worthy of propagating. Among them are the "Indiana" and "Busseron," from near Oaktown, Knox County, Indiana; the "Niblack," from Vincennes, Knox County, Indiana; the "Warrick," "Green River," "Major," "Kentucky," and "Posey," all from the Evansville section; the "Norton" from Clarksville, Missouri, and several other varieties.

English Walnut

The next most important nut, and probably competing very closely with the pecan for popular favor, is the English walnut, which is perhaps the only nut that has been successfully imported for growing. Since the earliest Colonial days, seedling nuts have been brought from France, Germany and other parts of Europe and have been planted up and down the Atlantic Coast. Most of the trees from these plantings have not been able to permanently withstand climatic conditions, but, scattered here and there throughout the North and East, are individual trees of apparent hardiness which bear nuts in size and quality comparing favorably with the English walnuts we see on the market. Among the various hardy varieties of the English walnut are the "Rush" and "Nebo," from Lancaster County, Pennsylvania, introduced by Mr. J. G. Rush, the pioneer propagator in the Eastern States. Another is the "Hall" from the shores of Lake Erie, the "Pomeroy" from Lockport, N. Y., a short distance from Niagara Falls; the "Rumford" from Wilmington, Del.; the "Ridgway" from Lumberton, N. J.; the "Holden" from Hilton, N. Y.; the "Boston" from Massachusetts; the "Potomac," "Barnes" and "Weaver" from Washington, D. C.; and a number of other varieties. The location of the parent trees just named will give some idea of the probable hardiness of these varieties.

[Pg 26]

Shagbark Hickory

The thin-shelled shagbark hickory is a nut that is coming more and more into favor and is well worthy of propagation. The first shagbark recognized as a distinct variety was the "Hales," located and named by Henry Hales of Ridgwood, N. J., about 1874. This is a very large, attractive, thin-shelled nut, but has been somewhat superseded by other and superior shagbarks. Dr. Robert T. Morris of New York has been making a systematic search for several years for trees bearing shagbarks of high quality and merit, and has been very successful in bringing a number of such nuts to public attention, including the "Taylor" and "Cook." The "Swaim" from South Bend, Ind., is an excellent shagbark; the "Weiker," from Lancaster County, Pennsylvania; the "Kirtland," from New England; the "Rice," from Illinois; and another very superior and fine shagbark from northern Kentucky which was brought to public attention by R. L. McCoy of Lake, Ind.

Black Walnuts

Throughout the whole north are tens of thousands of seedling black walnuts, many of which are of excellent quality, but, so far as is known, there are but two recognized varieties, the "Thomas," introduced during the eighties and propagated to a limited extent, and another from Lamont, Mich.

[Pg 27]

Butternut

The butternut is also quite common in much of the same territory as is the black walnut and even in regions farther north, but, so far as I have knowledge, not a single variety has been named.

Japanese Walnuts

Seedlings of two species of Japanese walnuts are quite common along the Atlantic Coast and as far inland as the Mississippi River. They are also grown on the Pacific Coast to some extent, but apparently no varieties have been recognized.

Another nut which is confused with the Japanese walnut is botanically known as *Juglans Mandshurica*. In character of growth the tree quite resembles the Japanese species, but the nut

resembles more our American butternut and sometimes they are confused. A short time ago a gentleman in New Jersey who had planted some nuts of the Japanese varieties later cut down the mature trees because he thought they were American butternuts.

Hazel-nuts

It is never safe to use the term "hazel" without explaining that it correctly applies also to the species brought from Europe and more commonly called filberts. According to the late Mr. Fuller, the Germans discriminated between hazels and filberts entirely by the shape of the husk. A nut having a husk which extended and came together beyond the end of the nut was called filbert, meaning beard. Those having shorter and more open husks, so that the nut protruded, were called hazels after the German word "hassel,"—hood, in English. It will readily be seen that once the nuts were separated from the husks, it would be impossible by their classification to determine whether they were hazels or filberts. The Americans generally accept the use of the term hazel to apply to both the American and European species.

In the early history of our country extensive and persistent efforts were made to introduce the European hazels, and no wonder, for of all nut trees this species seems to yield most readily to garden culture. They are readily capable of adapting themselves to most any kind of soil and even to rocky ledges which would be impossible to cultivate. They attain their greatest perfection in good soil and, under proper cultivation, the trees come into bearing early and the nuts mature early in the fall, well in advance of other species. The hazel, however, like the chestnut has met with a fatal disease. It is a blight which seems to exist everywhere except on the native species, which are so far immune as to show little or none of its effects. The American hazels, however, act as host plants to the blight, which thus quickly spreads, with fatal results, to the European species. Of all the plantings which have been made during the past one hundred and fifty years, it is safe to say that there are less than half a dozen hazel orchards in the eastern states which have not succumbed. It seems quite probable that a golden opportunity is awaiting someone who is willing to go through the forests of our eastern states, especially those in lower New England, in search of individual hazels from which to propagate new varieties. Among the heavy bearing shrubs, which exist in the section referred to, it is certain that many hazels could be found well worth propagating.

[Pg 28]

Turning now from this brief history of northern nut trees, let us consider the future of the industry as viewed in the light of sound theory and actual observation. It is unnecessary to present any argument why nut trees should be planted. Nuts afford the highest grade food known to science. They are wholesome, healthful, strengthening,—in fact, without a single objectionable feature so far as I know as an article of food and, when one considers that food is the basis of human existence, no further argument is necessary to warrant interest in one of the best foods known.

Then how shall we advise the prospective grower of a nut orchard? First, let him determine what kinds of nuts thrive in his vicinity. The prospective grower in the latitude of Evansville can indulge himself to his heart's content, for he can grow successfully the pecan, English walnut, black walnut, butternut, hazel and, up to date, the chestnut. But, success in growing any of these trees depends upon proper information, proper varieties, proper soil and proper care. Suppose a man, in the Evansville latitude, for instance, desires a pecan orchard. What should he do? His quickest way, if he has wild seedling pecan trees growing on his farm, would be to have the wild trees top-worked to well-known varieties. If he has no seedling trees, then his next best plan is to purchase budded trees of good varieties from some honest nurseryman, set them not less than sixty feet apart and cultivate and care for them. Will they grow around fence corners and creek banks? Yes, if you have plenty of time to wait. They will not, however, be in a hurry, and it may be your grandchildren who will gather the nuts. But, a cultivated orchard of budded pecan trees of the right varieties ought to come into commercial bearing as soon as does an apple orchard. Mr. W. C. Reed of Vincennes reports Busserons that were budded fourteen months ago setting as high as sixteen nuts this year. That is, the second summer after they were budded. If the trees are of the right varieties, well cultivated, in good soil, and if you care enough for them to throw some fertilizer around them, they will please you by their growth and soon become very profitable.

[Pg 29]

Now suppose one wants an orchard of English walnuts. Almost identically the same instructions hold true. If you have wild black walnut seedlings on your farm, by all means have them top-worked to fine varieties of English walnut, for the black walnut is the best root for the English walnut. If you have no seedling trees, go to some reputable nurseryman and buy known varieties of hardy English walnuts budded on hardy black walnut stocks. Set them not less than fifty feet apart and cultivate and care for them. Mr. Rush reports one of his budded Rush trees four years old bearing fifty-seven walnuts this year. I saw a Rush in Washington City the other day, two years old, carrying about a dozen walnuts; also a Hall, of the same age, carrying about the same number. Both trees were thrifty and not much over waist high, and every terminal twig had from one to two nuts on it.

If you have wild hickory trees growing on your farm, have them top-worked by the slip-bark or budding method to fine varieties of shagbarks. In the absence of wild hickories, I believe the future will prove that the next best method of starting an orchard of budded shagbark hickories

is to buy them budded on hardy northern pecan stocks. The hickory is not the best stock for the pecan because it is of slower growth, and for the same reason the pecan ought to be the better stock for the hickory. But the hickory does not grow as rapidly as does the English walnut or the pecan and requires more patience.

The hazels are going to afford a great field for the nut grower, as they are native to a wide territory embracing the Middle West, the North and the East, and ought to be profitable. A few years ago I found a very fine large hazel growing on my farm in Warrick County, Indiana. I dug up some of the roots of this bush and planted them in my garden at Boonville, and in three years they were bearing fine clusters of hazels larger than those borne by the parent bush. I think farmers would find it profitable to set out hedges of native hazel bushes around their fields and fences and on hillsides.

Butternuts, black walnuts and beechnuts also offer a fertile field for experiment. Any varieties of butternut or black walnut can be propagated by budding or top-grafting them on seedling stocks.

[Pg 30]

I should like to suggest that every farmer in the nut growing belt set aside at least ten acres of land for a nut orchard. It will give him a new interest in life and afford him more pleasure and relief from the ordinary monotony of farm work, I believe, than any other line of work he can pursue. If Ponce de Leon had planted a nut orchard in this country instead of wasting his time searching for the fountain of perpetual youth he could have spent his old days in interesting, profitable and fascinating work instead of in despair and disappointment.

But some of the practical questions asked are, "What is the cost of a nut orchard?" and, "How soon will it bear?" and "What will it be worth when it does bear?" No man can answer these questions with any degree of certainty, for everything that man attempts has its drawbacks and disadvantages. First-class budded nut trees cost from one to two dollars apiece. The balance of the cost depends largely upon the intelligence and efficiency of the labor applied in setting and cultivating. When will they bear? That depends altogether upon who owns them. If properly cared for they will begin setting some nuts in a few years and will increase the crop as the years go by. A pecan tree ought to bear successfully for fifty years—possibly longer, and ought to be bearing nicely in eight years if properly cared for. But, success depends upon the care and intelligence with which the original selection of trees and soil is made, and upon proper cultivation. I have set an orchard of northern varieties of pecans budded from the parent trees in the Evansville section on my farm in Maryland this spring. The land cost me sixty dollars per acre. When they are ten years old they ought to be worth at least five hundred dollars per acre. I do not know how much more this grove of nut trees will be worth in ten years, but I would not option them at the present time for that price. I have about the same confidence in the English walnut.

I have always been conservative on these matters and always expect to be because in conservatism lies safety. These figures I have given you are merely my personal opinion. I have seen pecan groves ten and fifteen years old for which I would not have given any more than the land was worth on which they were growing. If any one has a notion that he can make money in nut culture, without intelligent exertion, he had better go into some other line of business in which there are men having a fair degree of success with unintelligent effort. I know of no nut grove in the whole United States that is succeeding without intelligent application, and on the other hand I do not know of a single grove which with intelligent application is not succeeding. I am a "conservative-optimist." I have been talking nut culture for a number of years and expect to see every hope and estimate which I have expressed fulfilled, and after all has been said and considered my final advice is to *Plant Nut Trees*.

[Pg 31]

THE PRESIDENT: The chair invites a very active discussion of this paper.

PROFESSOR SMITH: It would be unkind to criticize so very instructive an address but there is one thing laid down in that paper I wish to speak about. I believe we were told we must cultivate our nut trees. I believe the fact is that in the greater portion of the United States, we can grow trees, even nut trees, without cultivation. If anybody doesn't believe that, go to Washington by the Chesapeake Railroad and you will see thousands of walnut trees along the way. I believe the human race can grow trees on a hillside without cultivation, and I want to suggest to persons putting out nut trees to put out a few in places where they don't have to be plowed, and see if they don't get good results. Cultivation is not a fundamental element of agriculture or plant life, but is the quick way to get results.

In many places in Ohio the state experimental work in horticulture, especially that carried on by F. H. Ballou, has done some wonderful things in waking up apple orchards that had not grown a quarter of an inch in years. Merely giving them food has caused them to wake up and bear. I have seen them, and know. The books say that while apples may grow without cultivation, peach trees *must* be cultivated in order to bear. I have peach trees that are three years old in a rocky piece of ground. I can't plow it but I have fed some of the peach trees and a few I did not, that is not much, and the ones that were fed as they should be are much the biggest and are bearing well. My point is this, keep the grass well scraped away to prevent trunk injury, and feed even a peach tree and it will do well. I think the same is true of the nut tree.

Whether a tree that is set out, liberally fed, and the grass kept away will do as well without cultivation, is a subject worthy of your consideration and experiment.

THE PRESIDENT: The chair especially desires to call attention to Dr. Smith's remarks because he has made a very careful study of this question and his suggestions are worthy of very great consideration. I have talked these things over with him a great deal and I commend his remarks especially to the Association for discussion.

[Pg 32]

DR. MORRIS: In connection with the matter of cultivation I would also like to have Mr. Reed discuss that. I want to say, however, that, in using fertilizers, you will often very easily overdo the matter. Sometimes in my experience professionally, I give a patient medicine enough to last a week, with directions that a teaspoonful be taken twice a day, and the patient may believe if she takes the entire bottle at one dose she will be well in an hour, and consequently suffer from an overdose. That same idea is sometimes carried out in the fertilization of trees by horticulturists. You don't intend to do it but sometimes you can kill with kindness and be too good in feeding your trees if you don't understand how much fertilization the tree needs. That is the idea, you have got to give your trees the ratio that they need. If you give them too much pie or pudding, your trees will have indigestion and will not thrive and may die. I have lost a great many good trees, and a great many nut trees, and have checked the growth of a great many by not realizing this. I wish Mr. Reed would speak to us about it.

MR. POTTER: I want to state some experience I have had and when Mr. Reed talks, I wish he would give me some information. I set out some pecan trees on my lawn in the front yard, and of course there is not much cultivation there except around the trees. It is like most other lawns in southern Illinois, mostly clay and what other soil we put on top. Now the clay is very hard and in setting the trees I had my man dig a hole three feet deep and two feet across and in setting the trees I packed good dirt around them. The question is how should I feed those trees? I have put barn manure around them and they are now growing and doing very nicely, I want to know if I have pursued the right course.

MR. MCCOY: I believe this question of growing trees in fence corners and on hillsides is not so large a question. The main thing is to give them plenty of water. There is very little land in the Mississippi valley that won't grow pecan trees or most any other kind, if you will give them sufficient mulch and plenty of water, because they take their food in the form of soup. Unless they have water, they won't grow. I believe the best cultivation you can give a tree of any kind is a good mulch of straw and manure. You that have had experience in this part of the country know that is the best way to cultivate trees.

I grew a peach orchard once in one year, but I have quit that, I have learned better. It is simply a question of water and plant food. If you will mulch any kind of a tree, nut tree or any kind, with ten or fifteen inches of straw and stable manure, you will have a steady growth from early spring until late in the fall, and it will make a strong tree.

[Pg 33]

PROFESSOR SMITH: While we are waiting for Mr. Reed I want to take up Mr. McCoy's soup suggestion. Water doesn't make good soup without something in it. Experiments show that you can mulch ground in some places and not wake up the tree, but fertilizer will wake it up the first year.

MR. POTTER: What kind of fertilizer did you use?

PROFESSOR SMITH: One must experiment to see what his land is short on. Sometimes you can fertilize your trees without any result. Sometimes potash will not do any good and sometimes it will. You will have to see what your ground needs. For young apple trees I found in my particular situation that nitrate of soda is all I want. I have what is called a Porter's clay soil on the Blue Ridge Mountains of Virginia. I use that and then my trees get busy and grow. They make rapid growth even the first season with a handful of nitrate and for my three year old trees half a pound is enough. That is what my soil seems to need and we must use what the soil is short on. That is my interpretation of my situation and it works.

THE PRESIDENT: Who can tell us whether nitrate of soda is good for nut trees? Can you, Mr. Simpson?

MR. SIMPSON: In the South, we do not think so.

THE PRESIDENT: The reason I asked, is that I have been studying that. I wrote Mr. Potter a letter suggesting that he use some on his young nut trees to see what it would do, and later I found out that all through the South it was not regarded as desirable. It seems they claim it starts pecan trees into an active growth but when they stop they make a very sudden stop and don't start growing any more. I want to get this in the record right here. You understand that is the general belief throughout the South, do you not?

MR. SIMPSON: Yes sir, it is not considered good.

THE PRESIDENT: Dr. Smith has made a very careful study of fruit trees and knows its effect on them from experiments, but it is well perhaps to consider fruit and nut trees separately.

PROFESSOR SMITH: I should suggest to anybody who is thinking of working with trees, to get some seedling pecans and plant them and then fertilize some of them and others not, in the same kind of soil. In that way he can get his own fertilizer conclusions at a small expense and then he will know what his own soil needs.

[Pg 34]

MR. MCCOY: We fertilized seedling pecans in a clay soil and we decided the trees we did not fertilize got along better than the ones we did. Of course that ground is better where the trees

are than on the average farm. We used nitrate of soda and potash but we decided the ones we didn't fertilize did the best.

MR. POTTER: I put two pounds of nitrate of soda around each tree and the English walnuts I used it on budded out very shortly after using it, but along about June they died. The pecan trees we used it around grew fairly well, but some of them, one in particular, appeared to remain dormant, almost, until about two months ago when it commenced growing and is now growing very rapidly. So you see I don't know where I am at.

THE PRESIDENT: In writing you I did not understand the size of the tree. On some trees I have been using a tablespoonful, about that, and I was afraid I got too much.

MR. POTTER: Evidently I got too much.

THE PRESIDENT: Evidently we got mixed up on the quantity. I know I never used more than two tablespoonfuls at any time and I should imagine two pounds would be a big overdose. I remember talking to Dr. Smith about that time about some old apple trees around which you can use five or six pounds of nitrate of soda and I suppose that is the way we got mixed up. I must have had that in mind as I did not intend to advise that amount for young nut trees.

MR. POMEROY: How long a season should the tree keep growing? From early spring to late in the fall? My experience is they will stop about the first of August, and let the wood ripen up and harden for the cold weather. Some might keep the trees growing longer, but you will hurt the trees I think.

THE PRESIDENT: We have not heard from Mr. Reed yet.

MR. C. A. REED: I am glad the discussion has proceeded as it has since it has given me time to reconnoitre. I hardly know what to say on this subject that Professor Smith has brought up. I guess he knows what he is talking about so far as his experiments have taught him. The department does not like to discourage a good thing nor to encourage a thing that is too risky. There is one thing quite sure and that is that so long as nut trees are selling for from one dollar to two dollars apiece, very few people are going to buy them and plant many of them on these hillsides and experiment with them. People cannot afford to do that. We have found, taking the country over, that nut trees thrive best when they are given treatment; that is they must be given cultivation and fertilization; be given some degree of attention the same as an apple or peach orchard. Colonel Sober, however, will show you quite a different thing. He will show you chestnut trees that are not cultivated at all, so there is a staggering blow to my argument, and yet Colonel Sober gets something like three and a half bushels to the tree. You don't fertilize those trees, do you, Colonel Sober?

[Pg 35]

COLONEL SOBER: No sir, not at all. Haven't yet.

MR. REED: So there is an argument that silences me and still it is true that we can't safely plant hickories and pecans without some degree of cultivation. I don't think Professor Smith has planted any on these hills.

Still we all agree with Professor Smith in a way. Something ought to be done to the surface to prevent the land from washing, and there is no better way of doing that than by planting trees. Then the roots will prevent washing and they can take care of themselves better than a surface crop. Especially is this true on the hillsides, so there is a good deal in Professor Smith's argument. And yet there is the danger that those trees will be infected with disease and insects. On plants and trees that are attended to and cultivated we find those pests will be kept in check. So there are two sides to that argument.

PROFESSOR SMITH: The point I raised was this, that it is possible in some places to attain by fertilization the advantage that comes by cultivation in other places. Great things have been done without fertilization. There are chestnut orchards in Corsica of grafted trees, ranging from the size of my wrist to eighteen to twenty feet in circumference. They have not been fertilized in centuries, and they yield enough to support the entire population.

THE PRESIDENT: We would like to hear from Col. Van Duzee, and I want to say that, as President of the National Nut Growers Association, he is well acquainted with these things. I commend him to you and promise that whatever he may have to say to you is worthy of your very careful consideration. I have the honor to belong to the association of which he is the president, and know it is seldom we have an opportunity to hear men like him.

COL. VAN DUZEE: Gentlemen, I am going to side step this argument for I do not think it worth while taking up the time. We are here for other purposes. Personal experiences are not the general rule because each one's experience differs from that of others. We might all tell our personal experiences and after we were all through we would not have accomplished anything. I want to take you back to the point from which we started this, in order to know what we are talking about. To illustrate what I want to say to you, we can take the root pasture of a tree and analyze it in every possible way so as to bring to bear upon it the best judgment we have from all sources. The tree grown upon a hillside has a root pasture which is entirely different in many ways from the root pasture in the river bottoms. If we have a tree growing on a hillside in a soil that easily transmits moisture and it gives that tree constantly a stream of pure water going through its root system, and there happens to be enough fertility in that vicinity, that moisture is impregnated with plant food, and the tree will get all it wants. You can't speak in the same breath of the tree

[Pg 36]

growing in the river bottoms whose entire root pasture is entirely different. The root pasture may become contaminated by various things which may cause, so to speak, ptomaine poison. Therefore I say that every locality, every soil, every climatic condition, every variety of tree must be taken as individual. What would be good for an apple orchard in Virginia might be fatal to an apple orchard immediately south of Lake Erie in Ohio. The use of commercial fertilizer that would be good in one locality would be bad in another. Therefore I disapprove of this kind of a discussion, because we are not speaking to a definite point. I want to bring your minds to this point, that every individual tree and its locality, and the man that is responsible for its welfare, must be analyzed before you can speak intelligently about what must be done.

I am going to tell you the same story I told the societies at Pharoa, Alabama. They wanted me to talk on this subject and I said, "You remind me of a backwoods character I have come in contact with in the woods of Florida who is ill and doesn't know what is the matter with him. He knows he needs medicine and he goes down to the general store and buys a bottle of patent medicine recommended by the groceryman and he takes it and maybe it helps him and maybe it don't, but if he don't get better he goes and gets advice from some other man like the grocer." I said, "That is the way you are demonstrating fertilizer." The first thing I would advise would be this: to analyze the individual pasture of the individual tree and take everything that enters into the history of that tree and everything that bears upon it. All the accumulated wisdom of others won't help us very much. We have to use common horse sense. We can't talk about these things generally. In poor soil and under bad conditions the pecan tree will do nothing. There are trees I know twenty-six or twenty-seven years old that are not as large as my wrist, that have never borne a nut and never will. I can also show you trees in that immediate vicinity, planted at the same time from the same nuts with favorable conditions, that are seventy or eighty feet high and bearing good crops of nuts. Those nuts came out of the same bag the same day, and were planted by the same man in the same locality, and that proves, as I have said before, that you cannot discuss things of this kind in general terms and it is a waste of the time of the association to do so. I would be glad to answer definite questions as to definite points.

[Pg 37]

THE PRESIDENT. The next will be a talk by Dr. R. T. Morris of New York.

DR. MORRIS: Mr. Chairman, and Members of the Association: My subject relates to personal experiences with hybridization work. This is work which is to be done more and more by various members of our association, and we are thus to create new species of trees. Nature's whole endeavor is to preserve the mean type among races of organisms. There are mutants among all trees, among the hickories and walnuts, as well as among the peaches and pears. In fact all species undergo mutation. We select the most desirable mutants and we try to fix a given type by grafting and propagating. Seedlings will go back toward the mean type. The mean type hickory, walnut or chestnut is the type that nature wishes to preserve, but these are not best for man's purposes. What is best in nature's plan is not always best in man's plan. We have got to dynamite nature. We have got to put a charge of dynamite under nature's seat and blow her up, in order to get what we want for our own purposes. How do we do it? How do we break up the mean type of a variety or species? By crossing the flowers and bringing together the parents we wish to unite in the hope of growing new forms, among which will be some that are particularly desirable for our purposes.

Now in doing this work, I have had to get by experience a number of points which will be of value to members of this association. First, in regard to collecting pollen. Sometimes species, which we wish to cross, flower at widely different times. They bloom perhaps two or three or four or even six weeks apart, and it is a question how long we can keep the pollen viable. What can we do about it? There are two good ways. First, get your branches of male flowers before they are open, put them in cold storage, or in an ice house, or in a dark room, and keep them anywhere from one to six weeks dormant. When you want to use them, and your trees of the pistillate flowers are ready, take the branches of staminate flowers out of the ice house and put them in jars of water in a warm room in the sunshine. They will blossom and make good pollen shortly. Another way is through correspondents living at a distance. These correspondents will send you pollen from a species which blossoms later further north or earlier further south, at the time which you wish for your pistillate flowers. For instance, in crossing chinkapins with oaks, the chinkapins will blossom about the 12th of June in Connecticut but most of the oaks are through blossoming by the 12th of May. There we have a month's difference. How can I use oak pollen upon my chinkapin trees? I do this by sending away up to the northern limits of the growth of the oak tree, up in Canada. The red oak tree blossoms there in June, the same species that blossoms with me early in May. Pecan pollen that I wish to use upon shagbarks and walnuts I get from Texas. Now how are we to keep pollen when we have collected it, if we are not ready to use it immediately? I have had pollen sent to me from a distance in tightly corked bottles. It was probably ruined at the end of three or four days, because it could not breathe. Every grain of pollen has to breathe just as surely as a red squirrel in the top of a tree has to breathe. The pollen grain is a living organism, and if it is sent in a closely corked bottle it smothered and dies. You must have it sent in paper or wooden boxes in order to have it in good condition when it arrives, and it must be kept in a cool place, not too dry and not too damp. If it is kept in a place that is too damp, various fungi appear, and begin to attack it at once. If it is too dry, it loses its water content, and its protoplasm does not make combination with that of the other flower. So we must keep our pollen in a cool place, not too dry, not too warm and not too moist, and where it can breathe. We may put it in cold storage but not at a temperature below freezing. We may put it into the cold storage which florists use, and keep it for a long while. Some pollen will keep, viable for three weeks, under these conditions, possibly longer. It is important to keep your pollen boxes open at the top.

[Pg 38]

They must be kept where the wind doesn't blow your pollen from one box to another. I had not been impressed by that point until this year. I had eight different kinds of pollen about the farm house, in different rooms, in order to be sure to keep them far apart. One day on my arrival from town ready for pollenating a number of trees, I found that a very neat housekeeper had found it undesirable to keep such boxes scattered about in so many places. She had put them all neatly together in a closet on one shelf, and there was none of the pollen that I could use, because the wind had mixed the kinds all up. I had eight kinds of pollen across which one kind of wind had blown.

[Pg 39]

There is one practical point in cross pollenizing flowers that I have recently learned. Pollen of one variety may not combine with the ovule of another variety or species but may stimulate the ovule to go on and develop all alone, without taking to itself the added pollen. That is a very important point, and possibly a new point. I was deceived, and reported that I had crosses of certain trees, and that such hybrids were growing. I knew that the flowers of parent trees had been properly protected from their own pollen. Now when these young trees are two years of age, I find they are true to one parent type; so true that they are evidently not hybrids. They have developed from the pistillate parent only. In ordinary parthenogenesis the fruit grows without any pollen influence at all. This forced parthenogenesis which I have described seems to be a phenomenon with which botanists are unfamiliar. Until I learn that it has been described and named by others I shall call it Allergic Parthenogenesis (Allos, ergon). The pistillate flowers accept absolutely no pollen, but go on and develop because of its impulse given. In cross pollenizing flowers, I find one point of great practical consequence. When covering the female flowers with paper bags to protect them from their own pollen you give protection to a great number of insects. The insects remain inside these bags and destroy the leaves and flowers. They are protected there from their enemies, predatory insects and the birds. When the bags are taken off, perhaps a week later, for the purpose of adding pollen to pistillate flowers, insects may have destroyed the leaves and even the flowers. Consequently, I find it best to sprinkle the leaves with Persian insect powder and to put some of it in the bags that are to cover the flowers. Insects can't live in an atmosphere of this insect powder. They sneeze themselves to death. I have taken the bags from leaves and flowers which were so badly injured by insects you could distinguish them at a considerable distance. Those are all the points that I jotted down for this address today, but no doubt many other points will be brought out in the subsequent discussion.

MR. MCCOY: I would like to inquire how far it is possible under a microscopic examination to determine the species of the pollen.

DR. MORRIS: It is possible to determine the species but not the variety so far as I know. It may be possible to determine a variety but I don't know the extent to which that is possible, from microscopic examination of the pollen. If we wish to know whether pollen is still good or not we may in twenty-four or forty-eight hours cause it to "sprout," and in that way know whether it is viable and good. We may save ourselves a good deal of trouble by making this examination and determining whether or not a given lot of pollen is viable before putting it on the flowers. We can cause it to sprout in a sugar solution.

[Pg 40]

THE SECRETARY: What is the strength of the sugar solution?

DR. MORRIS: That is technical work and must be done by a plant physiologist. He will do it for us at the State Agricultural College and telegraph his report.

MR. DORR: Is this work you have outlined of sufficient definiteness to get results? That is the important thing. We farmers sometimes discover a plan accidentally that will outclass anything we can get in an agricultural college.

DR. MORRIS: That is very important. We are to produce nuts that are better, and also in greater quantities. The question if hybridizing work is valuable has been already answered in the case of roses and soft fruits. Our best types are largely the ones which have been secured by hybridization and the same will be true of nuts. The subject has not been so largely taken up as yet with nuts. Very few of us are doing with nuts what has been done with other fruits.

THE PRESIDENT: The chair wishes to say that the members of this association have a very great and rare opportunity to secure information on this subject. Dr. Morris has made a very careful study of it.

DR. MORRIS: The more study I make, the less I seem to know. Consequently I shall be very modest in my replies.

MR. DORR: I have been working with different things and find so many things I can't get at the truth. In the last year I have made experiments in breeding cattle to get colors, and I was agreeably surprised with my own success. I want to know if you can get similar results. I can observe the results so readily that I know exactly how I get them.

DR. MORRIS: As a general statement the same thing you get from working with animals we may expect to get in working with plants. The protoplasm of plants is now known to act like that of animals, but not quite so quickly or freely in response to cultural methods. We can breed to size and breed to quality and character of fruit, and we find we may do with plants just about what we do with animals, only not quite so quickly, because animal protoplasm responds more readily.

[Pg 41]

MR. W. C. REED: I would like to ask if in a cross between the Persian walnut and the shagbark hickory there is a cross pollenization, or is it an increased vitality given by the pollen? Is there

really a cross there?

DR. MORRIS: I made one cross between the Persian walnut and the shagbark hickory that was evidently a good hybrid. It showed character of both parents, but I lost that entire lot. I wasn't careful enough in protecting them. I have another lot of crosses between these two flowers in which the type often is so definitely shagbark hickory that I doubt if there is any walnut there at all. Under certain conditions we may get hybrids, yet miss it at another time, even when working with the same parents. Somebody has probably made a better study of this point and recorded better ideas. I think we may safely say that we may expect an actual cross between some walnuts and hickories.

MR. MCCOY: Would it be possible to cross the English walnut and the black walnut and produce a nut of superior quality?

DR. MORRIS: Yes, it is possible to cross them, but you do not often get a nut of superior quality. The tendency seems to be to have a nut of thick shell and of not high quality, but if you make a thousand of those crosses, out of the thousand you may get a few of just what you want.

PROFESSOR CLOSE: I want to ask if you are always careful to apply the pollen when it is well ripened?

DR. MORRIS: Yes, I have always been careful to apply it at just the time when it was well ripened, and that is of great importance in its bearing upon Mr. Reed's question. If I have pollen which is quite ripe I may perhaps catch it upon an ovule, but if it is not ripe I won't get the cross. I may add it a little too early or too late when the pistillate flower is unprepared and I won't get a cross. If I get my pollen just at the right time upon the pistillate flowers I may have a good cross, between varieties which do not cross readily.

PROFESSOR CLOSE: In my experience in breeding apples, formerly I always waited until the pollen was ripe, and that meant I had to cover the blossoms with bags and depend on the weather for conditions favorable to pollenation. But four or five years ago I began pollenating much earlier and I have had good results.

DR. MORRIS: That is a very important point.

PROFESSOR CLOSE: By doing that I know it is pollenated. I have been failing so many years I felt it was a loss of all the first part of the work. [Pg 42]

DR. MORRIS: It is a great convenience to be able to pollenate at the same moment when you emasculate.

A MEMBER: I would like to have you kindly explain to what extent cross pollenation can be made practical to the ordinary grower.

DR. MORRIS: Let's say that in case of the butternut we wish to experiment with removal of the thick shell, and also to obtain less of that strong oily flavor; we wish to get rid of those two things. In order to do that I would first think of the Japanese walnut, *juglans cordiformis*, which has a much thinner shell and is less oily and more bland. Crosses between this Japanese walnut and the butternut we may fairly expect will sometimes give us a large, thin shelled butternut of good character. The next question is, who is going to do it? The men about my place are pretty busy, and this is rather delicate work. It is going to be a most inspiring field for the young folks and the ladies, because it is nice, pretty, ladylike work, and beside that its returns may be large. If your little daughter, ten years of age, knows that she may get \$2,000 for a single cross that she has made, it is stimulating, because it is not every child ten years of age who can put \$2,000 in the bank, as personal earnings of increment.

MR. MOSELY: I would like to ask just what results you expect from the cross pollenization of these nuts, and just how far they will differ from the parent type?

DR. MORRIS: You are bound to have continuance of one parent type, but in crossing with pollen from hybrids you may carry desirable characteristics through a series of generations and breed for what is wanted, possibly to the sixth generation or even further with some species.

MR. MOSELY: Then the type is not fixed until pollenization?

DR. MORRIS: By selecting the one showing the dominant characteristics you wish to preserve, you could breed through several generations and have an ideal type eventually.

MR. DOAN: I would like to ask how far the buds are developed in cold storage before the pollen can be used?

DR. MORRIS: For instance, take the hazel when its catkins are just beginning to elongate. It may be put in the ice house and kept there, for two or three weeks dormant. When we wish to develop those flowers we put the branches in a jar of water in a warm room and in about three days the plants are shedding pollen. I got some hazel catkins this spring that were elongating. It was the latter part of February when we had one or two warm days and I believed my pistillate hazels were about ready for pollen. I got those branches from Rochester. We had unexpected cold weather and storms and my pistillate hazels did not bloom until more than two weeks later. I kept these undeveloped catkins that I had received in a cold dark place. When I wanted to use them I put them in a jar of water and in less than three days they were shedding pollen freely, at a time when my pistillate flowers were ready for pollen. [Pg 43]

MR. MOSELY: I would like to know the object in crossing the oak on the chinkapin.

DR. MORRIS: My idea is to get a chinkapin tree twice as large as an oak, perhaps. I shall hope to have a chinkapin tree as sturdy as the red oak, with nuts larger than acorns and of as good quality as the chinkapin nut. Of course that extravagant possibility only appeals to one with a speculative nature.

THE PRESIDENT: Pursuant to the authority conferred on the President this morning, the following committees are announced:

On Nomination—Robert T. Morris, Chairman: C. P. Close, J. L. Doan, R. T. Olcott, C. A. Reed.

Exhibits—Prof. C. P. Close, Chairman; J. P. Wilkinson, E. A. Riehl, Colonel Sober, W. C. Reed.

Resolutions—W. O. Potter, Chairman; H. R. Weber, J. Russell Smith.

The chair also wishes to place an additional member on the membership committee, in the place of Mr. Corsan, who has not been able to attend the last two meetings, and will appoint Leon D. Batchellor of Utah.

Committee on Revision of Constitution and Rules—Prof. C. P. Close, Dr. W. C. Deming.

I will also add to the committee on nomenclature C. A. Reed and R. L. McCoy.

THE PRESIDENT: We have a few minutes before time for adjournment and Mr. Evans, a dynamite man, will speak to us.

MR. EVANS: Mr. Chairman: The question arises as to what kind of dynamite to use in the different soils. Most pecan land contains clay and can best be worked by dynamite. Don't buy ordinary dynamite, because it is too high an explosive. For several reasons it is not the kind of an explosive you wish. In some places dynamite can hardly be put on the market as many people are afraid of it and so the word dynamite has been eliminated, and we now have what we call Red Cross Farm Powder. It will work in any part of the country, it is not a high explosive and the price is lower as the hardware dealers have it direct from the Dupont companies. By using this Red Cross Farm Powder, less labor is required and it doesn't cost very much. For labor and all it will cost you about five cents per hole, and that includes the dynamite caps, fuse and labor.

[Pg 44]

PROFESSOR SMITH: How much do you use?

MR. EVANS: That depends on the soil and also on the depth to which you want to shoot the hole. Nurserymen have different opinions on that subject, but in the southern field where I have been working they usually go from two and a half to three feet deep. They use one-half stick 20 per cent dynamite, or one quarter of a pound as it weighs two sticks to the pound. That should make a hole two and a half or three feet deep. Fuse is cheap and you should use plenty of it. A man has to be governed always by the kind of soil he is dealing with.

MR. POMEROY: In shooting an old apple orchard how deep would you go?

MR. EVANS: Where I have been working from three and a half to four feet, but as I said before it will depend largely on the soil.

MR. POMEROY: How far from the body of the tree?

MR. EVANS: I have never made a study of that.

MR. POTTER: In limestone soil, for instance, built up with clay, how near the trees would you use the dynamite if you want to loosen up the soil?

MR. EVANS: What kind of trees?

MR. POTTER: Pecan.

MR. EVANS: About six feet. I think that is close enough.

MR. POTTER: Would you make more than one hole around the tree?

MR. EVANS: Use your own judgment about that.

MR. POTTER: How far out will it loosen or break up the ground?

MR. EVANS: Probably six feet. You can distinguish on the top of the ground where it takes place.

MR. POTTER: How deep will it be?

MR. EVANS: About a foot deeper than the charge is placed.

THE SECRETARY: With me the most important thing in using dynamite is the question of headache. I used the 20 per cent at first and it had no effect. I had heard of its causing headaches and knew some people couldn't use it but I thought I was immune. Then I began to use 70 or 80 per cent and I got knocked out for twenty-four hours. The more I used it the more susceptible I became. When I went back to handling the lower percentages I got the same results, was completely knocked out and had to go to bed. Sometimes the effect would come on a long time after I used the dynamite, perhaps hours afterwards, and the headache would increase, until I was intensely nauseated and had to give up entirely. Is there anything to prevent that? Is it caused by the fumes after the explosion?

[Pg 45]

MR. EVANS: Some say it is from handling the dynamite, others say it is the fumes after the explosion. Red Cross has ammonia in it and that ought to help some. Dynamite contains nitro glycerine and if you handle it bare handed it gets in the pores of the skin and causes rapid heart action. In dynamiting holes for tree planting you will get the fumes and you will get a headache. If a man could work with gloves on he could avoid this to a very great extent. You can't do it easily but if you can do it without taking off the gloves I don't think it would bother you much. I neglected to state that dynamite by itself is not dangerous because it will withstand shock or fire or anything like that. The danger is in the cap. It contains the most powerful explosive known. If you handle them carefully, there is absolutely no danger. This year we are slipping little copper disks into the caps with a pin hole for the fire to strike through.

MR. HARGIS: I have difficulty in making the shots. Should you put your cap at the bottom or the top of the stick?

MR. EVANS: I should advise the top. A misfire is always expensive. If you think it is necessary put in a cap in the bottom and one in the top.

MR. POMEROY: If you have a misfire and the men don't like to monkey around it, and neither do you, just step off a few inches and stick in another one and let her go. Will that fix the stick that didn't go off?

MR. EVANS: That is the safest way.

MR. HARGIS: In tamping say you have a hole in a rock four feet. I have had men tell me to pour the hole full of water. Is that right?

MR. EVANS: That is the best method known.

In tree planting you will always have to use your own judgment. Go down four or five or six feet to learn the character of the soil, tamp the cartridge well and as fuse is not expensive, always use plenty of it.

THE PRESIDENT: Any further discussion of this, or any further questions on the use of dynamite?

MR. DOAN: Mr. President, I would like to mention a method I found helpful. That is to make two holes in the cartridge, one diagonally down from one side, thrusting the fuse bearing the cap through that, and then making a hole diagonally in the other side and thrusting the cap in it.

[Pg 46]

MR. EVANS: We do not advocate using that method because dynamite will become ignited from the fuse and will burn. To be frank with you that is the method we use, but the company does not approve of it and we should not use it. You are liable to have a misfire. In warm weather there is no danger but in cold weather don't use it. The best method is to bore right in at an angle of forty-five degrees.

MR. POTTER: Do you advise us to use dynamite?

MR. EVANS: Yes, we have men making a business of it.

MR. POTTER: To be frank with you I don't like to use it.

MR. EVANS: Dynamite is not dangerous. It is the caps, though they look safe. It is that white stuff in the dynamite cap. There is where the danger is.

THE PRESIDENT: We will stand adjourned until 1 o'clock.

Re-convened at 1 P. M.

THE PRESIDENT: I will ask W. C. Reed to state something of his program for Saturday so the members may know about it.

W. C. REED: Our plans for Saturday morning are that we are leaving Evansville at 7:30, arriving in Vincennes at 9:30; several automobiles will be in waiting there to take all the party out to the nurseries and get back to the station for the 2 o'clock train going north to Oaktown, where there will be automobiles in waiting to take us out to see the original Busseron and Indiana trees, coming back to Oaktown in time for the 6:40 train south, arriving in Vincennes at 7:07, or the train north out of Oaktown to Terre Haute, to connect for Pittsburgh over the Pennsylvania Lines or Big Four if anyone wants to go that way. We would like to have everyone go with us Saturday, if possible, and would also like to know sometime this afternoon before we adjourn how many are going, so I can notify them tonight how many automobiles there will be needed at each point.

THE PRESIDENT: That is rather an important visit for the members to make for two or three reasons. Those of you who haven't had the opportunity of seeing the pecan propagated in Mr. McCoy's nursery will get a chance to see Mr. Reed's nursery; and you will get to see the parent trees of two good northern Varieties. We know very much depends on the location of the original parent tree, notwithstanding it is sometimes said it is the location of the nursery that determines the hardiness. We know that has nothing to do with it. You cannot, by putting a tree in a nursery for six months, change its nature. If you take this trip Saturday, you will have a chance to see the Busseron and the Indiana.

[Pg 47]

MR. REED: We will also visit the Niblack tree if we have time.

THE PRESIDENT: I would suggest that all go who can. I want also to urge all of you to make the trip tomorrow and see the big seedling pecan trees bearing nuts hanging almost to the ground. You cannot always see that because usually they are so tall. I also want to call your attention to the exhibits in the other room. Mr. Wilkinson has a very fine collection in there. Col. Sober has some very fine exhibits of chestnuts, both of burrs and nuts, and Mr. W. C. Reed has a very fine collection and possibly there are many others I should mention. You ought to examine all of them, because the only way of drawing correct conclusions about these things comes from careful study, and it cannot be done hastily. The next on the program this afternoon will be Mr. McCoy's talk.

MR. MCCOY: I have no set speech to make I thought maybe there were some things I might say to be a help to some of you; some things that would have been lots of help to me a year or two ago from some one, because nut trees are more difficult than any other nursery stock to propagate, and for another reason it is more difficult in the North than in the South. Mr. Paul White and Mr. Ford Wilkinson have both worked in the North and in the South, and after coming back home these boys say that anybody can propagate pecans in the South, but with us it is different. We have kept at it, though, and our president has been our good friend and has always helped us out. There have been three of us incessantly at the work. Mr. Littlepage would come down home and get us together and ginger us up, and we would go back and go to work and try again. It has been one continuous line of failures, but every year we have learned some things, or at least learned how not to do it. This spring we were fortunate in having an expert from the South who came to my nursery and stayed there until midsummer, and we saw our own work compared with his. We all had great respect for him and he is able, too. I don't think he had much respect for us when he got here but he had a whole lot when he went away for he made a miserable failure like the rest of us. Mr. Jones, you know, is an authority on grafting. He is the man that introduced it to the nut world, at least in the East. I think it had been tried in California before. We have tried his methods and everything else that government experts or any other expert told us about, and we have read all the magazines that were published from the South to the North. Everything seemed to be a failure and finally I got disgusted and said "We will do it to suit ourselves." After we had tried all the hard ways in Christendom I think we have at last found an easy way to do it. Like everything else it is easy when you know how. I believe it is a fact—and I am saying nothing but what I believe—I don't believe you will ever successfully graft pecan trees in the North, unless you equalize your sap flow by pruning your roots. I tried it and failed. It is possible you may be able to side graft under most favorable conditions. You may make a side graft take if you leave the top on to take care of the extra sap flow. You take off the top of a pecan tree, or any other nut tree in this country, and you ruin your root system because your sap comes with such vengeance—and it comes! One day there is no show of sap and the next day it comes with vengeance. Differences in the soil, of course, makes some difference. At Mr. Littlepage's place, Paul had the sap a week before I did and Mr. Wilkinson had it four days before. A great many of our top works are going to the bad because we ruined the root system when we cut the tree. And I want to say it again, I don't believe we can make a success of it in the North. You may do it in Oregon where you have a distributed sap flow. The Oregon fellows say you can't bud, because they don't know how. They say the only way you can produce trees is to graft. That may be true out there but you can't graft in Indiana, I know, especially on my place. Of course the soil of each particular farm has something to do with it. To illustrate my point, the first year I was in the state of Wisconsin, on the 20th of June, I was out in the country and saw a man setting tobacco. I knew him and I said, "Won't that tobacco get frost bit?" and he said, "I reckon not. It might but it never did." I thought it would, but I went that way in two weeks again and I changed my mind. I had been used to seeing tobacco growing in the Ohio valley where it does its growing in the latter part of the season. In the South the sap flow is much better distributed than it is in the North.

[Pg 48]

Now, then, I have brought a board along with these young trees stuck in it, because I thought some of the members would like to see a demonstration. The tools I have here are not adequate, hardly, for the job. For a tree that size we take a saw to it.

(Here Mr. McCoy makes a demonstration of cleft grafting.)

MR. POTTER: Would you have a scion as long as that in actual work?

[Pg 49]

MR. MCCOY: Many of them are, but it would be better smaller, probably. That is a matter I don't think there is much to, whether the scion has one bud or ten. I think three is perhaps about right.

MR. POTTER: They come together right there?

MR. MCCOY: Exactly on the front side. Now you understand this grafting is done when the sap is flowing, or about the time the sap flow begins. Usually at our latitude here you will commence grafting anywhere from the 6th of April to about that time in May. Of course when you are cutting trees at that time you have got an immense flow of sap. Mr. Jones tried this method without drainage, that is the way they do out in Louisiana, but he only got ten per cent to stick, so we had to work out a drainage for ourselves. Take a piece of heavy wrapping paper, rather good quality such as you can get at any paper store, and put it right over your graft, and a little bit below the cut on your stock. Then simply take a piece of raffia and wrap. Then make the ordinary tie that anyone knows how to make with the cotton or twine, or sometimes with the raffia, and you have the drainage of this paper. The tie, of course, is simply to re-enforce the strain on the graft and hold it. Then you apply the grafting wax. The one we use is three of resin, one of beeswax, and lampblack and a little bit of linseed oil. Cover up the graft entirely, except

don't cover over the lower end of this paper because there is the drainage where the sap flows out. Then you put an ordinary paper sack right over it, and leave it on for about three weeks.

A MEMBER: You don't tie the paper below the raffia?

MR. MCCOY: That does not make any difference.

A MEMBER: At what time do you cut a hole in the bag to give it air, or do you do that?

MR. MCCOY: Not for two or three weeks.

(Mr. McCoy now gives a demonstration in budding.)

We will suppose this is a seedling and I want to bud it. I place my budder on like that. Now I have got my shield up. Now I lay my budder on the stock something like that.

MR. SMITH: Why not wrap over the bud?

MR. MCCOY: Because it will injure it. It is essential to cover all the cut surface you can. Make it waterproof at the top, and have it open at the bottom.

MR. POTTER: How long does that stay on the bud?

MR. MCCOY: I don't know as that makes any difference unless you want to force the bud.

MR. McELDERRY: When do you take that off?

[Pg 50]

MR. MCCOY: I don't know as that makes any difference. I have thousands of them that have been on five or six weeks. I take it off when action begins. It varies, it may be two weeks and it may be six and it might be six months. If you have maximum budding conditions generally the tree itself will tell the story. We frequently take it off and have to rewrap.

MR. W. C. REED: Would ten days be too quick?

MR. MCCOY: In most cases, yes.

MR. REED: Fruit trees is two weeks, but pecan trees are not quite as quick?

MR. MCCOY: Pecan trees will come through the rye about as quick as a peach tree.

MR. REED: I am talking about cherry trees.

MR. MCCOY: I think about twenty or twenty-five days is about right. You know as well as I do that cases are not all alike, and you have to know when to unwrap.

PROFESSOR CLOSE: How can you tell this if the bud is covered up?

MR. MCCOY: You can tell easy enough if the bud is alive, just like anything else.

MR. MOSELY: You say you can't graft pecan trees here?

MR. MCCOY: I don't think so.

MR. WEBBER: What do you graft?

MR. POTTER: And what will you do about the nut trees?

MR. MCCOY: I will bud.

MR. WEBBER: What value is the grafting to us?

MR. MCCOY: You may be able to graft.

MR. W. C. REED: We *can* graft.

MR. MCCOY: Maybe you can, but I can't.

I don't think root grafting is a success, although we have some fine trees that are root grafted. I don't know what it is but there is something wrong; some of them are all right, to be sure but I don't find it a general success. Of the two methods, grafting and budding, I will bud.

MR. HARGIS: Mr. McCoy, I have a number of seedling pecan trees in good healthy condition and I want to transform them into good bearing trees. What shall I do?

MR. MCCOY: Mr. Littlepage will cover that.

THE PRESIDENT: I don't know about that, whether I can or not, but that will come later. There is one thing that ought to be covered, or demonstrated here, and that is the method of working the hickory and the pecan by the slip bark method. I think the slip bark method in the hickory and pecan is a method that everybody ought to know, and also this ought to be used with the walnut tree. Some of the walnuts ought to be top worked to English walnuts in the North. And it's the same way with the hickory through this section. There are thousands and tens of thousands that ought to be top worked to fine shagbarks, and I am going to call on Mr. White who is the most successful man in this topwork method I have ever seen. I top worked twenty-six this spring, and got twenty-three to grow; he did twenty-two and made twenty-one grow, so that record beats mine. I will say also to those of you who are interested, get a copy of Mr. Olcott's *Nut Journal* and you will see a lot of good cuts showing the results of top working. To those of you who do not

[Pg 51]

know Mr. White I will say that he is associated with me in some tree work and I think he is perhaps one of the most successful top workers I have ever seen. Paul, you will now give us your demonstration.

(Paul White now gives demonstration of top working.)

MR. RIEHL: I would like to say a few things right here, I don't want to be thought altogether idle. I live in Illinois, your neighboring state. I have learned lots of good things here and I want to give a little. I have been experimenting in the nut business for some time; I have studied propagation and there is one point I think will be new to you. I had difficulty in propagating hickories and pecans until I got the thought of hermetically sealing the scion. I first used gum shellac, but later I found that by covering the scion with grafting wax completely it serves the same purpose as the paper. It takes the place of all that wrapping, except right at the wound, and does away with the sacks. I have tried them and I much prefer covering with grafting wax. Your buds will come right through the wax, and you don't have to bother about taking off the sacks, and there is no danger of leaving the sacks on too long.

THE PRESIDENT: That is a very good suggestion, Mr. Riehl. There might be some discussion of that. It occurs to me that with that method it is very essential you have the right kind of grafting wax, otherwise it might injure your bark. Are there any suggestions or questions before we finish the grafting demonstration?

MR. RIEHL: I wish to emphasize the fact that the wax must not be too hot.

THE PRESIDENT: What is your formula, Mr. Riehl?

MR. RIEHL: Four of resin, two of beeswax and one of linseed oil.

THE PRESIDENT: Are there any further questions?

[Pg 52]

MR. DORR: Suppose I wanted to get a certain variety of tree by grafting. For instance if I couldn't buy the white Heath Cling peach then my only resource would be to bud on another tree. But suppose I struck a nursery where I could get good seedlings of this tree. Wouldn't a natural tree be preferable to the budded one?

THE PRESIDENT: There are no true seedlings, so far as I know.

MR. DORR: Do you mean there are none at all true to seed?

THE PRESIDENT: No, nut trees do not come true to variety. In other words, Mr. Dorr, I might put it this way. In the big Green River orchard over here there are some of the very best pecan trees, but those of us who have been observing them for years have found it is only through propagation we can get a Green River and a Major. It would be a failure to get the nuts and plant them and hope to get the varieties that exist there, just as it would to plant some nut that grows a hundred miles away, because the pollen up and down the river would mix in these varieties. It is the same way with the walnut, when you undertake to plant an English walnut and get it true to the seed, you are going to have a failure. If you plant a Rush walnut you may get a nut that resembles it but there is no probability of its being a true Rush walnut. That is why we have these discussions of budding and grafting. We should be glad if seedlings would come true but they do not. I will show you tomorrow, at Enterprise, the great variety of seedling pecans, and I want you to look them over well.

PROFESSOR SMITH: May I answer his question? I think he asked, which is better the tree from the nursery, the natural tree, or a grafted tree?

THE PRESIDENT: If he did, I didn't understand.

PROFESSOR SMITH: That was the question, and I will say he can't find a Heath Cling, unless it is top worked.

MR. DORR: Some farmers who have tried a great many experiments hold to this theory: If you select the seed properly you can produce fruit as good as the nurseries produce it. The things the schools teach don't coincide with what those practical farmers observe.

PROFESSOR SMITH: When you try to find farmers more practical than these men here, you have got some to find.

THE PRESIDENT: The farmer who says he can do that is mistaken.

MR. DORR: He says the same thing about you. When I buy a grafted tree a storm comes along and breaks it where it was grafted. If I can get a perfect seedling I will have a stronger tree.

[Pg 53]

MR. McELDERRY: The very thing he is inquiring about has cost Posey County thousands of dollars. Men tell them they have trees that are better than the nurserymen sell and they bite and find they are mistaken. But they get them and pay from ten to fifteen cents more than they would to the dealer. There is no man on earth that can keep the Heath Cling true in that way, or any other variety on earth.

PROFESSOR CLOSE: I want to say a word. Two or three people have made the statement here that it is absolutely impossible to propagate any peach or other fruit true from seed. We have been doing it for years. I believe the orchard peach will come true to the seed. With apples there are groups that will come true to the group but not the variety.

THE PRESIDENT: I am glad to hear that statement. I have understood that the Indian peach will come true to that group but it will not be the big Indian peach you have planted. It is a fact that some of those groups have a tendency to come true to the group.

PROFESSOR CLOSE: Yes, they come true to the group and so will apples.

MR. DORR: May I ask another question? What has become of some of those beautiful, delicious seedlings in southern Indiana they had when I was a boy?

THE PRESIDENT: The same thing that became of Washington and Lincoln—they died.

MR. McELDERRY: It is a boy's taste, not the peach, that makes it seem better than the ones we have now.

MR. W. C. REED: I feel that Mr. McCoy discouraged us too much about grafting. I think either method he used will succeed very well. The main point is the time of the year it is done. Up to a year ago we began grafting a few days after the first of April, and continued up to the first of May, and our success varied from ninety per cent to nothing. We decided there was too much sap and went to budding. The last grafting we did gave us the only real good stand we got, that which we did from the first to the tenth of May. We had as good results then as we did in budding.

THE PRESIDENT: That is good, Mr. Reed. I think those facts ought to be brought out and made a matter of a record.

MR. REED: I think it is more the time in grafting than anything else.

MR. McCOY: Mr. Reed has a clay soil and that does not furnish the rapid flow of sap that a warm sandy soil does.

MR. REED: You would have to begin grafting earlier.

[Pg 54]

MR. McCOY: Yes sir.

MR. WHITE: Do you leave that cover of paper on when you coves it with wax?

MR. REED: On part of them we did and on part of them we did not. In grafting walnut trees this season we left some of it on.

MR. WOODS: Just a question as to the strength of that slip grafting. Will it blow off easily?

MR. WHITE: The first year it will blow off a little bit easily. The first year you will have to tie it.

THE PRESIDENT: Are there any further suggestions? If not the next thing on the program will be a talk by Dr. J. Russell Smith of the University of Pennsylvania.

PROFESSOR SMITH: Mr. Chairman, and Ladies and Gentlemen: We have to educate the public—my good friend down by the window, I hope he will not take my remarks personally—is a case in point. He has come in with an argument, which the gentlemen next him says has cost his county lots of money. I am a grower of apples, an experimenter in nuts and I raise peaches to eat. I am planting seedling peaches and I know that when I go on that hillside of mine I can get little red seedling peaches and plant them and get the same kind, which have, I think, as much sugar and flavor as any big peach two inches or two and a half in diameter. I raise them true to the type too, but I would not think of putting out a commercial orchard of seedling peaches. My neighbor tried it, to his financial sorrow.

But it is surprising how this seedling error sticks. People are going to be buying seedling trees twenty-five years hence and thinking they are getting the best to be had. Here is an article that bears me out. Here is an editor who has published a very glaring thing. This is No. 139, Vol. 113 of a paper devoted primarily to ginseng. This question was asked: "What do you know about the Pomeroy English walnut trees and fruit?" and the editor answers: "The Pomeroy walnut trees are all right and you will find at least nineteen out of twenty hardy. That is what I find here and we often get it down to 20 below zero. The nuts are of good quality. Beware of the Pomeroy trees offered by the Rochester nurserymen. These are grafted trees. Pomeroy raises his trees on their own roots, all of them are true seedlings, and that is why once in a great while one turns out tender."

[Pg 55]

[Pg 56]



J. RUSSELL SMITH
President of the Northern Nut Growers
Association

MR. DORR: I believe I am as old as you are and have gone the same gait exactly. I lost my job and went to farming. I was once a college professor, too, but there are things I find now I didn't find then. Two nurserymen come to me and sell me two Grimes Golden apples. I plant them side by side and they do not turn out alike. Why not if they are grafted trees? I am not knocking, you misunderstand me, I am a truth seeker.

[Pg 57]

PROFESSOR SMITH: I believe that. We always find something we didn't buy. My head man says they jump in. I have some very fine specimens that came by accident, and of course we have a certain amount of bud variation. We find variety even by propagation. The trees will vary the same as people will but they will vary a great deal more if we get the seedlings. The successful growth of nuts, as of any other fruit, demands the use of top worked trees from the best known parentage. That is the way we do with apples, peaches, pears, and cherries. Nuts will have to come in the same class from the best known parentage. The big thing today is to find out the best known parentage and then spread knowledge so that no editor will be capable of fooling people as in the article I read a few minutes ago.

That is point number one. My point number two is a different one. It is the question of the names of the varieties of northern nut trees, particularly the names of the pecan trees. Twenty years from now there will be a million people in the North who will gravely tell us the pecan grows down South, not in Indiana, and that you can't grow them up here. I haven't a doubt there will be a million people that will believe that twenty years hence. How can we get that idea out of their heads? I think we have an agency in the mere names of the trees which will cause people to buy more, yes a hundred thousand or two hundred thousand more trees, than they do at the present time. If we pick out one name, Indiana, what does it mean? It will make a man ask questions, and if he has any curiosity at all he will want to know if it grows in Indiana and if it will grow in any state with practically the same latitude as Indiana. But if he hears the name Schley, what does it mean? Nothing, because practically everybody has quit thinking about Admiral Schley. I recall eight varieties of northern pecans three of which have good names and three perfectly worthless ones. Indiana, Kentucky and Green River are the good ones. Green River is the least valuable because it is not well enough known. Indiana and Kentucky are great names because they are the names of great states. Then we have Busseron, Warrick, Posey and Buttrick. The Busseron nut which grows up at Vincennes ought to be renamed Vincennes. There will be thousands more sold in Vincennes when it is known from the name that it did not originate in Pennsylvania but that it is a product of Vincennes. My point is this, it gets a name that shows it to be a northern product. I am not going to fight for that particular name but it is growing at Vincennes and that is a perfectly good reason for it to be named after that well known city. Now we come to the Posey. It grows on the banks of the Wabash and ought to be named the Wabash. Nobody knows anything about Posey County and what the reason is for the name, but the banks of the Wabash where it grows have been made famous in song. We can hook a sign on that pecan that will sell twenty or thirty thousand more Poseys than are sold now. Next we have the Buttrick which is found growing in Illinois. That is the reason why those Buttrick pecans will sell under the name of Illinois. It is named for a man but it doesn't mean anything in the world but women's dress patterns and is not a good name for a pecan.

[Pg 58]

MR. MCCOY: A change in a name like Buttrick to Illinois is a good one. Any name like this that tells

by itself the fact that the nut is from the North is worth a lot to the people who want to sell pecan trees, and to the people who want to eat pecans, and can buy them reasonably. Therefore, Mr. Chairman, I move that a special committee be appointed to consider changing the names of these pecans and giving them names showing that they are northern nuts.

MR. POTTER: I second that motion.

THE PRESIDENT: It has been moved and seconded that a committee be appointed to consider the matter of changing the names of some of the pecans.

A MEMBER: Isn't there a Vincennes in Europe?

THE PRESIDENT: There might possibly be more suggestions, and we should be glad to hear from anyone along this line.

MR. REED: I agree with Professor Smith in part of his remarks. We have a walnut called the Ontario from Greene County, Michigan. If we should call it Michigan that would indicate where it came from. But it is widely known now as the Ontario, and would it be best to change its name, even though it comes from Michigan?

MR. MCCOY: Wouldn't it have been better to have called it Michigan to start with?

MR. REED: I think so.

MR. MCCOY: We have pursued these things for many years and we have made some misnomers in naming them. I think it's a good idea to change them.

MR. POTTER: I am very much pleased with the idea Professor Smith has advanced for renaming these trees. They don't mean anything now as he says, and I think it would be a great forward stride for this association to rename these trees.

[Pg 59]

MR. SIMPSON: I think Professor Smith's idea is a move in the right direction. We were the first people that propagated any of these northern varieties, and my idea is to call that variety Indiana, for the very reason he mentions here, that it distinguishes it as a northern variety. I think his suggestion ought to be followed out as far as it is possible. At least with several varieties.

THE PRESIDENT: The chair takes the opportunity of saying that the suggestion meets his most hearty approval. I have taken up pages of letters in writing to people about nuts, and explaining to them that the nursery from which they bought had nothing to do with the hardiness of the tree, that it was the location of the parent tree that determined this. I was struck by an advertisement last year which said, "buy them from the nursery furthest north." That hasn't a thing in the world to do with it. You may take some of this very wood we have here and propagate it on the McKenzie River, or the Yukon, and say you are selling trees propagated in Alaska, but the hardiness all depends on where the parent tree is. These parent trees have been placed there by nature, and when we distribute them we will distribute what nature has put into the parent tree. These trees are there because they have withstood all the climatic conditions, and nothing would be of more value, it appears to me, than to adopt the suggestion for renaming them. In the first place many of these trees are named for men not entitled to have them named for them. Many of those who own these trees do not know their value and object to anyone that knows anything about a nut tree going in and getting bud wood, and are contrary and mean about it. It is very rare that the importance of these seedling pecans is known to their owners, and they are not entitled to any consideration themselves. They are generally discovered by some outsider who had to beg to go in and get a stick of bud wood. Is there any further discussion?

MR. C. A. REED: You are right about that. But I would like to go on record in opposition to this movement. When pecans are recorded in the standard works the names stay. The rule is generally accepted that where the names have once been recorded no other name can be permitted. It is easy enough for us to vote to change a name but not so easy to change it in actual practice. How many of us will know these pecans that Prof. Smith has mentioned by any other names than those that have already been accepted. Suppose we do rename them, we shall have to explain that they are the old pecans under the new names.

[Pg 60]

MR. MCCOY: We remember well when we changed the name of the Green River. We decided that among ourselves here. The Posey pecan used to be the Grayville and you know when we changed it. I call it the Grayville yet because I got used to that. You changed it to Posey thinking it was from Posey County but it really is from Gibson County. I have no doubt many of these men here call it the Grayville, and then lots of men that hear me call it the Grayville ask me what I mean as they don't recognize it under the old name. I am in favor of changing these names. I named some of them and you know it, but I didn't always name them right and you have changed them here. Can't we do it again if it will sell them?

THE SECRETARY: What is the motion exactly?

THE PRESIDENT: As I understood it was to appoint a special committee to take up the matter, and consider changing these names.

THE SECRETARY: Why should we do that when we have already a committee on nomenclature? What is the use of a special committee?

MR. POTTER: The special committee will report quicker.

THE PRESIDENT: If it belongs to the committee on nomenclature to consider the matter it will be best to do it now, immediately. If the names are to be changed they ought not go another year, and if not to be changed it ought to be known. The chair will be glad to entertain a motion that the committee report tomorrow on it.

MR. POTTER: I make a motion that the matter be referred to the committee on nomenclature and that they be ordered to report tomorrow.

THE PRESIDENT: Do I hear a second?

A MEMBER: I second the motion.

C. A. REED: I am the chairman of that committee and I could not report tomorrow so I will ask that if it is to be taken up by committee that a special committee be appointed.

THE PRESIDENT: It is Mr. W. C. Reed who is the chairman of that committee, to which committee was added C. A. Reed and R. L. McCoy.

PROFESSOR CLOSE: I would like to ask Mr. Reed if he is absolutely sure about the rule he has just quoted of the American Pomological Society, that a name cannot be changed. I don't remember that rule.

[Pg 61]

MR. REED: Mr. Taylor was the framer of that rule and in actual practice he has adhered to the first name used, and did at the time he was secretary of that society.

PROFESSOR CLOSE: Have you not in mind the rule that a name like Posey being given this variety no other variety can be given that same name. I think that is the rule you are thinking of.

MR. REED: No, but that is true too. You know we had the Sovereign pecan, and after that name had been established Mr. Taylor wrote up that variety for the yearbook, and the name had been changed then to the Texas Prolific, but he still retained the name of Sovereign for the reason that it had been called that before.

PROFESSOR CLOSE: It seems to me that an organization could change a name. I think the idea is a good one. Take the name Indiana. I think that name ought to be given to the very best seedling variety that is a native of that state. I don't know whether the Indiana is the best one or not, but it is now too late to change that. If it is not the best the name will have to stick to the variety to which it has been given, even if later on better varieties are found.

MR. MCCOY: I know there are some extremely fine pecans on the Illinois River because I have some samples of them, a good bit better than the ones we have, and I suggest that we reserve the name Illinois, which would be suggestive of both the river and the state, for one of them. I know the nuts are there and I think they are very fine. The Illinois River has more pecans on it than the Wabash.

DR. DEMING: I second the motion.

THE PRESIDENT: It has been moved and seconded that the matter of changing the names of these nuts as suggested by Dr. Smith, be referred to the committee on nomenclature, and that they be instructed to report tomorrow.

(Motion carried.)

THE PRESIDENT: We have with us this afternoon, the state entomologist, Mr. Baldwin, who knows many things of interest to nut growers, and we shall be glad to hear from him.

MR. BALDWIN: Mr. Chairman, and Members of the Nut Growers Association: I am wholly unprepared to make a talk before this association and must say I am not sufficiently familiar with nut culture to be able to tell you anything of interest along that line of work. Your discussion relative to the pollenization of plants was intensely interesting and clear. There is no use in trying to dodge the fact that every plant has a father and mother, and that father and mother also have fathers and mothers, the same as we have. The reason I am not just the same as you is because I have a different father and mother, and the reason I am not just the same as my brother is because the characteristics of the parent may show in one individual and not another. If your pecan trees should stand out in an isolated situation and pollenate themselves the individual nuts would not all be the same. We have peaches that come nearly true to name, and the same is true of the Snow apple that has been grown in the St. Lawrence valley for generations. The pollenization of budded and grafted fruit trees or nut trees is brought about, in my opinion, wholly by the surroundings or environment of that tree. The well known experiments of the Geneva Experiment Station have very satisfactorily proved that the variety does not change except in so far as the environment changes it. Of course there are some things in nature we do not understand as where very decided deviations, or wholly distinct varieties arise; but the general rule holds, that whenever you propagate trees, and get your buds from some variety having merits, those merits will be transferred to the trees that are budded or grafted, and will remain in them while the surrounding conditions remain the same, and changes in the fruit will be effected only by changes in the locations in which the trees grow.

[Pg 62]

I suppose that as I am the entomologist of this state you expected to hear some discussion of things of interest to you in this particular field, but I came wholly unprepared for that. In this state so far as the nut growers industry is concerned we have not done anything at all. There is a large field for work but I must confess I am wholly unprepared to give you a talk on this subject.

Where I was raised, back in Pennsylvania, we have several well known bugs that the nut growers have to contend with, and they are especially abundant with the chestnut. That of course would not be of so much interest to the people of this state until the chestnut growing industry has developed more than at present. I am very glad to be with you and the discussions I have heard have been very interesting.

THE PRESIDENT: We are very glad to have heard from the state entomologist and we want his assistance. We are trying to steer away from bugs and we want his suggestions and help at any time.

We have a number of interesting people on the program yet this afternoon, but the chair is going to take the liberty of asking the president of the National Nut Growers Association, Dr. C. A. Van Duzee to talk to us on any subject that he cares to discuss. I know him well enough to know that anything he says will be good enough to hear: I know him personally, the most of you know him by reputation. He has some pictures here, and I shall take the liberty of passing them around for you to look at, and I am going to say that these are pictures it certainly does my heart good to see. They are pictures of his orchard down South. Just pass them around please.

[Pg 63]

COL. VAN DUZEE: MR. Chairman, Ladies and Gentlemen: I told your President the first thing when I got in this morning that I didn't care to have any place on the program; that I would be glad to talk at any time on any subject he wished me to, and do anything I could to help along. That puts me in bad to start with. As I have listened to the discussions of your meeting the thought has come to me that you are following along very much the same pathway that the southern nut growers traversed five or six or seven years ago. We are a little further along in the growing of nut orchards in the South, but you are certainly going to get along and be abreast of us in time. Perhaps I may be able to do more good if I confine myself to a few practical suggestions as to how I think nut orchards can best be produced. Those pictures represent an orchard which I have in southwestern Georgia and have grown under adverse conditions. The pictures show the culmination of years of earnest effort. They represent what I consider to be a very reasonable success from a practical standpoint. I am a farmer and the first thing I require of my farm is that it shall pay. I have no theories; I have no ideals but those which must stand that test. I am in farming to make it a success; it is my business and everything I do must stand that test. If it doesn't pay it is not successful. That orchard represents the culmination of years of study of the problem of how to grow a pecan orchard on my ranch. That bunch of hogs represents about one hundred and fifty we selected about three weeks ago to put in our early peanut patch down there to finish them up as pork, but it does not show my breeders or young stock. I could talk hogs to you until the cows come home. I set my mark a year ago last spring, after being twice wiped out by the cholera, I set my mark at fifty thousand pounds of meat from my orchard, and I want to say I have animals now in the orchard and in the peanut field together to make that and a little margin to the good. I expect our orchard will produce this year more than fifty thousand pounds of hams, bacon and lard. The reason I am talking about this is that I want to emphasize the fact that the growing of nut trees is a business proposition. I want to say, in passing, that I believe no better thing could happen to the people who live in America than that every man who owns land might plant a few nut trees. It is a notorious fact that the nut trees which do the best, and which make the most money for the man who plants them, are the ones planted in the garden and immediately about the home where the conditions are favorable for the best development. It is also true that all the successful pecan promotions that have been put over on the American people have been built upon the records of those individual trees, which were grown under the most favorable conditions. That is the source of all that magnificent literature, and all these people that have been inveigled into these promotions in the South are going to be disappointed. That orchard in the photographs is eight years of age, or will be this year, as it was planted seven years ago last February. It has never paid a dollar of profit. You won't find any literature on nut orcharding in the South that will convey any such impression as that. I do expect it to pay this fall a small margin of profit. I won't attempt to explain all that but will say that an orchard must be eight or ten years of age before you may expect or hope for a reasonable profit. After that it ought to pay well. It is well worth going after because it is one of the most legitimate, safe, satisfactory business opportunities we have ever found. I don't know anything that pleases me more as a business man than the growing of a large orchard of nut trees, and I assure you, gentlemen, you must bring to that orchard the same degree of skill, energy and patience that must be brought into any large business proposition to make it a success. My own idea is that the nut orchard is a legitimate part of the general farming operation. If you travel from one end to the other of this country you will see that it is covered with apple orchards. Small apple orchards were a part of the original farming operations. The fact that they have been neglected does not alter the situation at all. If the owners of those orchards had given them proper growing conditions, they would have been successful. In the same way I say the successful nut orchard is going to be a legitimate part of the general farming operation.

[Pg 64]

I want to talk to you a few minutes from a business standpoint. Suppose you want to plant an acre of nut trees, and you buy an acre of land, and you buy your trees and have them planted. Who is going to take care of them? You hire a man who knows about the care of trees. You couldn't afford to hire one who didn't, and you would expect him to put in part of his time some other way. If he didn't your investment would amount up to so much you couldn't make anything on the deal. I emphasize this fact because I believe you should make your nut orchard propositions large enough so that you could afford to hire the best men to handle them for you. If you can't do this there is another way which has been practiced a great deal in the South and which I hope to see practiced in this section. I have worked out a solution of the problem, which I

[Pg 65]

believe is very promising, and it is this: Get enough men, for instance in the city of Evansville, who want nut orchards, to go out a few miles and buy a bunch of farms, and put those farms under the management of a man big enough to make them a success, then plant your orchard, and use the land for general farming operations as well. I could go on indefinitely along this line because it is inexhaustible. I think it is the keynote to success in growing nuts. You can't be successful without giving attention also to the things I talked about this morning. You have to analyze the root pasture and the soil. You have to observe from the time the trees are bought and delivered, and it requires the most careful attention. You can't hope to accomplish a thing like that until you do give it your most careful attention. If you have money of your own, or make your living in some other way while the trees are growing, and feel that you must delegate it to somebody else, associate with yourself other men and make the undertaking big enough so you can hire the very best talent the country affords. In this section of the country land I presume is worth a hundred to two hundred dollars an acre, and you have got to make it pay interest. I want to talk about the figures. The farmer or nut grower, who does not keep a set of books and can't tell you at the end of the year whether he has made enough money to pay off his bills and legitimate expenses, and allowing himself a compensation for the time energy and experience put in the business, is not successful, and I don't care to consider him, because he is not a farmer as I see him. You must keep your figures and know how you stand. Before I get to the photographs I want to go back to our convention at Chattanooga. I don't know whether there is anybody here that was at that meeting or not. I was third man on the program to respond to the address of welcome by the mayor of the city, and I was new in the nut game and new in the South. I went up there with this thought, "I will listen to the other fellows, and take my cue from them, and make a little bluff at doing the best I can under the circumstances." To make a long story short, when the president called on the other two men to respond they were not there and that left me with an audience of four or five hundred people to talk to and nothing much to say. I apologized to them for being unable to talk in a light way. I said, "I can't say anything unless it is in earnest; I have got to talk about something I am interested in." I went on to advocate this principle, and it is a principle I wish every man or woman in America would grasp and retain and put in execution today; that is that the calling of agriculture is the most honorable calling a man can follow, and it is up to us to inspire in the children of America the thought that such is the case, and help them in every way to go out into the field of agriculture and be successful farmers. That is what I want to say. I have no patience with the men who farm and are not successful business men, because they are the people that make life in the rural districts objectionable to the children, and are responsible for the children of the best blood in the country going into the turmoil of the city where it is largely lost. You have to pay interest on the land you use, and you have got to pay yourself a fair compensation for the brains and energy you use on it. I want to call your attention to one other thing. This farm I bought nine years ago from a man who had farmed it until it wasn't capable of producing enough income to enable him to keep it, and I undertook to build an orchard on that farm, and I have done it. Last October, where these hogs are grazing in the picture, I planted a crop of oats and I got forty bushels of oats to the acre the latter part of April. I then turned around and broke the land up and planted it in sweet potatoes, which are just maturing and the crop will run one hundred and fifty bushels to the acre. Don't forget that that is two crops grown and harvested in one year on the same land. I consider it the best treatment for the land. I pastured the oats last winter with the hogs, so I got a very material gain from the oats in that way, and as soon as my sweet potatoes are harvested I will turn the hogs back in and let them glean the field. It is a fact that we can make lots of pork on the gleanings of a sweet potato field. And besides that these trees, each one of them, will bring me four, to five, or six dollars' worth of nuts. That land cost me sixteen dollars an acre, and there is a net income of several dollars above the price of the land, and I presume there is an individual growth on each tree that increases its value at least four or five dollars worth of nuts. There you see I have several dollars' worth of nuts, the sweet potatoes and the oats all grown on the same land, besides the pasture for the hogs. Those things are possible to the man who will go into the growing of a nut orchard in a business way. I have other land adjoining this and I will also utilize it for these purposes and grow such crops as I can grow in the orchard, because when the nut crop is ready to gather, I must get the stock out. I keep my organization employed the whole year. I have the best superintendent I know of and I have to make his salary out of my business. I get the best tree man I know of and he also receives his compensation from the money I make in farming. Last year I extended my farming operations in order to make it possible for me to keep my organization running full speed three hundred days in the year. I am dwelling upon this line for this purpose. Don't let any promoters ever get his hooks into you or tell you things as we have had them told to us down there. Thousands and thousands of acres of pecan orchards have been planted without a thought of the things I am talking about. They have planted thousands of acres in Georgia; they have not any organization and the man in charge is inexperienced and they don't pay. Each year from the time I planted my orchard, and got it to the point where I could count on an orchard crop, it has increased in value, and today it is worth four or five dollars a tree above what it cost me. It is a magnificent business proposition. I am so in love with my work I could talk to you until the cows come home. I want to impress on the people of the Northern Nut Growers Association and their friends the one fact that in order to be successful in a commercial way you must go into it right. There is no short cut.

[Pg 66]

[Pg 67]

THE PRESIDENT: The next on the program will be an article by Mr. Olcott.

THE FUNCTION OF THE CLASS JOURNAL

RALPH T. OLCOTT, *Editor "American Nut Journal"*

In the multiplicity of publications one must distinguish, for his use, those which are for entertainment or general education and those which specialize. Class publications differ from trade or professional publications in that they are not confined in their appeal to the members of a trade or profession. The class publication is for that portion of the general public which is wholly, or to a certain degree, interested in the particular object to which it is devoted.

What has been said with regard to class publications is probably understood in a general way, but a brief consideration of its bearing upon the nut industry may make the status of a nut journal clearer. Let us suppose that an industry has no publication devoted especially to it. It must then depend upon communications between individuals and upon annual meetings and their printed proceedings for its interchange of thought; for it is presumed that it will have a national or sectional organization. A very efficient organization with the means at hand to serve its members well can do a great deal to keep members in touch with each other and to advance the interests of the industry. Organization, of course, is essential; but without a periodical exponent there is lacking the advantage to all readers of general timely discussion, questions asked and answered, special articles, illustrations and the news relating exclusively to the industry—all of which makes the periodical a working tool, and its bound and indexed files an almost indispensable adjunct to the literature and reference storehouse of the field covered.

[Pg 68]

Not only to the individual, but also to the class association do these characteristics appeal with special force. For, unlike the trade journal, it goes out among the general public as a factor in the education of those who seek information of the special kind. In this way it is a means for extending the operation of the industry, and consequently of increasing the membership and influence of the association. And right here is a point which those who have been operating in the industry for some time should consider. If any portion of the general public is to receive through the class journal the information desired, there must of necessity appear in the journal from time to time statistical or other matter with which the experienced nut grower is familiar. To a considerable extent the novice may be referred to existing literature on a special subject; but not all of such literature is readily available. For instance, the *American Nut Journal* has been carrying in each issue a summary of the figures showing the progress of the American nut industry. These figures have been seen repeatedly by experienced growers, but even for them they may prove convenient for reference; and certainly to the newcomer they should be interesting and valuable. Original matter, of course, must be the basis upon which the contents of a class publication are built. But an article, or a portion of an article, which has an important bearing on the specialty under consideration may often be reproduced in the class publication, even though it may have appeared elsewhere; for we are all too busy to read many publications, and the chief purpose of the class publication is to assemble from all sources that which particularly relates to the subject. In theory at least the class journal should be the storehouse to which in its bound and indexed form the subscriber may go for information on any phase of the special subject. That is a high and not altogether attainable ideal, but the nearer the journal approaches to that aim the more valuable will it be to its subscribers. It should at least record the sources of all information on its special subject, even if it cannot present it all.

What has here been said in outline regarding the function of the class journal will indicate to the nut grower the place the *American Nut Journal* should occupy in the development of nut culture. It is unnecessary to say that co-operation between the editor and those in the industry is essential, and for that reason all should feel free to exchange views through this medium. Aside from the practical benefit it may be to the individual, it is a constant source of publicity for the organized effort represented in an association of nut growers—and it is through publicity that an industry develops.

[Pg 69]

To deserve the co-operation of all in the industry the management of the class publication representing it must determine what is the highest and largest function of the field which it serves and then strive in every legitimate way to promote that function.

To deserve the manifold advantages which such a publication affords it is incumbent upon those in the industry, on their part, to make it possible through their subscriptions and through their advertising to maintain such a medium. It is probable that if there were no such publication every loyal member of this association would gladly pledge ten cents a month provided some one could be found who would expend the time and effort to provide it. Just that opportunity has been presented, and it is a pleasure to say that many have appreciated it.

THE PRESIDENT: There is no one thing that would get results for you better than a good periodical. The Department of Agriculture issues bulletins but that department cannot go into the journal business, the business of publishing my opinion or someone else's opinion. The Department of Agriculture must confine itself to the summaries of facts, and that leaves a gap that must be filled in by some good periodical properly edited. It is with great pleasure that we see the *American Nut Journal* which Mr. Olcott is putting out and attempting to give us the best he can get. The chair will be glad to hear any further suggestions on this subject.

W. C. Reed: I think we are very fortunate in having a journal of this kind, and having known Mr. Olcott for a number of years I know he is giving the people a good journal. I think it is customary in most instances for all trade organizations to have their journal, and I think in this case the Northern Nut Growers Association ought to adopt *The American Nut Journal* as their official organ. I make that as a motion.

MR. MCCOY: I second the motion.

THE PRESIDENT: It has been moved and seconded that we adopt *The American Nut Journal* as the official organ of our association.

[Pg 70]

(Motion unanimously carried.)

THE PRESIDENT: Mr. W. C. Reed, you have something on the program and we will be glad to hear from you now.

MR. REED: I had prepared a short paper on top working the black walnut with the Persian or English walnut but I won't read the paper on account of the limited time, for there are others here we would rather hear from. Quite a number of you are going to Vincennes and you can ask questions there and understand it better than I can tell you here. However there may be some that can't go along, so any questions you want to ask at this time I will be glad to answer.

MR. POTTER: It will be impossible for me to go to Vincennes on Saturday as I have to go home tomorrow night. I would like to ask Mr. Reed if the method of grafting the pecan is the same as top working the black walnut?

MR. REED: Yes sir. Suppose this is a large tree twelve, eighteen or twenty inches in diameter. We cut the limbs back to where they are four or five inches in diameter and, supposing that we want to graft this limb here, we will cut it up here one or two feet because it is hard to cut limbs without their splitting. Sometimes they will split on both sides. For that reason we cut them high and then again, later, back to where we want to graft. We usually find it best to do the first cutting back along the latter part of February or first of March, and when it gets time to do our grafting we cut them off again about two inches so that we shall have fresh wood. We saw them with a fine tooth saw. We prefer to do our grafting from about the first to the tenth of May. We keep scions in cold storage. I think that is quite an advantage although I haven't tried the walnut in cold storage until this year and hadn't thought very much about it until the last few years: but we find the ones we were most successful with were the ones we had kept in cold storage.

PROFESSOR SMITH: What time were they cut?

MR. REED: In February, I think, but I think it would be much better if they were cut in November or early December, especially the walnut, and I shall do that this year. With the pecans I don't think it will make any difference.

PROFESSOR SMITH: What temperature in storage do you use?

[Pg 71]

[Pg 72]



W. C. REED
Vice-President of the Northern
Nut Growers Association

MR. REED: Ordinary apple storage, thirty-two to thirty-eight, or freezing. This spring we grafted between the first and tenth of May; some of the trees were in full leaf. The sap was flowing very readily and they bled very freely, although the ones that had been cut back early would not bleed like the ones you cut when you are ready to graft. In grafting we used the wedge graft, splitting straight down and placing three or four scions on each limb three or four inches in diameter. However the method we like the best is the slip bark method, but we have had fairly good results

[Pg 73]

with both methods. Of the trees we grafted this spring 60 to 75 per cent were grafted from cold storage scions. We used some that had not been in cold storage, and we didn't get them to grow. We wax the grafts thoroughly and cover them with paper sacks. We do not use any tying on the large limbs as we don't find it necessary. However, we have done more budding than grafting in top working large trees and I think it is a little surer, but we have been fairly successful with both. For budding we cut them back the same as if we were going to graft. We let the sprouts grow until about the middle of July or first or middle of August, and we have let them go as late as the first of September. Then they are ready for budding. We follow about the same method as has been demonstrated. In working large trees it is very important that you keep all cuts waxed thoroughly with grafting wax.

MR. MCCOY: Have you had this experience, that English walnuts will produce female blooms before they do the male blooms?

MR. REED: We haven't had them long enough to determine that clearly. We have eight trees and four of them produced pistillate blooms and we had to bring pollen to pollinize them.

MR. MCCOY: It is possible to have your sprouts almost where you want them by taking the sharp end of an old file and dressing the bark carefully. The buds are more apt to come there than anywhere.

MR. REED: We sometimes lose a good many shoots from storms. One tree was budded about three weeks ago and that storm about ten days ago broke every one of them.

MR. POMEROY: What time did you say to bud the black walnut?

MR. REED: About the first of August, from the middle of July to the middle of August, as a rule. We are budding some yet. That depends on the wood; do it when the wood is ripe enough. We are holding back on some now to get the wood ripe enough, and as fast as they get ripe enough we bud them. You can bud them late if you cut them back freely in the spring, smooth with the ground. Then your buds will take much more rapidly because you have the sap.

MR. MCCOY: Have you had the best success when you cut your trees back in the pruning season? In slip bark grafting there are two ways, you know. One is to wait until you are ready to graft and then cut back. Which do you think is the best?

[Pg 74]

MR. REED: In top working the large trees we had the best success cutting back early, that is in the nursery. We have never cut back any at the time we were ready to do the work.

MR. MCCOY: In other words you head off the sap flow?

MR. REED: Yes sir, we hold it back.

J. F. WILKINSON: Do you find it any advantage to cut your leaflets off before you bud?

MR. REED: I haven't tried that enough to know. When you were at our place some of them had been trimmed in full leaf and had dropped the leaf stalk, and some had been cut off three weeks and still didn't let loose. We can tell more next spring as I kept a record of that.

MR. POMEROY: How do you know when it is ripe enough?

MR. REED: I don't think a man lives who knows exactly. You have to use your own judgment. For instance, when bud wood colors up like this I would feel sure it was ripe enough. When it is green I am more afraid of it, although we have some good success with the green wood, but cold storage wood is still better.

DR. MORRIS: Professor Van Deman said the other day that in cutting bud wood at this time of year it is good to give the bud rest for two or three days. He cuts the scions and puts them in the ice house. That gives them rest and the buds start better and are firmer. Has anyone had experience with that way?

MR. DORR: There is another question I want to ask. If we want to experiment with the processes that have been suggested here, shouldn't Evansville have a place where we can store scions? We should have an ice house. Some of us who don't have shoes, haven't any ice house. I worked in South Carolina one time and made this discovery, and it almost made me weak. The great majority of farmers in South Carolina are men who make fifty dollars a year; they cultivate three acres and own a mule in partnership with two or three other men. Suppose some enthusiast like this man plants an orchard there. What inducement has he for that kind of work? The dream I have had here for Evansville, which is my home, is to bring some of that kind of work into the high schools.

MR. WHITE: In regard to the point brought out by Dr. Morris about cold storage bud wood, I believe that it is better for being chilled. We have found it hastens the callous. The same theory has been borne out by the work of the Department of Agriculture in propagating the blueberry. They found it would not callous and form roots unless they chilled it. Isn't that right, Mr. Close?

[Pg 75]

PROFESSOR CLOSE: I don't remember that.

MR. WHITE: I think all wood must be frozen or chilled, or put in cold storage, before it will take well. I found that by putting scions in cold storage they callous much more readily. Where the temperature is near the freezing point walnut and pecan wood will callous more readily. On some that I took out on the 31st of July I had written the names, and the callous had formed until we

could scarcely read the names. In a week or ten days the callous was around them. On new wood, it would take twice as long.

PROFESSOR SMITH: If they had calloused in cold storage was it because they had been too warm?

MR. WHITE: No sir. If you will take a tree that you want to set out and cover the roots until you can set it out, you will find the callous forming no matter if the ground is frozen hard.

PROFESSOR SMITH: You mean a tree planted in the fall?

MR. WHITE: Yes sir.

MR. POMEROY: Where one had no cold storage what would he do?

THE PRESIDENT: If you haven't cold storage, such as Evansville affords, and have an ice house you can use that. It is very important to pack the scions in excelsior and sawdust and be sure there is very slight moisture, and to paper line your boxes. Colonel Sober keeps chestnut scions by standing them on end in cans. He fills in with a thin layer of sawdust, punches holes for them to breathe, puts a lid on and sets them in the ice house and says they keep splendidly.

PROFESSOR SMITH: In an ordinary ice house?

THE PRESIDENT: Yes sir.

COLONEL SOBER: I have kept them that way for two years.

MR. WHITE: Dr. Morris will tell you the next best thing if you haven't cold storage.

DR. MORRIS: We use a method I got from Professor Craig, the way he kept his for many years. His plan was to set a plain wooden box very smoothly on the ground, smooth off the ground so the box would set evenly on all sides, then pack in a layer of perhaps half an inch of fine leaves like black locust leaves, and on that he would put a single layer of scions, then, more leaves and scions.

MR. MOSELEY: If you have an ordinary ice box, would that be cold enough to put the buds in?

DR. MORRIS: I think that would be plenty cold enough. I know of a man in Maryland that has been using that for a number of years. [Pg 76]

THE SECRETARY: Do you wax the ends?

DR. MORRIS: Sometimes I do, and sometimes I don't.

THE PRESIDENT: You couldn't keep your scions all the time in an ice box, could you?

DR. MORRIS: No, not for any length of time, but just for a few days you could, in an ordinary refrigerator.

THE PRESIDENT: When you cut your scions in the winter for future use, you should keep them down pretty close to freezing. I used scions in Maryland this spring cut last February in this locality. We put them in cold storage and kept them there until April. Then they were taken out and shipped to me in Washington. They arrived in perfect condition and I took them to a big green house across the street and put them in a long box and set them up in the big refrigerator where they kept their buds. I had these within two inches of a thousand pounds of ice and the Green River proceeded to grow within two weeks. You have to keep them in cold storage. It is so cheap, however, in Evansville that there is no excuse not to keep them in perfect condition. These cold storage people here, Holt & Brandon, are very fine people. We have kept very large amounts of bud wood there and their charges have been very small.

Before we get through I want to call your attention to the rest of the program. Immediately after adjournment there will be automobiles waiting to take all who want to go sight seeing in Evansville. This is by the courtesy of the Evansville Business Association. I want especially again to call your attention to the lecture tonight by Mr. C. A. Reed, and for fear that those here may have an idea that it will be strictly technical I wish to say that he will avoid technicalities as far as possible. He has one of the finest collections of lantern slides I have ever seen. He will take you to the walnut regions of California and to nut regions all over the United States. Any questions asked him will be cheerfully answered but I would suggest that unless there is something extremely important, you reserve your questions until the conclusion of his talk and not interrupt unnecessarily because there are a great many slides to get through with. Those of you who are here, come tonight and bring your friends, bring the ladies and children and everybody else, because it will be interesting and educative generally. Do not forget that we leave in the morning at 7:15, not 16, nor 26; that car will leave at 7:15 and if you will be there on time we can get together on the car. We will now adjourn until 8 o'clock. [Pg 77]

Meeting re-convened at 8:00 P. M.

THE PRESIDENT: The first thing on the program will be an invitation to join the association. For the purposes of our organization we need members, and we especially need anyone who has any interest whatever in nut culture. The membership of persons joining now will expire on the 31st

day of December, 1914; the membership dues are \$2 per year, which includes a copy of the annual report. By joining now you get this report and the three preceding ones.

PROFESSOR CLOSE: Mr. Chairman, may I say something regarding the annual report?

THE PRESIDENT: We will be glad to hear you, Professor Close.

PROFESSOR CLOSE: It seems to me that those who pay dues for 1914 ought to receive the report of the meeting for 1914 no matter when it is printed, even if it is not for three or four months after the end of the calendar year. In that way the reports will match the calendar year; that is they are the reports for the year that the meeting was held and the papers and discussions took place, and this one should be known as the report for 1914. That is the way we run them in the other societies and it seems to me there would be no confusion at all if it were managed in that way.

THE PRESIDENT: The chair very heartily agrees with that suggestion and thinks that should be the practice of the society. The chair would be very glad to entertain a motion to make that the rule.

PROFESSOR CLOSE: I should be glad to make the motion that the proceedings of the meeting of each calendar year be reported as of that calendar year and distributed to the members who pay dues for that calendar year.

(Seconded and carried unanimously.)

THE PRESIDENT: Are there any other candidates for admission to this society? If so, hold up your hands and our distinguished secretary will visit you immediately. Are there any committee reports?

W. C. REED: The committee on nomenclature desires to report as follows:

Voted on the Smith and Potter resolution to recommend changing the name of the Busseron pecan to Vincennes; Posey pecan to Wabash; Buttrick pecan to Illinois. It was the opinion of the committee that the other names of pecans had been established by the Department of Agriculture by printing in the year book, and that it was not advisable to change them.

[Pg 78]

We recommend, as advisable for members introducing new varieties, to confer with the committee on nomenclature before listing new names.

Signed.

W. C. REED,
W. C. DEMING,
R. L. MCCOY,
R. T. MORRIS,
C. A. REED.

A MEMBER: I move the adoption of this report.

A MEMBER: I second the motion.

THE PRESIDENT: It has been moved and seconded that the report of the committee on nomenclature be adopted. Are you ready for the question? All in favor of the motion make it known in the usual way. It is unanimously carried that we adopt this report. Are there any other committee reports?

PROFESSOR CLOSE: Mr. Chairman, Ladies and Gentlemen: The committee on exhibits has not had a very arduous duty, because we can't have at this time of year very extensive exhibits. But what we have are very interesting. Mr. W. C. Reed has an exhibit of English walnuts, hickory nuts and hardy almonds. You have all noticed the exhibits he has in the glass case. That is very instructive and is put up in such a way that it can be carried from place to place. He also has some photographs of trees. Mr. Wilkinson has an exhibit of fruiting limbs of shagbark hickory and pecans, and various seedlings. To some of us some of those things are almost new. Colonel Sober has an exhibit of grafted chestnut trees. He also has the burrs and in glass jars he has the nuts. Then there is quite an exhibit of the native varieties made by our president, which is very fine. There are also some persimmons. I think, everything considered, the society is to be congratulated upon the quality of the exhibits even though the quantity is not so very great.

THE PRESIDENT: If there is no objection the report of the committee on exhibits will be adopted. The report is adopted. Are there any further committee reports?

MR. POTTER: The committee on resolutions reports as follows:

Resolved, That we extend our thanks to the Mayor and the Citizens of Evansville, Indiana, for the courteous entertainment they have favored us with, and for the excellent facilities that they have placed at our disposal.

Second—That we extend to the Evansville Business Association, and to the members thereof, our deep appreciation of their entertainment and courteous treatment that they have extended to our association.

[Pg 79]

Third—That we extend our deep appreciation and gratitude to Hon. T. P. Littlepage, our president, and Dr. W. C. Deming, our secretary, for their untiring and valuable services in behalf of this association.

Fourth—That we express the thanks of the association to its members and others who have attended this meeting, and helped to make it a success.

Fifth—That we especially extend our thanks and appreciation to Mr. C. A. Reed of the Department of Agriculture at Washington, D. C., and to Col. C. K. Sober, for their excellent lectures and special work in behalf of this association at this meeting.

Sixth—That we express our most sincere thanks and appreciation to J. F. Wilkinson, for his courteous treatment and entertainment of this association at his home.

Seventh—Be it further *resolved*, that we especially thank each and every individual member of this association, for their attendance at this meeting, and for their earnest efforts and interest in behalf of the same, in helping to make this meeting a success in every way, and making it the most enthusiastic meeting that has ever been held by this association, and we thank any and all members for any special work or research that has been carried on by said member in behalf of this association, as disclosed by this meeting.

Eighth—Resolved, That we extend to Mr. W. C. Reed our sincere thanks for his kind invitation to the members of the association to be his guests at his home in Vincennes, Indiana, on Saturday, August 22d, 1914.

Signed.

W. O. POTTER,
H. R. WEBER,
J. RUSSELL SMITH.

THE PRESIDENT: If there are no objections, the report of the committee on resolutions will be adopted. It is so ordered. The next thing on the program will be the lecture and lantern slides by Mr. C. A. Reed.

Meeting called to order at Enterprise, on Friday, August 21, at 10:30 A. M.

THE PRESIDENT: I want the records to show that this meeting convened in Enterprise, Luce Township, Spencer County, Indiana, where the members of the Northern Nut Growers Association visited and studied the native Ohio River pecan trees, and I want to hear the opinions of the different visitors. The state entomologist, Mr. Baldwin, will please express himself upon the native pecan trees on the Ohio River.

MR. BALDWIN: My remarks will be so brief it will not be necessary for me to go forward. I don't know that it is necessary for me to mention the fact that I have never lived in and very seldom visited, localities where pecans grow in this state and cannot, therefore, express an authoritative opinion as to the merits and demerits of the pecan trees in this section. It is noticeable that the trees are more free from insects and fungus trouble than trees in many places. Mr. Simpson, who has had considerable experience in the South, called my attention to a very destructive pest that does not exist here in numbers sufficient to be destructive, as it is in Florida, but he is of the opinion that it was introduced into that section from this section.

[Pg 80]

MR. PRESIDENT: What is it?

MR. BALDWIN: Mr. Simpson says—I didn't see any of the insects, and probably you couldn't identify it without labor,—but Mr. Simpson says there are two broods and the second brood is now at work. This certainly is a good field for work for the entomologist. Of course the same thing would hold true with this insect that is true of others; when a new species is introduced into a country where it has not heretofore existed, where the natural parasites are not found, it is more destructive than where the natural parasites exist. That point is illustrated very well by the moths that are so very destructive in New England, and don't do very much damage in the countries from which they come. From my observations on other native nut trees I was greatly impressed with the abundance of nuts that some of the native trees bear here. I am sorry I am not able to talk about something that would be more interesting to those interested in pecans and other nuts.

THE CHAIRMAN: I should be glad to have our secretary put in the record a few of his observations.

DR. DEMING: Mr. Littlepage has been talking to us about these pecans since we started this organization, and has long promised to show us these trees. We can't get any idea of such trees without seeing them. We have had many word pictures of them but I had not been able to form any idea of how great they are. They have a beautiful outline as we see it silhouetted against the sky, and every evidence of being trees that bear lots of nuts, which is the kind of trees we are all looking for. We don't have the pecan tree in the North as a native at all. There are a few in New England, a few scattered here and there, but none bearing. I have heard of a pecan not far from my home, possibly twenty-five miles, that does not bear. I have seen in the city of Hartford a pecan tree that was nine feet and three inches in circumference and ninety feet high, of unknown origin, but not bearing. The nut tree that grows best through our part of the country is the shagbark hickory. It is very much like the pecan tree here, but never grows to anything like its

size, is not nearly so beautiful a tree and I don't believe it bears as heavily. I think the average hickory nuts there are very much inferior to the average pecan here. We also haven't the black walnut there as a native. That is I have never seen it native though it probably was originally so in parts of the country. However, when planted it grows to a very large size, and makes a magnificent tree. About ten miles from my house is the largest in the state. We have lots of butternuts over the country but no nut tree that compares in beauty and usefulness with the pecan here.

[Pg 81]

THE PRESIDENT: Dr. Smith should be able to size up the situation and give us some of his impressions. I want to get them in the record.

DR. SMITH: Gentlemen, I don't see how anybody can live by these trees here and not realize that they are a source of fortune. I can't understand how men can look at them every year, gather and sell the nuts and not realize that they are a source of livelihood. I just measured a big tree in a tobacco field down the road that was thirteen feet and eleven inches in circumference, that had a sixty foot reach, and was about one hundred and twenty-five feet high. We measured another, that had a sixty-six foot reach and they were all bending down with fruit. It was marvelous and they were certainly giving us their evidence that the thing for us to do is to go ahead and reproduce them.

THE PRESIDENT: Dr. Van Duzee, tell us your impressions of these trees.

COL. VAN DUZEE: Mr. Chairman, I simply will add this. As I came through this wonderfully fertile section of the country, I observed people building bungalows and cottages and setting out trees other than pecan in their dooryards. That is the pity of it. As Dr. Smith says these people here are living close to some of the most magnificent natural trees I have ever seen, and yet they will go and plant around their gardens trees that will do nothing in the world but produce shade. It seems to me there is room for the best kind of missionary work here. I am glad the nut growers met here and I hope the effect will be to cause people to think. As we came down the road we estimated that on one tree there were four or five hundred pounds of nuts. The owner of that tree didn't study the soil that produced that magnificent crop. Our driver said they had had two years of failure in their farming operations and yet right here in the same place nature has handed them another magnificent crop. I have an idea that the average annual value per acre of crops on the farms of southern Indiana and Illinois will run in the neighborhood of a ten dollar bill, and here is a tree, one tree, presenting thirty dollars. I have no doubt in the world that there will be fifty or sixty dollars' worth of nuts on this tree up here, and it doesn't occupy a quarter of an acre of land.

[Pg 82]

I want to speak about the insects. I don't believe you need to worry about these unless the planting goes away beyond what I think it will in this section. Here is the proof, right here in this river bottom in the nuts we see on these trees and the growth of the trees. They are thrifty, not mutilated by insects or dying. They are at home and the conditions are absolutely favorable. I have been very much pleased and very glad I came, and if I were not thoroughly tied up in a section I think is more adapted to nut growing, I should come up here and undertake to do something in this section, for I see great possibilities.

THE PRESIDENT: That is an opinion that is of real value. Now I will call for volunteers. Those of you who have been sight seeing here and have impressions and ideas you would like to express we should be glad to hear from.

PROFESSOR CLOSE: One thought that has interested me is this. If we should take away from this neighborhood about half a dozen men this great industry would be forgotten. It is to these men who have done this kind of work that we owe a great deal. They are engaged in a wonderful work. I presume they realize how great it is. It means the developing of an industry that will grow in the United States and could be carried to other countries. These great trees are a wonder, no question about it, and the fact that here is a new industry being pushed by half a dozen men is still more wonderful.

THE PRESIDENT: If this section of the country had been planted to seedling pecans it would have made every man who owned forty acres of it, comfortable. We have with us Mr. Dodd, who is one of the old residents of this neighborhood. He can tell us some interesting things. He was here long before I came and looks at present as if he might be here many years yet. We certainly hope he will be. If it were not for him we would not know that Enterprise is on the map. He reports for the county paper and keeps the world in touch with Enterprise. I should like to hear him tell about the old pecan trees when he first knew them, and I want what he knows about them to go into the record.

MR. DODD: Mr. President, and Ladies and Gentlemen: I'm no speech maker, never made one in my life, but I guess I know something about the pecan business. These trees were here when I came and that was in 1852. Those big trees that you looked at were big trees then, and must have been fifty years old, I judge, from what I have learned from older people. So you see they have been there a long time. I have a piece of ground here and if I had known as much about the pecan business then as I do now I would have had every foot of my land in pecans. I make a right smart little money in pecans as it is. Littlepage knows that. I have shipped pecans to him off my trees, shipped them to him many times. They are no better than the others, but we are old friends and he wanted me to send them to him and I did. I don't know anything about the pecan business in a general way, as to what they will produce or how much money they will average, but I think we have slept on our rights in this country for seventy-five years. If that is any good to you, you are

[Pg 83]

welcome to it, and we are glad you are here today.

MR. POMEROY: One tree out in the back here looks as if it might be fifteen or sixteen years old and it is bearing well. It is a large tree well filled with nuts, notwithstanding the fact that lightning has struck it twice and destroyed at least two years' crops. It seems to me there are thousands of dollars to be made in an investment in nut trees here where they do so well.

THE PRESIDENT: Now has any one else any observations to make? Mr. Weber.

MR. WEBER: Out here you remember you showed us quite a number of seedlings growing in a corn field like milkweeds, growing right alongside of them, and one of us thought the milkweeds were the pecans, as they looked much the same. It seems to be hard to keep them down.

THE PRESIDENT: That reminds me that when this organization was formed I had the honor of being the first man on the ground. Dr. Deming called the meeting to order, Dr. Morris was there and so was Professor Craig, who has since passed to the great beyond, and a number of others, and I remember telling the bunch who were there at that time, that if I ever had the opportunity I would take them into a country where the pecans really grew. I have attempted to make good. If there remains any doubt in your minds we will proceed to lose you in the great Green River pecan woods, and if you are not pretty well stocked with provisions, you may never get out. I told Professor Close who is making a study of the pawpaw for the Department of Agriculture, that we also grew pawpaws in southern Indiana and that I would show him some large trees. So he came down with us and we went to Boonville and got in Senator Hemenway's automobile and I introduced him to a pawpaw tree six feet and a half in circumference at the ground, five foot in circumference three feet from the ground. So the chair takes some pleasure in having been able to show the things that were promised. Let us hear from Mr. Riehl.

[Pg 84]

MR. RIEHL: I think you folks are very unfair to me. You have said everything I wanted to say before you called on me and I really don't know what else I can say. I had in mind what Professor Smith has been saying to me, and what some of you people have already said, that it is time for you people here to wake up. You don't know what you have got. You are like people in many other sections of the country, they don't appreciate what they have at their very doorways. If I were a young man, I would come here and plant pecan and walnut trees, but I am too old now to make such changes. In a few years you may remember what I have said. The walnuts are as profitable as anything else, and much more so than any farm crop you can grow. Nothing will produce as much value and with as little trouble as nut trees. I am convinced of that.

PROFESSOR SMITH: If they would follow your suggestions they would soon have another Garden of Eden.

THE PRESIDENT: Professor Smith has reminded us that the crops in the Garden of Eden were purely tree crops, and they grew without effort. But after the fall Adam and Eve had to go out and cultivate the soil and raise corn. Probably in that garden they had pecans and walnuts. I believe that is his theory and it may be good.

PROFESSOR SMITH: O, beg your pardon, that is in the book of Genesis. The text describes nothing whatever except trees, and then Adam fell and had to dig in the ground and make his bread by the sweat of his face.

MR. POTTER: Is the tree of knowledge the pecan tree?

THE PRESIDENT: I don't know. Can any one else say?

PROFESSOR SMITH: My remarks on the Garden of Eden were brought out by what our President said, but I have published others that are not very lengthy and you can buy them.

THE PRESIDENT: Let's hear from Mr. Lockwood.

MR. LOCKWOOD: Dr. Knapp wants me to expose my ignorance and tell you the crimes I committed and intended to commit. It was about three years ago that we purchased a little over a thousand acres in Gibson County, near Grayville, and about three hundred and fifty acres of it were in timber. We decided to clear up as rapidly as possible all the forest land and cultivate it in corn. Now comes the crime which Dr. Knapp wants me to expose and I am going to confess it. We deadened probably a hundred of as fine pecan trees as you ever saw, from six to eighteen inches in diameter, and Dr. Knapp heard about it and visited our farm, and it was on his account principally that we quit cutting the pecan trees. Now if anybody else cuts them we have them arrested. We have the second best orchard in Gibson County. I have joined the association and came here to get a line on you and I have got a good many good things by coming. I would like to have you visit our farms. We have some very fine trees to see and I will also give you something to eat, because I am the chief cook. I want to emphasize the remark one member made that it is a great work these men are doing. You get that impression when you come to the meeting, and it shows great sacrifice and love for their fellow men.

[Pg 85]

THE PRESIDENT: That is very good, Mr. Lockwood. Now Dr. Knapp will tell us what he thinks.

DR. KNAPP: I know very little about pecans but I was interested in Mr. Lockwood's trees because he had a magnificent pecan orchard, possibly five hundred trees, and they were contemplating having the trees cut down because they thought they were in the way of the cultivation of the land for corn. This is not the case because the pecan tree goes away down deep for water and is not like the surface root trees. I have seen large wheat fields in the same location with large

pecan trees in them, and men have told me that they produce just as much per acre on the land where the pecan trees are as where there are no pecan trees. I went to see Mr. Lockwood and took him what little literature I had on the pecan industry and promised to send him some more, and insisted that he read it before he destroyed his trees. He kept his promise and I am glad to see that he has taken an interest in the pecan industry.

THE CHAIRMAN: You are a real benefactor, Dr. Knapp, and entitled to great praise.

PROFESSOR SMITH: While we are distributing things gratis I want to make a little statement in the same vein as a previous speaker. He points out the work that a few enthusiasts are doing. Most of the things worth while are done by the people who never get any credit in a financial way. You will find the things that count are started and done by that live force of men that work for the fun of working with no promise of reward. Why should Mr. McCoy or Mr. Reed come down here and tell us how to bud trees, and what varieties to use? It is plainly a labor of enthusiasm and love. I want to express my particular appreciation of the work done by Mr. Thomas P. Littlepage. We hear from Indiana through Mr. Littlepage. On every occasion when we get in trouble and want bud wood, along he comes and helps us out. He seems to have all kinds of equipment for keeping it or he can always go to a pecan tree and get it. We never hear of the trouble or expense. He spends money as if he had a barrel of it. He has spent lots of money trying to get the people to know there was an Indiana pecan. We also know that Mr. McCoy and Mr. Wilkinson and others too numerous to mention have lost thousands of dollars and have worked long and hard to get this industry started. The industry needs enthusiasm and no end of work. It means work to get out and hunt trees and bud wood and these men are entitled to lots of credit for their efforts.

[Pg 86]

THE PRESIDENT: The chair appreciates that compliment but he is hardly entitled to so much praise. However, all the efforts we have made to create interest in the pecan have been well spent. We have had lots of trouble in getting bud wood and if it had not been for Ford Wilkinson we never would have gotten anywhere. He is the best climber in the country. He has gone at all times and under all conditions and has done more real hard work than all the rest of us put together. He always climbs the trees. The Major tree is about fifty feet to the first limb. We couldn't have gotten along without him. And Mr. McCoy is entitled to great credit. The first time I ever saw the Posey nut Mr. McCoy brought some to my home in Boonville. That was a number of years ago. He first stimulated Mr. Brown to put the Warrick pecan on exhibition. As I grew up I knew where these pecan trees were and who kept a dog and what time he got up and there were not many pecan trees then I would not attempt to climb, but I wasn't as large as I am now. Of late years Mr. Wilkinson has done more than I have along that line.

MR WILKINSON: I appreciate what you say of me but it takes all kinds of people to make a world and to grow pecan trees. I have tried to do my part but without the others I couldn't have done anything. We expect to continue at the work as long as there is any success in sight at all and hope soon that some of the hard part will be over.

THE PRESIDENT: Before we leave that subject I want to say that a few years ago some of us who had begun to think we knew something about the pecan and were quite sure of our ground, induced Mr. C. A. Reed of the Department of Agriculture to come down here and make some trips through these woods and tell us what he knew, or what he thought of these pecans. We gave him all the facts we could, and the suggestions he made started us on the right track as to the varieties to propagate.

[Pg 87]

THE PRESIDENT: The boat is ready, but before we go I want the report on nominations. I want the officers elected in Enterprise.

DR. DEMING: I would like to say this before we proceed to the election of officers. There has been some talk among us that it would stimulate interest in our work and meetings, and would enable us to confer honors on more people, and more members who deserve such honors, if the term of the presidency were limited to one year. There has been no rule about it but our first two presidents have each held office two years. They have been re-elected to office as a matter of courtesy and appreciation of their efforts. If from now on we limit the term of the presidency to one year I think it would be better. We think it would be desirable to make the rule that the President shall not be eligible for immediate re-election, that is, he shall not follow himself. I mention it so that if this rule is adopted in the revision of our constitution and by-laws the person who is about to be elected President, and the members of the association, will understand that there will be nothing personal about such action.

THE PRESIDENT: In connection with that I should like to say that the present President has at different times heard suggestions of that kind made, and I am glad you mentioned it. I wasn't fortunate enough last year to be at the meeting, as I had to be in St. Louis to help try a case before the interstate commerce commission, or I should have brought that up then.

Dr. Morris is absent and Professor Close is the next on the committee on nominations. Professor Close, will you report?

PROFESSOR CLOSE: I did not know I was the next member and Dr. Morris did not leave any data with me. However we discussed it and decided to recommend the election of J. Russell Smith for President, Mr. W. C. Reed for Vice-President and Dr. Deming for Secretary and Treasurer.

THE PRESIDENT: Any remarks on the report of the nominating committee? If not, those in favor of adopting the report, thereby declaring the officers named elected, make it known by rising. (Vote taken.) Contrary by the same sign. Your officers for the next year will be Dr. J. Russell Smith,

President, W. C. Reed, Vice-President, and Dr. W. C. Deming, Secretary and Treasurer. I congratulate the association.

Meeting adjourned.

[Pg 88]

Meeting called to order at 8:30 p. m., at Evansville, Indiana.

PROFESSOR SMITH: The members of this association have always got to be on the lookout for good parent trees of any and all varieties of nuts. I think, however, there is a shortage of information in the matter of walnuts. I have talked to a number of persons and it is the general opinion that we want to know, and know quickly, more about parent trees of the Persian walnut. I therefore move that the chair appoint a committee to give this matter particular attention during the next twelve months and report at the next annual meeting.

(Seconded and carried)

THE PRESIDENT: The chair appoints the incoming President, C. P. Close and C. A. Reed.

The next is the question about the place of the next meeting. It occurs to the chair that it might be desirable to leave that to the executive committee. But that is a matter for the association to decide and the chair will entertain motions or suggestions.

MR. C. A. REED: I was going to move that it be left to the committee. I know from past experiences that is the best course to pursue.

(Seconded and carried.)

COLONEL VAN DUZEE: I would like very much to extend a cordial invitation to the members of this association to meet with the National Association at Thomasville, Georgia, in October. We have a program full of merit. Our meeting will be held in the heart of the nut planting area where all the pecan planting has been done in the last few years. We have several fine orchards in the immediate vicinity and matters of general interest will be discussed. We would be glad to have anybody that can meet with us, and if you have friends interested in nut culture we will be glad to have them.

THE PRESIDENT: It is unnecessary to say that the South has forged ahead of us in pecan culture, and she not only has great pecan orchards but she has great men who have done this work and they will be at the meeting of the National Nut Growers. I have had the pleasure of attending some of these meetings and I can say to the members here it will be well worth their while to go down there.

Is there any further business? If not we will have Colonel Sober's paper, after which the pictures will follow.

PROFESSOR SMITH: I am sure after hearing Colonel Sober's lecture, and seeing his pictures, we will want to ask him some questions. I know that Colonel Sober has worked out an unique method in the root system, and I wish he would tell us about it.

[Pg 89]

COLONEL SOBER: The slides I have will show that.

THE PRESIDENT: Is there anything else?

MR. DOAN: How does Colonel Sober take care of the blight?

COLONEL SOBER: In answer to that I will say that in 1909 I discovered the blight on some trees, just a speck, and I took my knife and cut it off. That is my best method and then you are sure of it.

THE PRESIDENT: Are there any further questions?

MR. DOAN: Are all his trees Paragon?

THE PRESIDENT: I think they are. The Secretary will read Colonel Sober's paper.

The Secretary here read extracts from the preface and introduction to Fuller's book on nut culture, prepared by Col. C. K. Sober, with personal interpellations, as follows:

I believe that the moment is opportune for advocating an effort to cultivate all kinds of edible and otherwise useful nut-bearing trees and shrubs adapted to the soil and climate of the United States, thereby inaugurating a great, permanent and far-reaching industry. We are spending millions for imported articles of everyday use which might easily and with large profit be produced at home, and in many instances the most humiliating part of the transaction is that we send our money to people who do not purchase any of our productions and almost ignore us in commercial matters. I am not referring to products ill-adapted to our climate, nor to those which,

owing to scarcity and high price of labor, we are unable to produce profitably, but to such nuts as the walnut, hickory, butternut, pecan and chestnut which we can raise as readily as peaches, apples and pears. There certainly can be no excuse for the neglect of such nut trees on the score of cost of labor in propagation and planting, because our streets and highways are lined and shaded with equally expensive kinds, although they are absolutely worthless for any other purpose than shade or shelter, yielding nothing in the way of food for either man or beast. Can any one invent a reasonable excuse for planting miles and miles of roadside trees of such kinds as elm, maple, ash, willow, cottonwood and many other similar kinds, where shellbark hickory, walnut, butternut, pecan and chestnut would thrive just as well, cost no more, and yet yield bushels of delicious and highly prized nuts, and this annually or in alternate years, continuing, and increasing in productiveness for one, two or more centuries. The nut trees which grow to a large size are just as well adapted for planting along roadsides, in the open country, as other kinds that yield nothing in the way of food for either man or beast. They are also fully as beautiful in form and foliage, and in many instances far superior to the kinds often selected for such purposes.

[Pg 90]

The only objection I have heard of as being urged against planting fruit and nut trees along the highway is that they tempt boys and girls as well as persons of larger growth to become trespassers. I find this only applies to where there is such a scarcity that the quantity taken perceptibly lessens the total crop. But where there is an abundance either the temptation to trespass disappears or I fail to recognize the loss. As we cannot very well dispense with the small boy and his sister I am in favor of providing them bountifully with all the good things that climate and circumstance will afford.

On my farms in Irish Valley, Northumberland County, Pa., I have planted a Paragon chestnut tree every forty feet along the public highways and driveways making a total of 769 trees. These trees range in age from four to ten years old.

A mile in this country is 5,280 feet, and if chestnut trees are set forty feet apart, which is allowing sufficient room for them to grow during an ordinary lifetime, we get 133 trees per mile in a single row. Two rows may be planted, where the roads are wide enough, one on each side, and then we get 266 trees per mile. I can estimate the crop when the chestnut trees are twenty years old at two bushels per tree, or 532 bushels for a double row per mile. At the moderate price of \$4 per bushel, we would realize \$2,128 for the crop on a double row, with a fair assurance that the yield would increase steadily for the next hundred years or more, while the cost of gathering and marketing the nuts is no greater, and in many instances much less, than that of the ordinary grain crops. At the expiration of the first half century one half of the trees may be removed, if they begin to crowd, and the timber used for whatever purpose it may best be adapted. The remaining trees would probably improve, on account of having more room for development.

The chestnut thrives best in light, well drained soil, and those containing a large proportion of sand or decomposed quartz, slate and gravel; but it is rarely found, nor does it thrive very well, in heavy clays or limestone soil where the limestone rock comes near the surface. It is true that chestnut groves, and sometimes extensive forests, are found on hills and ridges overlying limestone, but a careful examination of the soil among the trees will show that it is a drift deposit containing little or no lime. I find in Pennsylvania the chestnut tree grows from the banks of the Susquehanna River to the tops of the mountains.

[Pg 91]

In planting the chestnut tree it should never be planted any deeper than it was in the nursery rows. If planted any deeper it is certain death to the tree, as I find that the earth placed around the trees above where it was in the nursery rows scalds and destroys the tree. Here is where the great mistake is made in planting out the chestnut tree, and this I have found out by practical experience. It is far better to plant it one inch less than it was in the nursery than to plant it an inch deeper.

There has been a steady increase in the demand for, and a corresponding advance in the price of all kinds of edible nuts during the past three or four decades, and this is likely to continue for many years to come, because consumers are increasing far more rapidly than producers. Besides, the forests, which have long been the only source of supply of the native kinds, are rapidly disappearing, while there has not been, as yet, any special effort to make good the loss by replanting or otherwise. The dealers in such articles in our larger cities assure me that the demand for our best kinds of edible nuts is far in excess of the supply, and yet not one housewife or cook in a thousand in this country has ever attempted to use nuts of any kind in the preparation of meats and other dishes for the table, as is so generally practiced in European and Oriental countries.

The question may be asked if the demand is sufficient to warrant the planting of the hardy nut trees extensively along our highways or elsewhere. In answer to such a question it may be said that we not only consume all of the edible nuts raised in this country, but import millions of pounds annually of the very kinds which thrive here as well as in any other part of the world.

Where farmers want a row of trees along the roadside, to be utilized for line fence posts, they cannot possibly find any kinds better adapted for this purpose than chestnut, walnut, hickory and pecan. In a few years they may yield enough to pay the taxes on the entire farm, the crop increasing in amount and value not only during the lifetime of the planter, but that of many generations of his descendants.

This appeal to the good sense of our rural population is made in all sincerity and with the hope

that it will be heeded by every man who has a spark of patriotism in his soul, and who dares show it in his labors by setting up a few milestones in the form of nut-bearing trees along the roadsides —if for no other purpose than the present pleasure of anticipating the gratification such monuments will afford the many who are certain to pass along these highways years hence.

[Pg 92]

It is surely not good policy to enrich other nations at the expense of our own people, as we are now doing in sending millions of dollars annually to foreign countries in payment for such luxuries as edible nuts that could be readily and profitably produced at home. There need be no fear of an overproduction of such things, no matter how many may engage in their cultivation.^[A]

[A] Note by the secretary: At the time when Fuller wrote his excellent book, the chestnut blight, as at present known, had not been observed, although he makes an interesting reference to some disease of the chestnut, of unknown nature, at one time destructive to the trees in the Piedmont region. The Northern Nut Growers Association does not recommend the planting of the chestnut in any region where the chestnut blight, *Endothia parasitica*, is prevalent. With this exception the association is heartily in sympathy with the sentiments expressed by the writer.

COLONEL VAN DUZEE: I have no questions to ask, but as I am going to be obliged to leave the session before the close of the lecture, I should like to express my appreciation of the paper which has been read and make a remark or two. I am so heartily in sympathy, in this commercial age, with some of the thoughts expressed there, that it is a pleasure to listen to a paper which takes into consideration something a little beyond, and the idea of planting trees by the roadside for the benefit of humanity, is of too much importance to be overlooked. I could go on at great length along this line, but as I have not time I just wanted to express my appreciation before I have to go.

THE PRESIDENT: Has anyone else any suggestions or any general business?

THE SECRETARY: There has been no discussion at all of the filbert, I think. That is a nut that is possibly going to be of great importance in the future. I think it was Mr. Doan who asked me about the filbert and there might be someone here who could give us some information about its possibilities. Perhaps Mr. Reed could tell us something about it.

[Pg 93]

[Pg 94]



C. A. REED

In charge of Nut Culture Investigations,
United States Department of Agriculture

MR. C. A. REED: Well, I am glad the subject has been brought up but I would rather listen than try to talk. As Mr. Littlepage made clear in his paper yesterday, there has been considerable effort in the eastern states towards the introduction of the filbert, but almost uniformly such attempts have met with failure. About two weeks ago some of us visited Dr. Morris's place and while there we were shown some large European filberts, ten to twelve feet high, bearing heavily. These were not suffering from the effects of the blight at all so far as we could see, and they were right in the district where the native northern filbert is one of the most common of the wild plants. It was quite a revelation to me to see the native filbert or hazels bearing so heavily. Everywhere we went we saw low bushy hazels not over two feet from the ground loaded with immature nuts. I

[Pg 95]

thought there was an opportunity for some nut enthusiast to canvass that territory, and find the best individual plants for propagation. The filbert, it seems to me, offers an unusually inviting field, and unless I am greatly mistaken there is a great field for exploration. Dr. Deming lives in that same section, and he tells us that on his farm the hazels are even more common than at Dr. Morris's place. Dr. Morris agrees with us that there is a fine opportunity for searching for the best varieties. He has done it and has found, I believe, one which he thinks is especially fine. I would be glad to hear from any one else about these nuts.

MR. RIEHL: Mr. President, I have made a little observation of the European and I don't think it will count for very much. I know of trees that were planted in one of our experiment stations. I last saw them three or four years ago and they were twelve or fifteen feet high and bearing very heavy crops. I saw no disease of any kind but it was in the city of Alton and I don't suppose there is a native hazel within miles of it. That may be why they were bearing so well and were exempt from disease. I haven't seen those trees for the last four years and what has happened to them I don't know. I intend to go and see what has become of them.

THE PRESIDENT: Mr. Doan, what is your especial interest in the hazel?

MR. DOAN: I think it offers great possibilities. The different species that we have tried show that. The fact that it grows freely, even though certain branches of it have the blight, which does not at once destroy the whole bush, and the fact that it bears freely and abundantly, I think are points in its favor. A great many persons couldn't wait eight or ten years for a nut tree to bear but could wait a much shorter time. I think this is one good point in favor of the hazels.

THE PRESIDENT: There is no doubt that the hazel offers a very excellent opportunity for study and investigation. There are many varieties of the native hazel that are very fine and it seems to me that therein lies a field of work for this association. There is no information to the productive nut grower of more value than the facts as to what these nuts will do, how they can be produced, how quickly they bear, and what they are worth. We have very little reliable information about the English walnut. When we listened to Mr. Reed last night we were forced to the conclusion that as yet we know nothing about it. There are a few apparently promising English walnut trees throughout the North but there are many things to be taken into consideration before you can recommend those for propagation. It seems to me the hazel offers a field of considerable importance. Has any one else any suggestions to offer?

[Pg 96]

MR. POTTER: This hazel proposition interests almost every member of the association. It seems to me as if we might get at something more definite and instructive and I move that the chair appoint a special committee to investigate the hazel, and report at the next meeting.

A MEMBER: I second the motion.

THE CHAIRMAN: It has been moved and seconded that the chair appoint a committee of three to investigate the hazel or filbert, and report at the next meeting. Are you ready for the question?

MR. RIEHL: I hardly think that will do any good. I believe there is a field where good work can be done but I doubt whether the chair or any one else is able to appoint a committee that can find out much that will be of value between now and our next annual meeting. There are so few superior hazels. I tried for many years to find a native hazel that is worthy of planting. I have heard of some but have been unable to get them. I heard of one and had it promised to me but he has forgotten it, I guess, and I never got it. I know of another that is said to be very good, but the man that has it won't let anybody have it unless he gets five hundred dollars, and there is no man willing to pay that on his say-so that it is a good thing. So we have got nothing to go on for such a committee to make a report on. A much better plan would be for this association to offer a prize of a certain sum of money to any one who will report a superior hazel. Let that get in the papers and be talked of so the boys and girls will hear of it and they will contend for the twenty-five or fifty dollars. There are no doubt such fine hazels but the trouble is to find them. I think the best way would be to offer a reward and let them be brought to us. In that way we can accomplish something, but to appoint a committee when we have nothing to go on will do no good.

THE PRESIDENT: There is a great deal in the suggestions of Mr. Riehl. It has been noticed by all of us in nut culture that the individual opinion of the man who has seen only his tree or bush is perhaps not worth much. That is why the data we have on the walnut is unsatisfactory. So much of it comes from the man who has seen only his tree, and does not know what a first class bearing tree is like. The same difficulty would arise, to some extent, in your suggestion, Mr. Riehl, as to offering the prize. That is perhaps one of the best methods to stimulate interest but there is this difficulty in the way, that the nuts must be gathered, and the tree be investigated before it could be properly authenticated. I have had people tell me they have seen pecans from certain trees, that long (measuring on finger). There never was a pecan grew in the world that long. The question before the house is the appointment of this committee. Is there any further discussion? If not those in favor of it make it known by rising. (Two.) Those opposed make it known by rising. (Seven.) The motion is lost. Is there any further business? If not we will stand adjourned *sine die*.

[Pg 97]

[Pg 98]

[Pg 99]

APPENDIX

THE HISTORY OF THE PERSIAN WALNUT IN PENNSYLVANIA

J. G. RUSH, WEST WILLOW, PENNSYLVANIA

The history of the Persian walnut in Pennsylvania goes back several hundred years. Seed nuts only were brought here by the early German settlers, as steam navigation was unknown at that period. From this mixture of seed from Europe, we have at this time a few varieties worthy of favorable mention. In this connection I will give you my brief history or experiences and observation for the last twenty-nine years.

In 1886 I bought two seedling trees from a local nursery regardless of name or variety at thirty-five cents each. These two trees received equal treatment in culture for ten years, when the so-called Rush tree produced two bushels of fine developed nuts. The other tree about forty feet away has not produced two bushels from the time it was planted to the present date.

The productiveness of the Rush induced me to think, and to investigate the great difference in these two trees. I finally found the Rush to be a simultaneous bloomer whereas the other was just the reverse.

Being a member of the State Horticultural Association I exhibited these nuts from time to time when finally other members became interested in nut culture. Mr. John Engle of the Marietta Nurseries advised me to plant seed from this particular tree and raise seedling trees for sale. I finally did on a small scale only. But I soon found in the young seedlings a taint of black walnut blood, which discouraged me for a further continuance. Later I had correspondence with J. F. Jones, then of Monticello, Fla., who had specialized in the propagation of all nut trees. In 1903 scions were sent to him, and returned as budded trees in 1905, and are now a living monument to the memory of the first propagator of the Rush variety.

The Pennsylvania state nursery inspector first called my attention to the Hall variety in Erie County, Pa., after which a lively correspondence followed and sample nuts were exchanged. In 1910 Mr. J. F. Jones and myself were to see this tree, in order to get its life history. It was said by Mr. Hall that the tree was planted by the early German settlers about forty years ago. The Hall variety is very catchy to the eye on account of its large size. Through the kindness of Mr. Hall we were allowed to cut a few buds, which are bearing trees now at West Willow.

[Pg 100]

The Holden came first to my attention about four years ago in the New York State Horticultural Association Report, after which a lively correspondence opened and sample nuts with the Rush were exchanged which finally led to the propagation of this prospective variety.

The Nebo is a variety the history of which I traced back to about seventy-five years ago. It was planted by an English iron-master by the name of McCreary. It is said that he gave lodging to a tree agent, whereupon he received this tree as compensation.

The Burlington from Burlington, N. J., is of the Alpine type, and is of great size.

The Lancaster was first called to my attention a year ago. It is said the tree, not the seed, was brought from Germany. This variety is worthy of extensive cultivation, is however also of the Alpine type and very prolific.

In connection with the varieties just mentioned we have also the French varieties, such as the Mayette, Franquette, Cutleaf, Alpine and Parisienne. The French varieties are not tried out in respect to their dependability for the Atlantic coast. They however show hardiness equal to any other variety grown in Pennsylvania.

As regards the late vegetating habit of some Of these varieties enabling them to escape late spring frosts, I see no advantage whatever, as Jack Frost is a privileged character and makes his appearance regardless of time or place.

With the limited efforts I have made thus far in the dissemination of the Persian walnut, I am absolutely confident that the work has just commenced. There will yet be varieties discovered which will compare favorably and may surpass those we have already listed. The best territory to work in I find is the German settlements. They always were noted for their seed distributions in the early history of Pennsylvania. In justice to these frugal people, the Persian walnut should be called The Dutch nut. But the English were the great importers of these nuts and hence the name English walnut. The Germans today as they visit their Fatherland invariably bring a few nuts or trees with them, which keeps up the supply. Of course not all these seedling trees are true to the variety desired. But they say they come from the Homeland, which gives them great contentment.

[Pg 101]

In the dissemination of these interesting nut-bearing trees I am safe in saying I have visited hundreds of them and mostly single trees of very little importance. The principal complaint is that when the nuts are as large as grapes they drop off from some unknown cause. This is all for the want of proper cross pollenization. The public in general is now getting educated to the importance of planting grafted or budded varieties of known merit, which is attested by the large plantings of the last several years.

My limited experience with grafting large nut trees is that it is not practicable, from the fact that the lower limbs outgrow the grafted ones and eventually smother them and cause them to die out, leaving the tree in a disfigured condition. The better way is to plant several trees of a good pollenizing variety near one another to get best results in bearing.

In this brief history of the nut industry of Pennsylvania and adjacent states, I have said nothing in regard to propagation and culture, knowing that some one else will take up that subject in detail.

Horace Greeley in his prime of life said: "Young man, go west."

The Northern Nut Growers Association says: "Young man, plant a nut tree."

[Pg 102]

A COMPARISON OF NORTHERN AND SOUTHERN CONDITIONS IN THE PROPAGATION OF NUT TREES

J. F. JONES, LANCASTER, PA.

I shall not try to cover the whole subject of propagation or describe methods of budding and grafting, as these will be covered by others and we are to have demonstrations of budding and grafting, which are far ahead of any descriptions that can be given. I will try to compare conditions in the North and South and give some of my experience with the problems that have confronted us.

We have been able to get very satisfactory results with the pecan, either by budding or grafting, under northern conditions. With good scions and good stocks we have been able to get nearly, if not quite, as good results in Pennsylvania as we were able to get in Florida or Louisiana. The growth of the tree is also quite satisfactory. From dormant buds on good stocks we are able to get a growth of four to six feet the first year in the nursery and six to seven feet is not unusual. The growth is also quite stocky and altogether very satisfactory. Any of the methods of propagation as practiced on the pecan in the South are successful in the North, but budding by the patch method has given us the best results. Grafting is quite successful so far as the live or stand is concerned, but, on account of our shorter growing season, the growth is not nearly so satisfactory as that of the dormant bud which, being set the previous summer, is ready to start quickly into growth in the spring and gets the full benefit of our shorter growing season.

The shagbark hickory is essentially a northern tree and can only be propagated satisfactorily in the North. In Florida and Louisiana we could graft the shagbark on pecan stocks with fairly satisfactory results, so far as the live or stand was concerned, but the tree did not take kindly to the climate of the Gulf Coast and made little growth, a number dying out altogether the second and third years after being grafted. We have never gotten very satisfactory results from grafting the shagbark with scions taken from old, bearing trees, but with good scions from young thrifty trees, the shagbark may be grafted with fairly satisfactory results in the northern states. From the nature of the growth, it is not practical to bud the shagbark by the annular or patch bud methods as practiced so satisfactorily on the pecan, but last season (1913) in an experiment we got good results from ordinary shield budding by taking scions from a tree that had matured and ripened its growth up early and setting the buds on young, sappy growth of the pignut hickory, *Hicoria Glabra*. The scions from which those buds were taken were cut to test patch budding on the shagbark and when it was found that the growth had hardened and the bark would not peel, the buds were cut and inserted by ordinary shield budding, as practiced on the apple, peach, etc. This experiment was made with little or no hope of success, so that my surprise can well be imagined, when the wrapping was removed and it was found that every bud had united with the stocks! These buds have made better growth the present season than have the grafts set the past spring, as might be expected. This may be a freak and we may not be able to again duplicate the results, at least in more extensive practice, but I am inclined to think that we will, under similar conditions. The shagbark, without any manipulation, ripens and hardens up its growth early in the season and it would appear that these conditions could easily be duplicated, at least in average seasons. Young stocks of either the pecan or pignut hickory hold their sap much later than does the shagbark and are in good condition for budding after the shagbark is dormant. We have practiced this method on the chestnut for several years with very satisfactory results. The chestnut may be budded almost as easily as the apple or pear, and with nearly as good results, by ordinary shield budding, by taking scions for budding from an old bearing tree which has matured and ripened its growth up early and setting the buds on young, sappy seedling stocks growing under cultivation in the nursery. The paragon chestnut, especially, ripens its growth up very early when the tree is carrying a good crop of chestnuts, and there is a month, in average seasons, when buds may be taken from it and set on young stocks in the nursery. This condition might be brought about on younger trees from which buds are to be taken by withholding nitrogenous fertilizers and cultivation, or, if necessary, by root pruning. Root pruning should not be too severe as a sudden check on the growth in the growing season might interfere more or less with the storing up of "starch" or "dormant plant food" in the scion. Any condition or conditions that will serve to induce early maturing and ripening of the wood growth on trees from which buds are to be taken will be satisfactory, and by using nitrogenous fertilizers and liberal cultivation on the stocks to be budded, they may be kept in good condition of sap well into September in average seasons. Grafted at the proper time we were able to get good results without any manipulation of the seedling stocks. All that we ever did there was to remove the new growth occasionally to hold the stocks in good condition for grafting and prolong the grafting season, and it was always questionable whether this was a necessary precaution. My idea in keeping the new growth off the stocks till the grafts were set was not to control the sap flow, but to prevent, if it were possible by this means, the exhaustion of the stored up "starch" in

[Pg 103]

[Pg 104]

the stock, by the new growth. In the northern states, the sap in the walnut stocks, and perhaps to some extent in other nut tree stocks, is inclined to come up in the spring with a rush. Some seasons at least, even before the buds push into growth, when the stocks are cut off for grafting a large number "bleed" or run sap very freely and this may continue several days, flooding and injuring the scion, and exhausting the vitality of the stock. This condition was especially noticeable the past spring, due presumably, to the lateness of the growing season. Making provision for the exit of the surplus sap was usually sufficient in the lower south and, we believed, would be farther north, but with the stronger flow of sap this is not sufficient in the northern states, at least some seasons. An examination of grafts, set on stocks which have bled freely after having been grafted, shows that the stock callouses very slowly, if at all, and the scion, unless it be of very heavy, solid wood, becomes dark colored and sour and the wood soon dies in the cleft, although the scion above this point may remain green for weeks. I am not able, at this time, to give any specific remedy for the correction of this trouble for the reason that I have not worked it out to my own satisfaction as yet, but now that we understand the trouble better, I feel sure that we will be able to correct it in the manipulation of the stocks before they are grafted. Keeping the new growth off the stocks may be found to be sufficient in most seasons, if the grafting is done rather late, but I am of the opinion that a rather severe cutting back of the stocks a few days before they are grafted, if the grafting is done early, will be found the best practice. For later grafting, my opinion is that two or three cuttings, say a week apart, will be better. Root pruning, where it can be practiced to advantage, will be found more effective still. I have never known newly transplanted stocks or those which had the tree digger run under them, to bleed freely when grafted, and we have sometimes gotten a good stand of grafts on such stocks, but such stocks may not always have sufficient sap for the best results in grafting, if they have been recently transplanted or root pruned. Fall planted As a matter of experiment, I want to try budding both the pecan and walnut by this method the present season, but I don't expect any results from walnut buds set in this way. For the information of those who may wish to try this method the present season, I will say that we cut the shagbark buds a little heavier than we cut apple or pear buds. The wood was left in the bud. The bark on the stock was split and the buds inserted just as in any other shield budding. The buds were wrapped very firmly, with waxed muslin, just as we wrap patch buds.

[Pg 105]

Our success with grafting the English or Persian walnut, under northern conditions, has been variable and not very satisfactory. With good scions and good stocks and other favorable conditions, we have sometimes gotten over 90 per cent to grow, but the stand is more often much below this and the present season we did not average over 25 per cent. The fact that we get good stands of grafts when all conditions are right, is not only encouraging but demonstrates that the English walnut can be grafted under eastern or northern conditions with at least a fair degree of certainty as to results, just as soon as we learn the causes of our failures and are thus able to apply the remedy. Perhaps the greatest drawback to the successful grafting of the English walnut is the difficulty of obtaining good scions. The annual growth of the walnut is much more pithy than that of the pecan or shagbark, and for this reason, only a comparatively small portion of the growth is available for grafting purposes if we are able to select scions that will give the best results. Like the pecan and shagbark, the two-year wood makes the best scions for grafting, provided that the wood has good buds on it, but under our conditions those buds that lie dormant are usually shed off during the summer and few good buds remain that will start quickly into active growth. It is true that adventitious buds will often form where these buds have shed off, and these will push into growth if the stock is kept free from sprouts, but usually too late in the season to make good trees, and keeping the seedling stock free from sprouts when it should be in leafage is more or less weakening and injurious and the grafts, starting into growth late in the season, do not mature and ripen their growth up properly before frost and are quite likely to be injured by early November freezes, unless they have some protection. To graft the English walnut with unvarying and satisfactory results, under northern conditions, we must not only have good scions and good stocks, but we must control the sap flow in the stocks. In Florida and Louisiana the sap came up more gradually in the stocks in the spring, and when or root pruned stocks would probably give the best results, as the sap would probably come up more gradually in the spring and, while the flow would probably be sufficient for the best results, it would not flow freely enough to injure the scion or stock.

[Pg 106]

We have not experienced any serious difficulty from an extreme flow of sap in pecan stocks, either in the North or South, but we have had grafts set on the pignut hickory fail from this cause. The English walnut may be budded with fair to good results, by the patch method, by selecting good buds on the best matured, round growth, but to propagate the tree economically and satisfactorily it is desirable to both bud and graft, otherwise both stocks and scion wood are wasted.

[Pg 107]

TOP-WORKING LARGE WALNUT TREES

W. C. REED, VINCENNES, INDIANA

In top-working large native walnut trees to the Persian or English walnut, the first operation is to cut the trees back severely. This should be done while the trees are dormant, preferably in February or early in March. Cut them back two feet or more above where you wish to graft, then cut again to where you want them. This will avoid splitting. Usually we cut back to where the

limbs are from two to four inches in diameter. We have cut some back that were six to eight inches with good results. However, limbs this size require careful attention to avoid decay as it takes so long for them to heal over.

Scions for Grafting

Scions for grafting should be cut while perfectly dormant and packed in damp moss or sawdust, being careful not to have it too wet. Paper line the boxes and place in a cool place. Cold storage is much better. Scions cut during the winter and placed in cold storage will come out in good shape for grafting in May, or budding during July or August. Where there is danger of the wood being injured by cold weather it would be well to cut scions in November, before severe cold.

Time for Grafting

Wait until the new growth is well advanced or nearly in full leaf, which is about May 1 to 10, in this latitude.

Methods

Use either the wedge graft or the bark graft. We have had equally good results with each. If any difference it is in favor of the side or bark graft which we prefer because it does not split or mutilate the stock, there is not the chance for decay, and the wounds heal over much quicker. On limbs three to four inches in diameter put in three to four grafts.

Cut the stubs back one to two inches below where they were cut when dormant so you may have a fresh clean cut. Pare the rough bark off until you have a fairly smooth surface for three inches below where the limbs are cut off.

[Pg 108]

Side or Bark Grafting

For side or bark grafting split the bark with a sharp knife for about two inches where the graft is to be set. Cut your scions with about two buds. Slope the scion all from one side with a long slope so it will fit well to the wood or cambium layer; then trim off a little of the outer bark on the outside lower edge of the scion, just enough to expose the cambium so it will come in contact with the inner side of the bark on the tree.

Wedge Graft

If the wedge graft is used, take a long bladed knife (a corn knife will do) set it sloping on the cut off stock and make a clean cut through the bark first so it will split straight, then raise the handle of the knife and drive the blade into the wood, splitting it as deep as needed, depending on the size of the scion and insert a wooden wedge made from some hard wood. An old broom or hoe handle is good, tapering the wedge from both sides, leaving it thick in the center so it will come out easily after the graft is set by simply tapping lightly from first one side and then the other. In cutting the scion slope from each side with a long slope to fit the split in the stub. The outer edge of the scion should be somewhat thicker than the inner edge so that when the wedge is taken out it will be held firm. Be very careful to see that the cambium of the scion and tree meet on each edge of the scion. Pack all large cracks with tissue paper and wax thoroughly.

Waxing, Tying, Bagging

As soon as the grafts are set, cover the entire wound with grafting wax, being careful to cover the top of the stub well and the sides as far down as the bark is split, and the upper end of the scion. Then place a paper sack over the stub to prevent evaporation and leave this on until the scions start into growth. We do not use any tying material on large limbs because the bark is thick enough to hold the graft in place. However, on smaller trees it will be important to wrap the grafts well.

Grafting Wax

The best grafting wax we have found is composed of the following:

Four pounds resin, one pound beeswax, one-half pint linseed oil and one tablespoon of lampblack. Melt all together and apply with a paint brush, being careful not to have the wax too hot.

[Pg 109]

After Care

After new growth starts watch it closely every week or ten days and keep all suckers removed until the scion starts into growth. Wherever grafts fail to start the suckers may be left to grow for budding later.

Budding Large Trees

Cut back early the same as for grafting, cover all cuts with grafting wax, let all sprouts grow until time to bud, which is usually August 1 to September 1. Thin out the small, weaker sprouts and bud three or four of the largest ones, setting the bud four to six inches from where the sprout comes out of the stub. Use the patch bud, wrap carefully with waxed cloth, using muslin dipped in melted beeswax, the strips of cloth three-sixteenths to one-fourth inch wide. The following spring, about March 1, cut the sprouts back to about three inches above the bud, remove all other sprouts when new growth starts and keep all suckers removed.

Supports

At this time you will need to put up slat supports to tie the buds to. Take slats one by two inches and twelve feet long. Nail these to the sides of the limbs so they will extend six to eight feet above. Keep buds and grafts tied up every week or ten days during the growing season.

It has been our experience that budding is preferable. However, grafting in the spring and then budding in August gives you two chances the same season.

This same method applies to the pecan and hickory as well as the walnut and if the work is carefully done you will surely be well paid for your work.

[Pg 110]

INTEREST IN NUT GROWING IN THE INTERMOUNTAIN STATES

DR. L. D. BATCHELOR, UTAH AGRICULTURAL EXPERIMENT STATION

The marked increase in the interest in nut growing throughout the intermountain states is shown by the numerous inquiries on this subject which are directed to this office. There have been very few plantings of commercial orchards, but on every hand there is an interest shown in using nut trees for shade trees. The hardy varieties of Persian walnut are being planted more each year to ascertain the most promising sorts for commercial planting. Larger plantings will no doubt follow when some of these varieties have gained the confidence of the people, for one of the chief drawbacks to nut planting in the past has been the common belief that a semi-tropical climate is essential to the production of such nuts as almonds, pecans and Persian walnuts.

The Utah Agricultural Experiment Station has distributed about one hundred Persian walnut trees to coöperative planters over the state the past season. Ninety-five per cent of the trees are making a thrifty growth, while a similar planting made in 1912 gives good promise.

The following varieties are included in the experimental lot; Chaberte (grafted on black walnut); Franquette (on black and English walnut); Franquette (Vrooman Strain); Mayette (on English Walnut); Parisienne (on the black walnut); Pomeroy (seedling); Pomeroy (on black walnut); Rush (on black walnut).

A number of seedling trees have been discovered by the writer during the past year, throughout the state. Some of these seedlings are producing a fairly good type of commercial nut. What is more important, however, the success of these seedling Persian walnuts points to the practicability of planting the hardier varieties of this nut in the intermountain states.

[Pg 111]

REPORT FROM G. H. CORSAN

Location—Toronto.

Season—Winter, 1913-1914; Spring, 1914; Summer, 1914.

Type of season—November and December very mild. The ground was not frozen the least on January 1, 1914. January 12 the coldest day Toronto ever experienced 22° F. below zero. On February 12 it was 18° F. below zero. January, February and most of March *very* steady cold. Very little snow all winter, none on January 12.

Except those that I smothered by *too* much care the following seedlings lived through the winter and are alive today: Pecans; *pinus edulis*; *pinus Koriensis*; chestnuts; filberts; all the *juglans* including *Californica* and Canadian seed of *regia*; pawpaws; persimmons. My "mountain rose" peaches had not a twig winter killed though my Fitzgeralds, a very hardy peach, had some; this peach may not be as hardy as it is blown up to be. The season has been very dry and this summer many of the Paragon chestnuts died that were not watered. My Pomeroy walnuts are having a struggle to keep good form but I think that I will have a few hardy ones selected from them, as these last two winters have been the most trying on young trees we have ever had, of which fact I am glad. Here at Battle Creek are a dozen of Mr. W. C. Reed's grafted pecans; all are alive and growing strong as are mine in Toronto. I wrote you of the horrible abuse that mine had while in transit and they had a right to die but lived. Pecans grow very late into the fall and do not shed their leaves early so that I feel sure that the wood will harden sufficiently to stand the winter. The next question is, will the nut mature where grapes and peaches grow and just escape the October frosts. I saw many splendid pecans at Burlington, Iowa. Native pecans for seed stock can be procured from there in abundance. The nuts there are long and narrow, but not thick-shelled, and sell retail in the stores for not less than twenty cents a pound. The climate at Burlington has been 35° F. below zero some winters.

I am certain from my observations all over northeastern North America that the pecan has far more possibilities than the English walnut or any other nut unless we can develop a blight proof chestnut.

The north Chinese walnut has been doing wonderfully well in Toronto and those two trees fifteen

[Pg 112]

and seventeen feet high have not a twig killed. They do not bear as early as the Japanese. Their leaves are much longer than the English walnut but the nut is fully as good as the best California, Persian walnut that ever reached the market. Many of the nuts are paper shelled, some burst open at the suture. Their appearance is almost the same as the English but the tree is much hardier, growing at the extreme north of China. Then this is the tree that the nurserymen of Ontario have been selling as "English" walnuts and guaranteeing to be hardy. But as soon as we saw the leaf and the trunk we at once knew them for north Chinese walnuts and upon being told that, the men acknowledged that they were. Just today I have been speaking to a missionary from the extreme north of China and he informs me that they have two feet of ice every winter where these trees grow in abundance with the finest nuts he ever saw. This fact and the fact that really good pecans can grow up north are the two facts that I wish this association to work on in order to get results that are certain of success.

[Pg 113]

DISTRIBUTION OF PERSIAN ("ENGLISH") WALNUT SEEDLINGS IN MICHIGAN

Attention should be called to the work of Mr. Myron A. Cobb of the Department of Agriculture of the Central State Normal School, Mount Pleasant, Michigan, of which he sends the following outline. Mr. Cobb has consented to send out with the trees a leaflet, to be supplied by this Association, explaining the fundamental principles of nut growing.

It is interesting to note the cost of these seedling trees, one and one-half cents each, including postage.

The success of Mr. Cobb's work shows the readiness of the public for it. Our Association should encourage similar work in other states.

"About five years ago, I began the distribution of walnut seedlings by planting a few seeds in our orchard, and distributed them to the schools of Isabella County. I distributed about five hundred each year, making a total of two thousand five hundred seedlings. This year, the idea has been more widely advertised, and the demand for seedlings has been enormous. I have distributed this year five thousand seedlings and have received orders for about two thousand more which I could not fill because of lack of trees.

"This work was taken up primarily with the idea of distributing walnut seedlings on the farms and incidentally to teach how trees are raised and to correlate the work of the school to the home.

"The trees have been distributed largely by parcel post, in amounts from three to three hundred. The trees have been sold for one and one-half cents each. This covers the original cost of the trees and the postage on the same. Some of the trees have been grown upon our own grounds, but the most of them have been obtained from the D. Hill Nursery Company, of Dundee, Illinois. The distribution has been largely through the schools, but many organizations have interested themselves in the movement, as farmers' clubs, women's clubs, civic improvement leagues, etc. The Women's Club of Pontiac distributed two hundred and seventy-five. We prefer to distribute them through the schools.

"These trees have been distributed to nearly every portion of Michigan, Mr. Weidman, a prominent lumberman, sending one hundred to the Upper Peninsula. Several hundred have been sent to the burned over areas of Northeastern Michigan, some have been planted in the cities and along the roadside, but the most of them have been distributed to the farms. The demand this year exceeded our anticipation. Many farmers and organizations have been greatly interested in securing and distributing the seedlings, and some of the requests for seedlings have been very interesting, in that they show such a great desire on the part of the farmers to secure the trees, and it has been with extreme regret that we were obliged to return their money, because of lack of seedlings.

[Pg 114]

"This movement seems to be especially interesting in many ways and plans are being made to supply the demand the following season and to extend the work along other practical lines and apparent indications are that our slogan, 'A walnut tree for every farm,' will be a reality."

[Pg 115]

EXAMPLES OF SOME RECENT CORRESPONDENCE

FARMINGDALE, ILL., August 5, 1914.

I am interested in fruit and nuts of all kinds, but plant only for home use and experimentally.

I believe the chestnut is a better money nut here than the pecan, as natives here bear very sparsely and irregularly although the catkins or male part usually come out in great profusion.

I note that you say "there is probably not much use in trying to grow the pecan or Persian walnut outside the peach area." Here our pecan seems as hardy as the average apple, withstanding 25° below zero or more with little or no injury. I find that the "Andrus" Persian walnut is *much* hardier than the "Pomeroy" as I planted two small one-year trees that endured the following winter 20° below, with no injury to even terminal buds. So twenty years may show a change of opinion as to the value of the Persian walnut in the Middle West.

The Japanese walnuts here are often injured by winter at 15° below, but there may be hardier types and varieties than those I have tried.

I have never been able to *graft* the pecan successfully—annual or budding has given me the only success I have had. And in years like this and last, I find it very difficult to make a transplanted grafted pecan live without watering.

I have failed, so far, in finding a practical method to keep chestnuts in good eating and planting condition until spring. If stored in the ground cellar or as peach pits, they mould, if kept in an ordinary building they become too dry.

BENJAMIN BUCKMAN.

[Pg 116]

SOUTH WATERFORD, ME., November 21, 1914.

DEAR SIR:

I have just read in the last issue of the *Rural New-Yorker* a very interesting article on nut growing, giving your name.

For several years I have thought that it would be better for people in the New England States to give more attention to nuts than so much to apples, but I have not been in a position to start in with nut trees much until now.

Although 65 years old and somewhat used up with rheumatism I am not ready to give up yet....

When I started on this farm it did not produce a barrel of grafted fruit. There were quite a lot of natural fruit trees that never had been trimmed or cared for in any way. I grafted these trees and set out some from time to time until now the farm produces from 500 to 800 barrels per year.

This year apples at picking time sold slow for \$1.00 per barrel for No. 1's, No. 2's not wanted at any price.

I often think that if I had set out a few acres of nut trees 25 years ago they would have been more profit now than the whole 200-acre farm is....

Last spring on account of my lameness and the scarcity and the high price of farm help I sold my large farm and bought a small place.... Last spring I had about two acres of this land plowed up and during the summer thoroughly worked over with the idea of next spring setting it out to nut trees of some varieties that would do best here. Now I do not know anything about nut growing or what varieties best to plant. If you can help me out by putting me in a way to get this information you will confer a great favor.

UNITED STATES DEPARTMENT OF AGRICULTURE,
Bureau of Statistics,
(Agricultural Forecasts)
Office of the County Correspondent.

Isle La Motte, Grand Isle, Vermont, DECEMBER 10, 1914.

MY DEAR SIR:

I wish to set out several nut trees next spring here on this island in Lake Champlain. We have lots of hickory nuts, butternuts, hazelnuts and beechnuts growing wild here and Champlain says in his narrative that there were lots of fine chestnuts growing here 300 years ago. Now I want to try some chestnuts, black walnuts, English walnuts, pecans, and almonds. If you can tell me the hardiest varieties of each and where to get trees I shall be greatly obliged. I have my doubts about pecans and almonds but am willing to try them here. I am growing peaches here where they never grew before.

RICHMOND, VA., December 13, 1914.

DEAR SIR:

I am just commencing an enterprise in propagation of nut trees here just north of Richmond. I shall have plenty of time to do some experimental work in planting of unknown varieties and would like to do some such planting. I want any information I can get on varieties of English and black walnuts, hazelnuts, hickories and persimmons, "sloes" and any other varieties of currants. If I am not trespassing too much on your time please put me in touch with parties who can give me information. Please advise me if your association has any publications on the subject.

[Pg 117]

I am a retired civil engineer and my hobby has been all my life the study of forest trees. I am now in a position to do some planting and I should be very glad to coöperate with your association. I am here located exactly on the line of demarcation between northern and southern forest growths and I think I have exactly the location for experimental work....

NEW MILFORD, CONN., December 8, 1914.

MY DEAR DR. DEMING:

This morning I am sending, by parcel post, a sample of hickory nuts to compete for the prize which I saw has been offered by the association, of which you are secretary.

My father, while he was living, sent an exhibition of nuts to the Pan-American, also to the St. Louis Fair, and received the highest award given for nuts at both Expositions.

NEW LONDON, CONN., December 3, 1914.

DEAR SIR:

We are all elderly people, lacking energy to cultivate our farm land as closely as we ought. Some of us are interested in nut culture and have suggested that we plant some nuts and watch their growth from the very beginning. Of course, we only wish nuts of the best varieties and easiest culture. We only wish *hardy* nuts, that do not need grafting, and we prefer those that come into bearing early. We do not wish any of the Mammoth dwarf, Japan chestnut. We bought a nice one, but it *will* not mature its fruit, and is gradually dying. We find great difficulty in purchasing nuts. Those who have *trees* for sale, refuse to sell the NUTS.

A person who has a few Japan walnut trees in connection with some other business, very kindly offered to sell us some nuts, and these are all we have been able to purchase so far. There are but very few nuts that we would attempt to try. We wish to find some of the very best of filberts or hazelnuts, that we shall probably cultivate in bush form. We are interested in the *hardy*, hard shell almonds. Do you think we could do anything with them? I *think* they do not have to be grafted. Do you know of any species of English walnut or Madeira nut, that are perfectly hardy, and come into bearing early, that would serve our purpose?

I know we are asking quite a favor, for strangers, but if you will kindly assist us a little, we will thank you very much.

BROADWAY METHODIST CHURCH, FARGO, N. D.,
November 10, 1914.

DEAR SIR:

I saw your statement in the *Southern Planter* this morning and am writing, not to tell you where choice nut-specimens are to be obtained but to ask a few questions relative to the obtaining the *best* information possible to the growing of nuts. I have a ten-acre tract about twelve miles straight south of Staunton, Va. When I purchased the tract the chestnut and hickory were thriving. I have had about one half of the property cleared and some trees planted. Among the trees are twelve hardy English walnuts from Green's Nursery, Rochester, N. Y., 6 "Mayo" and 6 "Pomeroy" walnuts from Glen Brothers, Rochester, N. Y. I am interested in nut-culture. I have inquired of Glen Brothers if the Kentish Cob would thrive there. They assure me it will. If there is a chance to make a success of nuts, I would turn my time and thought to the raising of walnuts and Kentish cobs and filberts. What would you advise? If you cannot give me the desired information, kindly give me directions to the one who can. I was brought up among the walnuts and filberts and cob-nuts in the County of Kent, England, and now my thoughts are turning to the delights of earlier days and I intend coming to the Shenandoah Valley in the near future and making my home there....

[Pg 118]

THE SECRETARY'S REPLY

GEORGETOWN, CONN., November 13, 1914.

MY DEAR MR. ——:

It gives me great pleasure to reply as well as I am able to your letter of November 10th. You are in the position of many thoughtful men of the present day in craving the peace and delight of a life that is nearer to nature. You have also a small tract of land in a favored part of our country, and you have been led to believe, by the statements that you have run across in chance sources, that the returns from nut growing may enable you to attain your ambition.

Our president has a place at Roundhill, Va., not very many miles from yours. He is a professor of something like "Efficiency" in the University of Pennsylvania. He is young, aggressive and very efficient himself. His father was, and he himself is, an orchardist and fruit grower. Both he and I have been for some years working at the problems of nut growing. But it is only this year that we seem to have overcome the difficulties of grafting and budding nut trees. We have the greatest faith in the future success of nut growing, but we do not know how long it will be before we shall know just what varieties of nuts to plant ourselves, least of all to advise others to plant, with any certainty of success. For the man, however, who realizes that nut growing in the North is still in the experimental stage, we have no end of information and advice.

The information you have had from interested sources is misleading. Probably you would not live long enough to get satisfactory results from the seedling trees you might plant, even if such results ever came. To get reasonably prompt and certain results from nut trees it is necessary to grow such trees grafted or budded from trees of known good bearing record, just as the same thing is necessary with the common fruit trees.

Your information about the Kentish cob and the filbert is but half the truth. The shrubs will thrive for a time in almost any place. But they have nowhere in the East been a success because sooner or later they are destroyed by a disease. One of our great nut growing wants is a filbert or hazel of good size and quality that has the blight resistant quality of our native hazel.

My advice to you then would be as follows. If it is your idea to make a living by nut growing on your ten acres in Virginia within a reasonable number of years, I do not advise you to attempt it. If you wish to take up nut growing as offering an occupation of the greatest interest, with opportunity for the solution of problems of great importance to mankind, and a fair promise of eventual money profit to yourself or to your heirs, then I should certainly advise you to take up nut growing.

[Pg 119]

I would not attempt to grow the hazel or the chestnut at present, except in an experimental way. The nuts of best promise for you are the Indiana or northern pecans and the English walnut. But it requires considerable study of the subject before one may take up the practice of nut growing without the probability of making unnecessary mistakes, and unnecessarily losing time and money in repeating the experiences of others.

The wilful misstatements of some nurserymen, and the ignorance or carelessness of others, has hindered the progress of nut growing. Fortunately we have several nurserymen who have made a study of the subject, who are honorable and truthful men, and on whose statements you may rely. The only possible qualification of this statement that I know of is that an allowance for enthusiasm might be borne in mind without risk of harm. I enclose a list of such nurserymen, accredited by this association.

Your letter seems to call for this extended reply which I hope will be of service to you. If I have left anything obscure that you would like to know about, or if I can assist you in any other way, please let me know.

With the hope that you may be able to take up this most fascinating avocation with pleasure and profit, I am

Very truly yours,

W. C. DEMING.

[Pg 120]

PRELIMINARY REPORT ON THE PERSIAN WALNUT

The secretary herewith presents a preliminary report on the investigation of the Persian walnut. No attempt has been made to collect information about the walnut on the Pacific Coast, which is quite another matter. But the investigation reports very briefly on trees from Canada to Georgia and from Massachusetts to Utah.

The result of the investigation so far is hardly more than a bare catalogue of the trees which the secretary has been able to locate, and is intended simply as an aid to further investigation. It is now published with the hope that members and others may become informed of Persian walnut trees that it may be possible for them to locate, observe and report upon. It is manifestly impossible for any one person, unless some paid agent of the government or other institution, to investigate many of these trees personally, they are scattered over such a wide area. Correspondence is usually unsatisfactory and personal investigation is the only way to get good results.

Probably only a small part of all the existing trees is here catalogued. But among them, and among the others that will come to light in the constantly widening investigation by an increasing number of interested persons, will certainly be found varieties of merit and adaption to different sections of the country.

As the meeting next year at Rochester is to give especial attention to the Persian walnut it is to be hoped that members and others will make special efforts to send to the meeting specimen nuts and reports of trees.

THE PERSIAN WALNUT

CANADA

Brantford—Dr. D. S. Sager. Knows at least 50 trees. Is top working native walnuts and other work.

Grimbsy—H. K. Griffith. Bearing tree or trees.

Grimbsy—Louisa Neller. Bearing tree or trees.

Grimbsy East—Beverley Book. Bearing tree or trees.

St. Catherins—Miss Alice Berger, 251 Queenston St. Several bearing trees. One tree 100-200 pounds annually.

St. Catherins—Harper Secord, R. 2. Twenty-eight young seedlings.

St. Catherins—James Titherington. Bearing tree or trees.
St. Catherins—J. J. Fee, Niagara St. Bearing tree or trees.
St. Catherins—F. D. Solvyne, Carleton St. Bearing tree or trees.
Toronto—G. H. Corsan, University of Toronto. Many young walnut and other nut trees.
"Hundreds of thousands being planted in Niagara Peninsula."

[Pg 121]

NEW YORK

Chappaqua—F. M. Clendenin. Just bearing few nuts after 8 years.
Lockport—A. C. Pomeroy. Bearing orchard, seedlings.
North Avon—Adelbert Thompson. Bearing orchard, seedlings, 225 trees.
Hilton—E. B. Holden. Bearing trees.
Rochester—B. F. Whitmore, 520 Park Ave. Three bearing trees.
Holley—W. E. Howard. Four bearing trees. Knows of others. "Hundreds of trees."
Canandaigua—Bradley Wynkoop. Bearing tree.
Brockport—Marcus Cook, 90 Holley St. "Nearly 100 bearing trees within 5 miles of Brockport."
Fairport—Pickering Bros., Some Pomeroy's.
Fairport—N. A. Baker.
Victor—E. Y. Shilling. Bearing tree.
Victor—A. B. Wood. Bearing tree.
Victor—Josiah Snyder. Bearing tree.
Watkins—Write E. C. Gabriel, Rock Stream. Tree reported by Prof. Corbett at N. Hector, 2 or 3 more east side of lake.
Earlville—Francisco I. L. Mulligan. Twenty-nine Pomeroy's and others.
Hoosick Halls—A. A. Baker, R. 2. Knows of bearing tree near Long Island.
Port Jefferson—Joseph Schriever. "Fine Specimen."
Huntington—Historical Society. "Fine Specimen."
Between Huntington and Centerport, on Gallows Hill, old Geo S. Conklin place, occupied by "Peachy,"
as reported by Uncle Jerry Wockers of the Ithaca *Journal* office. Bearing tree.
Oyster Bay—Joseph H. Sears. Bearing tree, reported by Henry Hicks.
Oyster Bay—Mrs. W. H. Burgess. Bearing tree, reported by Henry Hicks.
Glen Cove—John T. Pratt. Bearing tree, reported by Henry Hicks.
Glen Cove—W. L. Harkness (Dosoris). Bearing tree, reported by Henry Hicks.
Woodbury—L. Piquet. Bearing tree, reported by Henry Hicks.
Roslyn—Admiral Aaron Ward. Bearing tree, reported by Henry Hicks.
Hempstead—Rev. Chas Snedaker, St. George's Rectory. Bearing tree, reported by Henry Hicks.
New York City, Westchester—Dr. Deming. Three Morris trees.

DISTRICT OF COLUMBIA

Washington—Barnes, Weaver, Kaingler, Stabler and other trees.

DELAWARE

Wilmington—Dr. Rumford.
Smyrna—Walter L. Marks.
Magnolia—J. B. Tisdale. One or more bearing trees. Reported by E. B and J. M. Reed, Fredonia.
Millsboro—G. L. Ellis. Twenty miles away some trees.

NORTH CAROLINA

Carthage—I. W. Williamson. Few young trees.
Carthage—John A. McLeod, R. 3.
Pomona—J. Van Lindley. Several trees near Southern Pines.

[Pg 122]

OHIO

Cincinnati—I. B. Johnston. "About 50 trees near Cincinnati."
Gypsum—H. G. Miller, of Wm. Miner and Son, Elmwood Fruit Farm. Two trees, 20 years old.
Also young Pomeroy trees. "Several very large bearing trees within a few miles of here."
Dayton—Fred Kircher, 221 S. McDonough St.
Amherst—O. F. Witte, R. 2. Bearing tree.
Middletown—Levi Leonard. One hundred seedlings. Knows of old trees in Lancaster Co., Pa.

NEW JERSEY

Lumberton—C. S. Ridgeway. "Peerless Paper Shell," 25 years, 50-100 pounds.
Paterson—Thos. Rodgers, 236 W. 25th St., W. End. Bearing tree.
Salem—Weber; write D. Harris Smith, Att'y. Rep. J. L. Doan.
Haddonfield—J. Hutchinson.
Raritan—Philip Lindsley, Box 350. Bearing tree.
Flemington—Rev. Dr. Sonne. Bearing tree.
Marlton—C. D. Barton. Knows good bearing trees.
Moorestown—Charles Haines. Bearing tree.
Delanco—Frank Jones. Bearing tree.

VIRGINIA

Williamsburg—D. S. Harris, Box 416, 33 Febrey. "Grafted."

Williamsburg—J. A. Bechtel, R. 2.
Mint Springs—Williams place. Two trees; rep. *Am. Nut. Jour.* 8, 14, p. 39.
Lynchburg—Crockett.
Roslyn—R. S. Carter, Box 41. Three trees.
Emporia—H. W. Weiss. "Fifty trees on different farms; English, Japanese and black."

MARYLAND

Sandy Spring—Ava M. Stabler.
Colton's Point—James K. Jones. See Circular of J. F. Jones. "Eight or ten bearing trees."
Forest Hill—Wilmer P. Hoopes.
Churchville—Alexis Smith. "Alexis."
Sharon—Mrs. S. J. Poleet. "Sheffield."
Berkeley—J. T. Smith. "Smith."
Janettsville—David Hildt. "Beder."
Vale—Kate Hooker. "Hooker."
Baltimore—Franklin-Davis Nurseries.
Princess-Anne—Ida M. Lankford. Bearing trees.
Cooperstown—L. J. Onion, P. O. Sharon. "Sir Clair."

MASSACHUSETTS

Boston—Mrs. Schultz, 335 Cornell St., Roslindale, Boston. Bearing tree.
Newburyport—Reported by C. F. Knight, Rowley. Bearing tree.
Winchester—Brackett (Bro. of G. B. Brackett). Bearing trees.

[Pg 123]

NEW HAMPSHIRE

Keene—Reported by A. C. Pomeroy. Pomeroy trees.
Newmarket—Alfred C. Durgin. Six Pomeroy, 2 Rush, "Supposed to be grafted."
Enfield—Forest Colby. Some trees.

MICHIGAN

Mt. Pleasant—Myron A. Cobb, Central State Normal School. Has been distributing thousands of walnut seedlings.
Coloma—W. C. Reed, Vincennes, Ind.
Almont—F. P. Andrus. Bearing tree and seedlings.
Augusta—Orville I. Miller. Buds from Andrus.

ALABAMA

Huntsville—Mr. Mayhew, Westchester, New York City. Reports tree.

TENNESSEE

Greenville—Wm. H. Brown, 516 Main St. Reports 3 trees, El. 1500.

GEORGIA

Sharpe—Paul Dyer. Reported by Prof. McHatton.

IDAHO

Boise—S. A. Gehman. Local bearing trees. C. C. Vincent, Ag. Exp. Sta. Moscow.

UTAH

Lehi—Mrs. J. T. Winn. Several trees.
Salt Lake City—J. T. Harwood (brother of above). Many bearing trees. Leon D. Batchelor, Horticulturist, Ag. Exp. Sta. Logan.

[Pg 124]

CORRESPONDENTS AND OTHERS INTERESTED IN NUT CULTURE

CALIFORNIA

D. P. T. MacDonald, Horticultural Inspector, 418 20th Street, Oakland

CANADA

Albert H. Lawrence, Edmonton, Alberta, Box 142

COLORADO

Dr. J. W. Benners, Silver Plume

CONNECTICUT

P. G. Wallmo, Stony Creek, Box 314
Royal J. Barter, Farmington
Lester S. White, Collinsville
Noah Wallace, Farmington
C. K. Decherd, Meriden, Box 464
F. Perry Hubbard, care of The Rogers & Hubbard Co., Middletown
Clarence T. Hatch, New Milford
Chester Hart, Barkhamstead
Paul Steinmann, Waterbury, R. 3
Charles E. Chester, New London, Box 593

DELAWARE

M. L. Anderson, Lincoln City

DISTRICT OF COLUMBIA

William A. Taylor, Department of Agriculture

FLORIDA

C. E. Browne, Glen Saint Mary

IDAHO

Thomas Judd, St. George Crystal Springs Orchard Co., Twin Falls
John Gourley, Filer
Mr. Squires, Buhl, Rio Vista Fruit Ranch

ILLINOIS

Jacob Wyne, Lintner
Miss Maude Davidson, Lewiston
L. H. Calloway, Chapin
Benj. Buckman, Farmingdale
William E. Walsh, Sparta, R. 4.
Geo. R. Hemingway, 121 Marion Street, Oak Park
Mrs. R. Matthews, McClure
Mrs. Ida L. Rice, Disco
Chas. E. Graves, University of Illinois Library, Urbana
Mrs. Truman Sweet, Durand
Geo. Findlay, 102 So. Market Street, Chicago
J. C. Gibbs, Elmwood
Dr A. W. Foreman, White Hall
Editor Journal American Medical Association, 535 Dearborn Street, Chicago

[Pg 125]

INDIANA

John F. Woods, Utility Farm, Owensville, R. 19
W. E. McElderry, Princeton Nursery, Princeton
H. J. Berendes, 509 E. Pennsylvania Street, Evansville
Vickery Bros., Evansville
Jarodsky & Co., Mt. Vernon
Henry Titus, Grand View
J. W. Jeffries, Carbon
Indiana Pecan Co., 234 3d Street, Mt. Vernon
H. B. Hill, Knightstown, Henry Co.
R. R. Katterjohn, Boonville
E. Hicks Trueblood, Salem, R. 9, Box 62
H. B. Halloway, 1132 No. Illinois Street, Indianapolis
D. W. McFarland, No. Manchester
Thomas L. Kerth, 408 Second Avenue, Evansville
Leo H. Fisher, Huntingburg
Harry Gieseke, Patoka

C. A. Weillbrenner, Mt. Vernon
J. W. Gleichman, Evansville
H. M. Thurber, Rockport
Dr. F. L. Davis, 209 Dover Street, Evansville
John F. Woods, Owensville
L. P. Dorr, Howell, R. 9
Clarence Cook, Indianapolis
Robert J. Tracewell, Evansville
W. A. Graham, Enterprise
J. C. Haines, Lake
W. A. Taylor, Oaktown
Chas. F. Hartzmetz, Evansville
J. W. Strassell, Rockport

IOWA

Wendell P. Williams, Danville

KANSAS

H. S. Baker, Secretary Winfield Nursery Co., Winfield
G. H. Dodge, 1000 Kearney Street, Manhattan
J. H. Brown, Gridley

KENTUCKY

J. W. Blunk, Maceo
James Speed, Editor *Farm and Family*, Louisville
H. C. Hargis, Hebbardsville
C. F. Kleiderer, Henderson
Professor Carmody, Agricultural Experiment Station, Lexington

[Pg 126]

MAINE

G. I. Hamlin, So. Waterford
E. F. Hitchings, Department of Horticulture, College of Agriculture, Orono

MARYLAND

Mrs. W. C. Taylor, 700 N. Broadway, Baltimore
I. S. Winfree, Salisbury
Frank J. Hoen, 213 Courtland Street, Baltimore
Wm. E. Little, Westminster
Mrs. W. C. Taylor, 700 No. Broadway, Baltimore

MASSACHUSETTS

Capt. William H. Dole, N. Dartmouth, R. 4
Prof. W. D. Clark, Department of Forestry, Agricultural College, Amherst
Leavitt Perham, Ludlow Center
Orrin C. Cook, Milford
Chas. Ripley, 173 Harvard Street, Dorchester
Harris E. Chace, Clifford
Wilfred Wheeler, Secretary State Board of Agriculture, 136 State House, Boston
Chas. R. Green, Librarian Agricultural College, Amherst
John H. Chard, 263 Salem Street, Bradford
Prof. W. D. Clark, Department of Forestry, Agricultural College, Amherst

MICHIGAN

J. Arthur Whitworth, Michigan Desk Co., Grand Rapids
Dr. H. M. Dunlap, Battle Creek
William L. Davies, 1780 St. Aubin Avenue, Detroit
L. O. Cook, Litchfield
Miss Marie Palmer, Plymouth, R. 2
Daniel A. Edwards, Newaygo
B. W. Madill, Linden
J. J. Robinson, Lamont

MISSISSIPPI

G. H. Sadler, Columbia, R. F. D., care of Yale Cany.
C. J. Hayden, Assistant Professor Horticulture, Agricultural College

MISSOURI

William A. F. Hain, 22 Tiffin Avenue, Ferguson
Frank Wild Floral Co., Sarcoxie
F. A. Chambers, Sherrill
E. A. Ester, 1102 Rogers Avenue, Springfield

MONTANA

J. L. Pfeiffer, Joliet

NEW HAMPSHIRE

C. W. Hoitt, 24 Odd Fellows Building, Nashua

[Pg 127]

NEW JERSEY

Thomas Rodgers, 236 W. 25th Street, Paterson
J. N. Jarvie, Beemerville
Dr. W. H. Pounds, Paulsboro
H. G. Taylor, Secretary State Horticultural Society, Riverton
Nobel P. Randel, The High School, Montclair
C. C. Doorly, Sussex, R. 2
Joseph S. Smith, Burlington, R. 3
Lemuel Black, Hightstown
Herman Tice, Westwood
Philip Lindsley, Raritan, Box 350
Rev. Dr. Sonne, Flemington
C. D. Barton, Marlton
Chas. Haines, Moorestown
Frank Jones, Delanco
John Hutchinson, Haddonfield

NEW YORK

Dr. William B. Jones, 525 Lake Avenue, Rochester
F. H. Pough, Union Sulphur Co., 17 Battery Place, New York City
W. V. S. Thorne, V. P. Union Pacific System, 165 Broadway, New York City
B. F. Butler, The Warrington, New York City
Fred Mackintosh, 3 Gillespie Street, Schenectady
J. Wallace Bush, Central Valley
Frank O. Ayres, 1 Madison Avenue, New York City
Peter H. Beller, Gallupville
Jordan Philip, Cashier First National Bank, Hudson
W. Robert Bruce, Brick Church Institute, Rochester
O. N. Fisher, 3390 Park Avenue, New York City
Hayward Greenland, care of Wilbur Van Dayer, White Memorial Building, Syracuse
A. Davis, 1240 Putnam Avenue, Brooklyn
R. W. Tompkins, Brewster, R. 2
Ralph Hammersley, 88 Helderberg Avenue, Schenectady
S. Klaussner, Ferndale, Sullivan County
C. C. Sanders, 206 Broadway, New York City
M. R. Ford, Dundee
F. Gilmore, Piffard
Mrs. S. T. Smith, Bath
Isaac Conover, Randall
E. H. Kelly, State Road, Plattsburgh, R. 2
Morris M. Whitaker, Nyack
Fred Blizzard, Westtown
Wm. T. Laing, 716 Flatiron Building, New York City
Frank Hyde, Peekskill, Box 177
Mrs. J. Robert Tice, Marlborough, R. F. D.

Miss Lathrop, care of Alex D. Lathrop, Stockport
E. L. Overholser, State College of Agriculture, Ithaca
Trueman's Farm, Lake Katrine
C. H. Hechler, Harbor Hill, Roslyn
Everett C. Foster, Sagaponack, L. I.

[Pg 128]

NEW MEXICO

F. V. Pattison, Clovis

NORTH CAROLINA

Buffalo Nursery Co., McCullers
C. W. M. Hess, Manager Audubon Nursery, Wilmington
C. H. Gochnauer, New Bern, R. 2
Jesse M. Howard, 413 No. Kerr Street, Concord

OHIO

S. Prentiss Baldwin, Leslie Block, Water and Decatur Streets, Sandusky
Miss Minnie Lehrer, 812 Osborne Street, Sandusky
Chas. A. Clark, Ravenna, R. 2
E. L. Moseley, 125 Vine Street, Sandusky
Geo. T. Bishop, 1000 Scofield Building, Cleveland
J. W. Peters, Peters Buggy Co., Reynoldsburg
Mrs. C. C. Arms, St. Clair Road, Euclid
D. S. Burch, Assistant Editor *Farm and Fireside*, Springfield
William N. Neff, Martel, Box 31
H. M. Farnsworth, Brooklyn Bank Building, Cleveland
C. M. Knight, 129 South Union Street, Akron
H. A. Lockwood, The Lockwood-Owen Farm Co., Port Clinton
N. G. Buxton, Johnstown
Mrs G. W. Henderson, Cadiz, R. 6
J. W. Flaherty, Scio, R. 3
A. M. Preston, Vanatta, R. D. Box 122
G. L. Hyslop, Deshler
T. A. Dilley, Duncan Falls
Henry Bannon, Portsmouth
F. H. Wickey, Greenwich, R. 1
R. P. Fowler, Jr., Coshocton, R. 4
Leroy V. Ewing, Cambridge, R. 5
Prof. W. J. Green, Horticulturist, Agricultural Experiment Station, Wooster
Wm. Schiller, Poland, R. F. D.
E. Gill, Mechanicsburg
W. J. Miller, 134 Garvin Avenue, Elyria
W. P. Deppen, Tiffin, R. 1, Box 20

OREGON

W. A. Orr, Milton

PENNSYLVANIA

Dr. Leedon-Sharp, 4041 Catherine Street, Philadelphia
Paul Mease, Pleasant Valley
J. A. Calderhead, Wilmerding
R. P. Wright, Reed Mfg. Co., Erie
John L. Hanna, Manager River Ridge Farm, Franklin
Elam G. Hess, Mannheim, Box 232
Chester Rick, Girard College, Philadelphia
Sam. P. Moyer, Meyerstown
John Dierwechter, Richland
Joseph T. Huss, Wellsville
W. F. Beers, Three Springs
Editor Medical Council, Philadelphia
S. B. Detwiler, Chestnut Blight Commission Laboratory, University of Pennsylvania,
Philadelphia
A. Y. Satterthwaite, Swarthmore
Donald Hutcheson, Warriors Mark

[Pg 129]

SOUTH CAROLINA

T. B. Ellis, Jr., Lyndhurst

TEXAS

O. A. Triplett, 215 No. Elm Street, Fort Worth

UTAH

L. M. Gillilan, High School, Salt Lake City
J. T. Harwood, High School, Salt Lake City
Mr. Calahan, Calahan's Book Store, Salt Lake City
Miss Maud Harwood, Lehi
Joseph Broadbent, Utah Lake Irrigation Co., Lehi
Jesse Knight, Provo
Carl Isacson, Brigham City
W. O. Knudson, Brigham City
William Zollinger, Providence
E. D. Ball, Logan
Antone Pherson, Logan
A. R. Hurst, No. Logan
Sam Judd, St. George
John Stuki, Santa Clara
Nelson Fenton, Pleasant Grove
Richard Brerton, Provo
Charles Stay, Calders Station, Salt Lake
Mrs. J. T. Winn, Lehi
Dr. T. B. Beatty, Salt Lake City
J. F. Knudson, Brigham City
J. Fred Odell, Woods Cross
Joseph A. Smith, Providence

VERMONT

Mrs. Charles A. Lewis, Grafton
Arthur H. Hill, Isle La Motte

VIRGINIA

Warren Tomlinson, Farmville
R. G. Bickford, Lee Hall Farm, Newport News
Mrs. W. S. Mott, Dixondale
R. G. Bickford, Newport News
James H. Denmead, West Point, Box 50
John J. Rhodes, Potomac View Farm, Sterling
R. M. Fontaine, Richmond, care of Chesapeake and Potomac Telegraph Co., 7th and Grace
Streets

[Pg 130]

WASHINGTON

J. P. Douglass, Tonasket
A. H. Irish, Wapato
Robert W. Bryan, Alderdale

WEST VIRGINIA

Martin Crow, Dallas

WISCONSIN

W. S. Liston, 459 Van Buren Street, Milwaukee

WYOMING

W. C. Deming, Editor *Wyoming Stockman-Farmer*, Cheyenne

AUTHORITIES AND SPECIAL CORRESPONDENTS

For a list of authorities and special correspondents in all the states of the Union, and elsewhere, see the report of this Association for 1913.

SOME RECENT LITERATURE ON NUTS AND NUT GROWING

The Agriculture of the Future. J. Russell Smith, *Harper's Magazine*, January, 1913, p. 273.

The Doctor's New Job. J. Russell Smith, *Country Gentleman*, June 28, 1913, p. 970.

Nut Farming For Tomorrow. J. Russell Smith, *Country Gentleman*, July 5, 1913, p. 1015.

The Pecan and the Patient Waiter. J. Russell Smith, *Country Gentleman*, December 20, 1913.

Pigs, Peas and Pecans. J. Russell Smith, *Ibid.*, December 27, 1913.

The Real Dry Farmer. J. Russell Smith, *Harper's Monthly*, May, 1914.

Tree Crops as a Control of Erosion. J. Russell Smith, *Science*, June 12, 1914.

Two Story Farming. J. Russell Smith, *Century Magazine*, July, 1914.

The Agriculture of the Garden of Eden. J. Russell Smith, *Atlantic Monthly*, August, 1914.

Vacations that Counted. J. Russell Smith, *Harper's Weekly*, September 12, 1914.

The Life History and Habits of the Walnut Weevil or Curculio, *Conotrachelus juglandis*. Part III of the Annual Report of the Connecticut Agricultural Experiment Station, New Haven, 1912, p. 240.

The Walnut Bud-moth, *Acrobasis caryae*. *Ibid.*, p 253.

Japan Walnuts, *Juglans sieboldiana*. *Rural New-Yorker*, February 1, 1913. H. O. Mead on variation in type and crossing.

Persian Walnuts for Indiana. Van Deman, *Rural New-Yorker*, February 22, 1913, p. 225.

Dropping Walnuts. *Ibid.*, p. 259.

Chestnut Bark Disease. Part V of the Annual Report of the Connecticut Agricultural Experiment Station, New Haven, 1912. Very full account, 100 pages, plates, charts and bibliography.

The Chestnut Bark Disease. *Ibid.*, bul. 178, September, 1913.

So-called Chestnut Blight Poisoning. *Ibid.* Part I of the Annual Report for 1914. 12 pages and plate.

Supposed Poisonous Properties of Chestnuts Grown on Trees Affected with Chestnut Blight. C. Dwight March. *Journal of the American Medical Association*, July 4, 1914, p. 30.

Studies in Juglans, 1. Study of a Form of *Juglans Californica*, Watson. By Ernest B. Babcock. University of California Publications in *Agricultural Sciences* Vol. 2, No. 1, pp. 1-46, pls. 1-12. December 4, 1913.

Studies in Juglans, II. Further Observations on a New Variety of *Juglans Californica*, Watson, and on Certain Supposed Walnut-Oak Hybrids. By Ernest R. Babcock. *Ibid.* Vol. 2, No. 2, pp. 47-70, pls. 13-19. Oct. 31, 1914.

Production of the Walnut in the Northwest. Ferd Groner. Fifth Annual Report, Oregon State Horticultural Society, December, 1913. p. 159.

Top-Working Seedling Pecan Trees. W. N. Hutt. Bul. 224, North Carolina Agricultural Experiment Station, Raleigh, January, 1914. Excellent description and illustrations.

Birds as Carriers of the Chestnut Blight Fungus. *Journal of Agricultural Research*, September, 1914, Vol. II, No. 6, Department of Agriculture, Washington, D. C. Account of experiments, with plates and bibliography.

Pecan Rosette. By W. A. Orton and Frederick V. Rand. Reprint from *Journal of Agricultural Research*, Vol. III, No. 2. Department of Agriculture, Washington, D. C., November 16, 1914.

The Possibilities of Nut Culture in New England. By Dr. William C. Deming. Reprinted from the Transactions of the Massachusetts Horticultural Society, 1914, Part 1. Boston, August, 1914.

Nut Culture. By William C. Deming. Circular No. 26, Massachusetts State Board of Agriculture. June, 1914.

Nut Growing and the Propagation of Nut Trees. By William C. Deming. To be printed in the Annual Report of the New Jersey State Horticultural Society, 1914.

Grafting the Hickory. By William C. Deming. *Rural New-Yorker*, December 12, 1914. Note on a simple method for grafting the hickory by the slip bark method.

Nuts for the North. H. E. Van Deman. *Green's Fruit Grower*, December, 1914, p. 7.

Cracking the Walnut Blight. Walter V. Woehlke. *The Country Gentleman*, November 28, 1914, p. 1910. Illustrations of top-working the walnut in California.

American Nut Journal. Published monthly at Rochester, N. Y., by Ralph T. Olcott, Editor of *American Fruits*. \$1.25 a year, or \$2.50 with yearly membership in this Association. First number issued June, 1914, Ellwanger & Barry Building.

Proceedings of the Thirteenth Annual Convention of the National Nut Growers Association, Thomasville, Georgia, October, 1914. J. B. Wight, Secretary, Cairo, Georgia.

[Pg 132]

PRESENT AT THE FIFTH ANNUAL MEETING OF THE NORTHERN NUT GROWERS ASSOCIATION

W. C. Reed
M. T. Reed
C. A. Reed
R. T. Morris
J. Russell Smith
Col. C. K. Sober
W. O. Potter
E. A. Riehl
J. L. Doan
H. R. Weber
C. P. Close
R. L. McCoy
J. F. Wilkinson
T. P. Littlepage
R. T. Olcott
W. C. Deming
H. D. Simpson
Ray C. Simpson
Dr. A. J. Knapp
L. W. Kiefer
Col. C. A. Van Duzee
John S. Parish
Miss Ellen Littlepage
Mrs. H. S. Kramer
Dr. Worsham

Mr. C. D. Evans
Paul White
Mr. A. C. Pomeroy
Mrs. Pomeroy
Harry Gieseke, Patoka, Ind., R. 22
D. C. Hargis, Hebbardsville, Ky.
C. A. Weillbrenner, Mt. Vernon, Ind.
C. E. Browne, Glen St. Mary, Fla.
J. W. Gleichman, Evansville
H. M. Thurber, Rockport
A. L. Moseley
W. E. McElderry, Princeton, Ind.
John F. Woods, Owensville, Ind.
Dr. F. L. Davis, 209 Dover St., Evansville
A. M. Williams, Evansville Press
L. P. Doarr, Howell, Ind., R. 9
Clarence A. Cook, Indianapolis
Robert J. Tracewell, Evansville, and son
Thomas L. Kerth, 910 Third Ave., Evansville
W. A. Graham, Enterprise
Carl J. Poll
C. F. Kale
C. F. Kleiderer, Henderson, Ky.
J. C. Haines, Lake
C. H. Baldwin, State Entomologist
Leo H. Fisher, Huntingburg, Ind.
Prof C. W. Matthews
Prof. Carmody
Mrs. J. W. Wilkinson
Mrs. Amy Norris
Miss Lottie Lee Mattingly
Anthony Dodds, Enterprise
Mr. and Mrs. J. C. Dodds
Mrs. Ed. J. Fehn
Miss Ollie Dilday
Mrs. Fred Elmendorf
Miss Halma May Dodds
Miss Laura Hostetter
E. E. Lockwood, Poseyville, Ind.
Mason J. Niblack
W. A. Taylor, Oaktown
Hugh C. Schmidt, Evansville
J. W. Strassell, Rockport, Ind.
Mrs. J. W. Strassell, Rockport, Ind.
Miss Helen Gentry, Rockport, Ind.
Chas. F. Hartmetz, Evansville, Ind.
Reporters

[Pg 133]

ANNUAL MEETING IN 1915

The following letter was sent to our members and some of our correspondents living in or near Rochester. The secretary would be pleased if every person who opens this volume at this page would read this letter and, having read, would make a note of it for action.

GEORGETOWN, CONN., September 10, 1914.

DEAR SIR:

Rochester, N. Y., is quite likely to be selected as the place for the next meeting of the Northern Nut Growers Association, and the Persian ("English") walnut as the subject for especial consideration.

There are many Persian walnut trees in Rochester and vicinity. Will you not bear in mind that we shall probably meet there and help to make the meeting a success? One way in which this can be done is to look up *now* any walnut trees, or other superior nut trees, observe their bearing and get their records and samples of the nuts, with photographs if desirable.

Another way to help is to talk about the association and this meeting to others and get them interested in the association and in reporting nuts.

Any assistance in making arrangements, or in providing attractions for the meeting will be most welcome.

I append a list of members and correspondents in and about Rochester. Mr. Olcott, the editor of

the *American Nut Journal*, will undoubtedly act as a central bureau for information and report.

Let us make this coming meeting go far toward settling some of the undecided points about the Persian walnut in the East.

Yours truly,

W. C. DEMING.
Secretary.

[Pg 134]

**Plant My Hardy Pennsylvania
Grown**

Budded and Grafted

**English Walnut
and Pecan Trees**

if you want to start right

You can't afford to experiment with trees of doubtful hardiness, neither do you want inferior varieties

My 1915 attractive Catalogue and Cultural Guide is yours for the asking

Address

J. F. JONES, The Nut Tree Specialist
LANCASTER ... PENNSYLVANIA

[Pg 135]

CHESTER VALLEY NURSERIES

ESTABLISHED 1853

Choice Fruit and Ornamental Trees, Cherry
Trees

on Mazzard Roots, Hardy Evergreens, Flowering
Shrubs, Hedge Plants, etc. Originators of the
THOMAS BLACK WALNUT

JOS. W. THOMAS & SONS, King of Prussia P.
O., Montgomery Co., Pa.

J. G. RUSH

**Propagator of
The Persian Walnut**

By Grafting and Budding on Black Walnut Stock
such Varieties as the NEBO,
HALL, HOLDEN, LANCASTER, FRANQUETTE,
MAYETTE, CUT LEAF, Etc.

Originator of "RUSH" PERSIAN WALNUT

WEST WILLOW, PA. (Lancaster County)

Vincennes Nurseries

PROPAGATORS OF

The Pecan
The Persian Walnut
The Hickory
The Chestnut
The Almond
The Hazelnut

SEND FOR OUR SPECIAL NUT CATALOGUE

Also offer a general line of Nursery Stock

W. C. REED,
Proprietor

VINCENNES
INDIANA

[Pg 136]

Plant Fruit Trees to Make Money

to carry your nut crops through. But your trees
to be profitable
must be right. I grow all my trees on first-class
roots,
cut all my buds from first class bearing trees. I
know they
are true to name and the best you can buy.
Apples, Pears,
Plums, Cherries on Mazzard roots.

Get Fraser's Tree Book Free.

SAMUEL FRASER 10 Main St., Geneseo, N.
Y.

PLANT TREES IN SOIL BLASTED WITH DU PONT

Red Cross Farm Powder

Blasting makes a wider, better feeding area for
growing roots,
permits greater water storage, forwards growth
of trees and
brings them into bearing earlier than trees set
in spade-dug
holes. Write for Free Booklet about how to blast
tree holes
with Red Cross Farm Powder.

DU PONT POWDER CO. Wilmington, Del.

Updated editions will replace the previous one—the old editions will be renamed.

Creating the works from print editions not protected by U.S. copyright law means that no one owns a United States copyright in these works, so the Foundation (and you!) can copy and distribute it in the United States without permission and without paying copyright royalties. Special rules, set forth in the General Terms of Use part of this license, apply to copying and distributing Project Gutenberg™ electronic works to protect the PROJECT GUTENBERG™ concept and trademark. Project Gutenberg is a registered trademark, and may not be used if you charge for an eBook, except by following the terms of the trademark license, including paying royalties for use of the Project Gutenberg trademark. If you do not charge anything for copies of this eBook, complying with the trademark license is very easy. You may use this eBook for nearly any purpose such as creation of derivative works, reports, performances and research. Project Gutenberg eBooks may be modified and printed and given away—you may do practically ANYTHING in the United States with eBooks not protected by U.S. copyright law. Redistribution is subject to the trademark license, especially commercial redistribution.

START: FULL LICENSE
THE FULL PROJECT GUTENBERG LICENSE
PLEASE READ THIS BEFORE YOU DISTRIBUTE OR USE THIS WORK

To protect the Project Gutenberg™ mission of promoting the free distribution of electronic works, by using or distributing this work (or any other work associated in any way with the phrase “Project Gutenberg”), you agree to comply with all the terms of the Full Project Gutenberg™ License available with this file or online at www.gutenberg.org/license.

Section 1. General Terms of Use and Redistributing Project Gutenberg™ electronic works

1.A. By reading or using any part of this Project Gutenberg™ electronic work, you indicate that you have read, understand, agree to and accept all the terms of this license and intellectual property (trademark/copyright) agreement. If you do not agree to abide by all the terms of this agreement, you must cease using and return or destroy all copies of Project Gutenberg™ electronic works in your possession. If you paid a fee for obtaining a copy of or access to a Project Gutenberg™ electronic work and you do not agree to be bound by the terms of this agreement, you may obtain a refund from the person or entity to whom you paid the fee as set forth in paragraph 1.E.8.

1.B. “Project Gutenberg” is a registered trademark. It may only be used on or associated in any way with an electronic work by people who agree to be bound by the terms of this agreement. There are a few things that you can do with most Project Gutenberg™ electronic works even without complying with the full terms of this agreement. See paragraph 1.C below. There are a lot of things you can do with Project Gutenberg™ electronic works if you follow the terms of this agreement and help preserve free future access to Project Gutenberg™ electronic works. See paragraph 1.E below.

1.C. The Project Gutenberg Literary Archive Foundation (“the Foundation” or PGLAF), owns a compilation copyright in the collection of Project Gutenberg™ electronic works. Nearly all the individual works in the collection are in the public domain in the United States. If an individual work is unprotected by copyright law in the United States and you are located in the United States, we do not claim a right to prevent you from copying, distributing, performing, displaying or creating derivative works based on the work as long as all references to Project Gutenberg are removed. Of course, we hope that you will support the Project Gutenberg™ mission of promoting free access to electronic works by freely sharing Project Gutenberg™ works in compliance with the terms of this agreement for keeping the Project Gutenberg™ name associated with the work. You can easily comply with the terms of this agreement by keeping this work in the same format with its attached full Project Gutenberg™ License when you share it without charge with others.

1.D. The copyright laws of the place where you are located also govern what you can do with this work. Copyright laws in most countries are in a constant state of change. If you are outside the United States, check the laws of your country in addition to the terms of this agreement before downloading, copying, displaying, performing, distributing or creating derivative works based on this work or any other Project Gutenberg™ work. The Foundation makes no representations concerning the copyright status of any work in any country other than the United States.

1.E. Unless you have removed all references to Project Gutenberg:

1.E.1. The following sentence, with active links to, or other immediate access to, the full Project Gutenberg™ License must appear prominently whenever any copy of a Project Gutenberg™ work (any work on which the phrase “Project Gutenberg” appears, or with

which the phrase “Project Gutenberg” is associated) is accessed, displayed, performed, viewed, copied or distributed:

This eBook is for the use of anyone anywhere in the United States and most other parts of the world at no cost and with almost no restrictions whatsoever. You may copy it, give it away or re-use it under the terms of the Project Gutenberg License included with this eBook or online at www.gutenberg.org. If you are not located in the United States, you will have to check the laws of the country where you are located before using this eBook.

1.E.2. If an individual Project Gutenberg™ electronic work is derived from texts not protected by U.S. copyright law (does not contain a notice indicating that it is posted with permission of the copyright holder), the work can be copied and distributed to anyone in the United States without paying any fees or charges. If you are redistributing or providing access to a work with the phrase “Project Gutenberg” associated with or appearing on the work, you must comply either with the requirements of paragraphs 1.E.1 through 1.E.7 or obtain permission for the use of the work and the Project Gutenberg™ trademark as set forth in paragraphs 1.E.8 or 1.E.9.

1.E.3. If an individual Project Gutenberg™ electronic work is posted with the permission of the copyright holder, your use and distribution must comply with both paragraphs 1.E.1 through 1.E.7 and any additional terms imposed by the copyright holder. Additional terms will be linked to the Project Gutenberg™ License for all works posted with the permission of the copyright holder found at the beginning of this work.

1.E.4. Do not unlink or detach or remove the full Project Gutenberg™ License terms from this work, or any files containing a part of this work or any other work associated with Project Gutenberg™.

1.E.5. Do not copy, display, perform, distribute or redistribute this electronic work, or any part of this electronic work, without prominently displaying the sentence set forth in paragraph 1.E.1 with active links or immediate access to the full terms of the Project Gutenberg™ License.

1.E.6. You may convert to and distribute this work in any binary, compressed, marked up, nonproprietary or proprietary form, including any word processing or hypertext form. However, if you provide access to or distribute copies of a Project Gutenberg™ work in a format other than “Plain Vanilla ASCII” or other format used in the official version posted on the official Project Gutenberg™ website (www.gutenberg.org), you must, at no additional cost, fee or expense to the user, provide a copy, a means of exporting a copy, or a means of obtaining a copy upon request, of the work in its original “Plain Vanilla ASCII” or other form. Any alternate format must include the full Project Gutenberg™ License as specified in paragraph 1.E.1.

1.E.7. Do not charge a fee for access to, viewing, displaying, performing, copying or distributing any Project Gutenberg™ works unless you comply with paragraph 1.E.8 or 1.E.9.

1.E.8. You may charge a reasonable fee for copies of or providing access to or distributing Project Gutenberg™ electronic works provided that:

- You pay a royalty fee of 20% of the gross profits you derive from the use of Project Gutenberg™ works calculated using the method you already use to calculate your applicable taxes. The fee is owed to the owner of the Project Gutenberg™ trademark, but he has agreed to donate royalties under this paragraph to the Project Gutenberg Literary Archive Foundation. Royalty payments must be paid within 60 days following each date on which you prepare (or are legally required to prepare) your periodic tax returns. Royalty payments should be clearly marked as such and sent to the Project Gutenberg Literary Archive Foundation at the address specified in Section 4, “Information about donations to the Project Gutenberg Literary Archive Foundation.”
- You provide a full refund of any money paid by a user who notifies you in writing (or by e-mail) within 30 days of receipt that s/he does not agree to the terms of the full Project Gutenberg™ License. You must require such a user to return or destroy all copies of the works possessed in a physical medium and discontinue all use of and all access to other copies of Project Gutenberg™ works.
- You provide, in accordance with paragraph 1.F.3, a full refund of any money paid for a work or a replacement copy, if a defect in the electronic work is discovered and reported to you within 90 days of receipt of the work.
- You comply with all other terms of this agreement for free distribution of Project Gutenberg™ works.

1.E.9. If you wish to charge a fee or distribute a Project Gutenberg™ electronic work or group of works on different terms than are set forth in this agreement, you must obtain permission in writing from the Project Gutenberg Literary Archive Foundation, the manager of the Project Gutenberg™ trademark. Contact the Foundation as set forth in Section 3

below.

1.F.

1.F.1. Project Gutenberg volunteers and employees expend considerable effort to identify, do copyright research on, transcribe and proofread works not protected by U.S. copyright law in creating the Project Gutenberg™ collection. Despite these efforts, Project Gutenberg™ electronic works, and the medium on which they may be stored, may contain “Defects,” such as, but not limited to, incomplete, inaccurate or corrupt data, transcription errors, a copyright or other intellectual property infringement, a defective or damaged disk or other medium, a computer virus, or computer codes that damage or cannot be read by your equipment.

1.F.2. LIMITED WARRANTY, DISCLAIMER OF DAMAGES - Except for the “Right of Replacement or Refund” described in paragraph 1.F.3, the Project Gutenberg Literary Archive Foundation, the owner of the Project Gutenberg™ trademark, and any other party distributing a Project Gutenberg™ electronic work under this agreement, disclaim all liability to you for damages, costs and expenses, including legal fees. YOU AGREE THAT YOU HAVE NO REMEDIES FOR NEGLIGENCE, STRICT LIABILITY, BREACH OF WARRANTY OR BREACH OF CONTRACT EXCEPT THOSE PROVIDED IN PARAGRAPH 1.F.3. YOU AGREE THAT THE FOUNDATION, THE TRADEMARK OWNER, AND ANY DISTRIBUTOR UNDER THIS AGREEMENT WILL NOT BE LIABLE TO YOU FOR ACTUAL, DIRECT, INDIRECT, CONSEQUENTIAL, PUNITIVE OR INCIDENTAL DAMAGES EVEN IF YOU GIVE NOTICE OF THE POSSIBILITY OF SUCH DAMAGE.

1.F.3. LIMITED RIGHT OF REPLACEMENT OR REFUND - If you discover a defect in this electronic work within 90 days of receiving it, you can receive a refund of the money (if any) you paid for it by sending a written explanation to the person you received the work from. If you received the work on a physical medium, you must return the medium with your written explanation. The person or entity that provided you with the defective work may elect to provide a replacement copy in lieu of a refund. If you received the work electronically, the person or entity providing it to you may choose to give you a second opportunity to receive the work electronically in lieu of a refund. If the second copy is also defective, you may demand a refund in writing without further opportunities to fix the problem.

1.F.4. Except for the limited right of replacement or refund set forth in paragraph 1.F.3, this work is provided to you ‘AS-IS’, WITH NO OTHER WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PURPOSE.

1.F.5. Some states do not allow disclaimers of certain implied warranties or the exclusion or limitation of certain types of damages. If any disclaimer or limitation set forth in this agreement violates the law of the state applicable to this agreement, the agreement shall be interpreted to make the maximum disclaimer or limitation permitted by the applicable state law. The invalidity or unenforceability of any provision of this agreement shall not void the remaining provisions.

1.F.6. INDEMNITY - You agree to indemnify and hold the Foundation, the trademark owner, any agent or employee of the Foundation, anyone providing copies of Project Gutenberg™ electronic works in accordance with this agreement, and any volunteers associated with the production, promotion and distribution of Project Gutenberg™ electronic works, harmless from all liability, costs and expenses, including legal fees, that arise directly or indirectly from any of the following which you do or cause to occur: (a) distribution of this or any Project Gutenberg™ work, (b) alteration, modification, or additions or deletions to any Project Gutenberg™ work, and (c) any Defect you cause.

Section 2. Information about the Mission of Project Gutenberg™

Project Gutenberg™ is synonymous with the free distribution of electronic works in formats readable by the widest variety of computers including obsolete, old, middle-aged and new computers. It exists because of the efforts of hundreds of volunteers and donations from people in all walks of life.

Volunteers and financial support to provide volunteers with the assistance they need are critical to reaching Project Gutenberg™’s goals and ensuring that the Project Gutenberg™ collection will remain freely available for generations to come. In 2001, the Project Gutenberg Literary Archive Foundation was created to provide a secure and permanent future for Project Gutenberg™ and future generations. To learn more about the Project Gutenberg Literary Archive Foundation and how your efforts and donations can help, see Sections 3 and 4 and the Foundation information page at www.gutenberg.org.

Section 3. Information about the Project Gutenberg Literary Archive Foundation

The Project Gutenberg Literary Archive Foundation is a non-profit 501(c)(3) educational corporation organized under the laws of the state of Mississippi and granted tax exempt

status by the Internal Revenue Service. The Foundation's EIN or federal tax identification number is 64-6221541. Contributions to the Project Gutenberg Literary Archive Foundation are tax deductible to the full extent permitted by U.S. federal laws and your state's laws.

The Foundation's business office is located at 809 North 1500 West, Salt Lake City, UT 84116, (801) 596-1887. Email contact links and up to date contact information can be found at the Foundation's website and official page at www.gutenberg.org/contact

Section 4. Information about Donations to the Project Gutenberg Literary Archive Foundation

Project Gutenberg™ depends upon and cannot survive without widespread public support and donations to carry out its mission of increasing the number of public domain and licensed works that can be freely distributed in machine-readable form accessible by the widest array of equipment including outdated equipment. Many small donations (\$1 to \$5,000) are particularly important to maintaining tax exempt status with the IRS.

The Foundation is committed to complying with the laws regulating charities and charitable donations in all 50 states of the United States. Compliance requirements are not uniform and it takes a considerable effort, much paperwork and many fees to meet and keep up with these requirements. We do not solicit donations in locations where we have not received written confirmation of compliance. To SEND DONATIONS or determine the status of compliance for any particular state visit www.gutenberg.org/donate.

While we cannot and do not solicit contributions from states where we have not met the solicitation requirements, we know of no prohibition against accepting unsolicited donations from donors in such states who approach us with offers to donate.

International donations are gratefully accepted, but we cannot make any statements concerning tax treatment of donations received from outside the United States. U.S. laws alone swamp our small staff.

Please check the Project Gutenberg web pages for current donation methods and addresses. Donations are accepted in a number of other ways including checks, online payments and credit card donations. To donate, please visit: www.gutenberg.org/donate

Section 5. General Information About Project Gutenberg™ electronic works

Professor Michael S. Hart was the originator of the Project Gutenberg™ concept of a library of electronic works that could be freely shared with anyone. For forty years, he produced and distributed Project Gutenberg™ eBooks with only a loose network of volunteer support.

Project Gutenberg™ eBooks are often created from several printed editions, all of which are confirmed as not protected by copyright in the U.S. unless a copyright notice is included. Thus, we do not necessarily keep eBooks in compliance with any particular paper edition.

Most people start at our website which has the main PG search facility: www.gutenberg.org.

This website includes information about Project Gutenberg™, including how to make donations to the Project Gutenberg Literary Archive Foundation, how to help produce our new eBooks, and how to subscribe to our email newsletter to hear about new eBooks.