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AMERICAN POMOLOGICAL SOCIETY.



PROCEEDINGS

OF THE

FIFTEENTH SESSION

OF THE

American Pomological Society

HELD IN

CHICAGO, ILLINOIS.

September 8th, 9th and 10th, 1875.

EDITED BY THE SECRETARY.

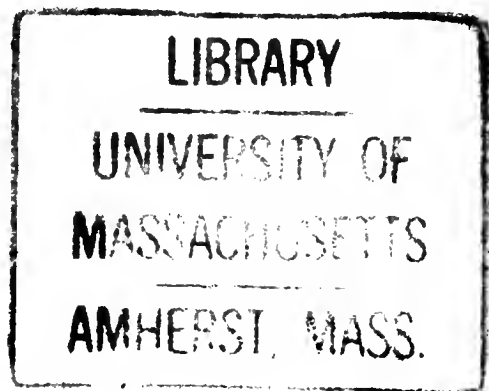
PUBLISHED BY THE SOCIETY.

1875.

MAPEI

“Thus we associate gardens and orchards with the perfect condition of mankind. Gardeners ourselves by birth-right, we also mythologize and plant our Edens in the east of us, like our ancestors; the sacredness of earth and heaven still clinging to the tiller of the ground. Him we esteem the pattern man, the most favored of any. His labors have a charming innocency. They yield the gains of a self-respect denied to other callings. His is an occupation friendly to every virtue; the freest of any from covetousness and deluding cares. It is full of honest profits, manly labors, and brings and administers all necessaries; gives the largest leisure for study and recreation, while it answers most tenderly the hospitalities of friendship and the claims of home. The delight of children, the pastime of women, the privilege of the poor man as it is the ornament of the gentleman, the praise of the scholar, the security of the citizen, it places man in his truest relations to the world in which he lives. And he who is insensible to these pleasures, must lack some chord in the harp of humanity, worshipping, if he worship, at some strange shrine.

Who loves a garden still his Eden keeps ;
Perennial pleasures plants, and wholesome harvests reaps.”—ALCOTT—TABLETS.



CIRCULAR.

AMERICAN POMOLOGICAL SOCIETY.

ORGANIZED 1848.

FIFTEENTH SESSION.

Whereas, The American Pomological Society has accepted the invitation of the Illinois Horticultural Society, to hold its next Biennial Session, in the City of Chicago, in 1875:—

Therefore, in conformity with said acceptance, the undersigned give notice that the Fifteenth Session of this National Association will be held in Chicago, commencing *Wednesday, September Eighth*, at 10 o'clock, A. M., and continuing for three days.

All Horticultural, Pomological, Agricultural, and other kindred associations, in the United States and British Provinces, are invited to send delegations, as large as they may deem expedient, and all persons interested in the cultivation of fruits, are invited to be present and take seats in the Convention.

The coming session will be especially interesting, from its location in the centre of the great fruit-growing region of the west, and it is believed, will be one of the most important and useful that the Society has ever held. On this occasion there will be brought together the best cultivators and fruits of our widely extended country, when may be examined and compared the fruits, not only of the cooler climes of the North, but the South, the West and the Pacific Slope. It is therefore very desirable that every State, Territory and Province of North America should be fully and ably represented in this Convention, thereby promoting the advancement of one of the great resources of our national wealth.—the extension and perpetuation of the amicable and social relations which have heretofore existed among the members of the Society,—and the diffusion throughout the land of our deliberations, for the benefit of our constantly expanding territory.

It is confidently hoped that there will be a full attendance of Delegates from all quarters of our country, thereby stimulating more extensive cultivation, by the concentrated information and experience of cultivators, and aiding the Society in perfecting its Catalogue of Fruits. This Catalogue includes fifty States and Territories, most of which have their columns filled with a great amount of information as to the fruit adapted for culture in the respective locations. Many of these are yet incomplete, and it is the object of the Society, from year to year, to fill the blanks, and bring its Catalogue nearer to perfection. To accomplish this object as fully as possible, the Chairman of the General Fruit Committee, P. BARRY, Esq., Rochester, N. Y., will send out the usual circulars of enquiry, and it is desirable that these enquiries should be answered at an early day. The various State and Local Committees are urged to respond to the circulars as soon as practicable.

When we reflect on the vast importance of the great industrial interest of fruit culture, not only in a pecuniary, but a sanitary point of view,—when we consider the new territories constantly opening for occupation, all of which are to be supplied with their appropriate varieties of fruit, and that upon this National Society, in a great measure, devolves the duty of ascertaining and promulgating what are adapted to each locality,—we feel justified in urging upon the Local Committees of every State and District, who are the means through which the desired information must be collected, the importance of an early and thorough discharge of that duty, by a prompt response to the circular of the Chairman of the General Fruit Committee.

This Society having already, at its last session, accepted the invitation to participate in the International Exhibition at the Centennial Celebration in Philadelphia, in 1876, it becomes necessary, at the

approaching meeting, to make all requisite preparation to carry out the arrangements for that occasion, in a manner which shall be alike honorable to the nation and useful to the great industrial interests which our society represents.

Arrangements will be made with Hotels, and as far as possible with the various railroad lines terminating in Chicago, for a reduction of fare. Wherever possible, it would be best that such arrangements should be made by the various delegations, with roads in their localities, as rates made by Chicago roads will apply only to their lines.

Members, Delegates, and Societies are requested to contribute collections of the Fruits of their respective districts, and to communicate in regard to them whatever may aid in promoting the objects of the Society and the science of the American Pomology. Each contributor is requested to prepare a complete list of his collection, and to present the same with his fruits, that a report of all the varieties entered may be submitted to the meeting as early as practicable. By vote of the Society no money premiums will be offered, but a limited number of Wilder Medals will be awarded to meritorious objects.

At the same time and place with the Pomological Society's Exhibition of Fruits, the Illinois Horticultural Society will hold a Grand Exhibition of Plants, Flowers, and other products of Horticulture, by which an increased interest will be given to the occasion.

Packages of Fruits, with the names of contributors, may be addressed as follows: "AMERICAN POMOLOGICAL SOCIETY," care of O. B. GALUSHA, Chicago.

All persons desirous of becoming members, can remit the fee to THOMAS P. JAMES, Esq., Treasurer, Cambridge, Mass. Life Membership, Twenty Dollars; Biennial, Four Dollars. Life Members will be supplied with back numbers of the proceedings of the Society as far as possible.

W. C. FLAGG, *Secretary*, Moro, Ill.

MARSHALL P. WILDER, *President*, Boston, Mass.

Newspapers and periodicals that take an interest in Pomology, are respectfully requested to publish the above.

The Secretary, for the purpose of securing a more complete statement of facts, solicits copies of all publications relating to Fruit and Fruit Growing in all the States, Territories, and Provinces of North America.

PROGRAMME OF BUSINESS.

HOURS OF MEETING.

WEDNESDAY, 10 o'clock in the morning, and 3 o'clock in the afternoon.

THURSDAY, 9 o'clock in the morning, and 3 o'clock in the afternoon.

FRIDAY, 9 o'clock in the morning, and 3 o'clock in the afternoon.

RULES FOR SPEAKING.—Five minutes, and no person to speak more than twice on the same subject without leave

WEDNESDAY, 10 A. M. Introductory Exercises; Appointment of Committees, viz: on Credentials, on Nomination of Officers, on Record of Fruits Exhibited, on award of the Wilder Medal.

3 P. M. President's Address; Reports of Committee on Credentials, and on Nomination of Officers; Election of Officers; Reception of Treasurer's Report; Discussion in regard to Preparation for International Exhibition of 1876, in Philadelphia, in which the Society has voted to participate.

THURSDAY, 9 A. M. Reports of Standing Committees; Discussion of the value of fruits enumerated in the catalogue, as indicated by stars, to be called by the Secretary, in alphabetical order, as follows: Apples, Pears, Grapes, etc., etc. At the close of each division, statements relative to new varieties will be received.

3 P. M. Continuation of the morning's session.

FRIDAY, 9 A. M. Reports of Committees on Fruits Exhibited; Reception of Essays; Continuation of discussion on values of fruits, as per catalogue, and introduction of names of new varieties.

3 P. M. Completion of Discussion, Resolutions, etc., Adjournment.

ESSAYS.

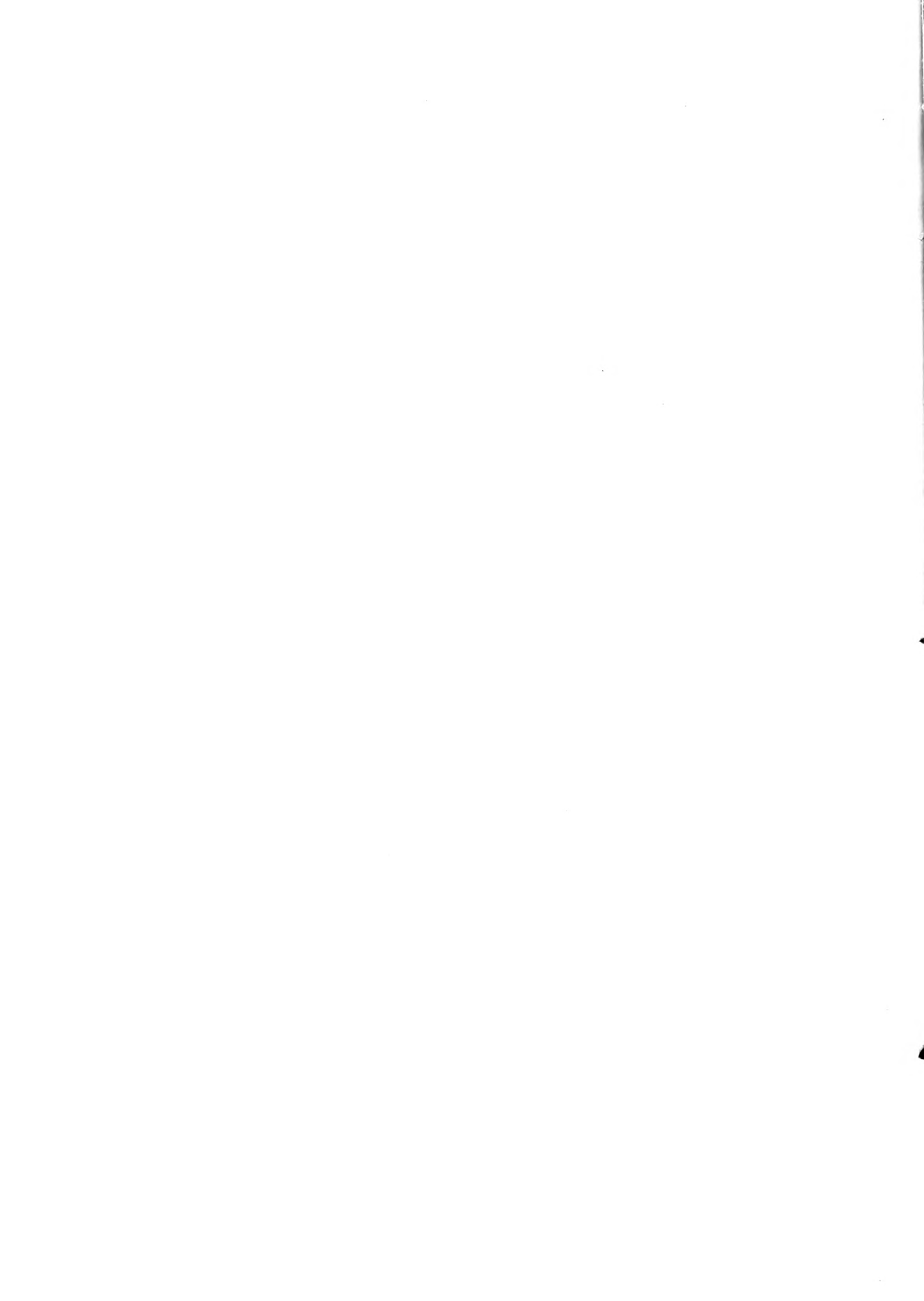
Invitations have been extended to the following named gentleman to prepare papers, as many as practicable of which will be read at the meeting :

Prof. ASA GRAY, of Massachusetts,	Dr. JOHN A. WARDER, of Ohio,
Prof. GEORGE THURBER, of New York,	Dr. C. C. HAMILTON, of Nova Scotia,
JOHN J. THOMAS, of New York,	G. F. B. LEIGHTON, of Virginia,
D. W. ADAMS, of Iowa,	D. REDMOND, of Mississippi,
T. T. LYON, of Michigan,	Dr. H. A. SWASEY, of Louisiana,
ROBERT W. FURNAS, of Nebraska,	GEORGE P. PEFFER, of Wisconsin,
Dr. WILLIAM M. HOWSLEY, of Kansas,	P. P. BISHOP, of Florida,
B. S. FOX, of California,	C. V. RILEY, of Missouri.

The subject of Mr. Lyon's paper will be "The Climate and Soils of Michigan, and their adaptation to the growth of finer varieties of Fruit;" Dr. Howsley's "The Confused Nomenclature of the Apple;" Mr. Fox's "The Production of New Varieties of Pears from Seed;" Ex-Gov. Furnas', "Fruit Culture in the West;" and Mr. Peffer's, "The Production of New Varieties of Fruit from Seed to Insure Hardiness;" but at this date the subjects of the other papers are not decided upon.

It is hoped also to have Reports and Essays from the following named persons, who were appointed or invited to prepare papers for the last session, but were unable to respond at that time, on the subjects then assigned to them :

- W. C. FLAGG, Illinois, Report on the Cause of "Rotten Root" of the Apple Tree in the West.
 WM. SAUNDERS, District of Columbia, Report on the Theory and Practice of Pruning.
 THOMAS MEDAN, Pennsylvania, on Fungi on Fruit, and Fruit Diseases, as Cause, Result, or Concomitants of one another.
 Dr. E. S. HULL, Illinois, on Root Pruning, and how to grow the fairest fruit.
 P. BARRY, New York, on How to Grow and Keep Pear trees in vigor and shape.
 ROBERT MANNING, Massachusetts, Is there a permanant decline in the Apple Tree and its Crop in New England?
 A. S. FULLER, New Jersey, on the Culture and Varieties of Small Fruits.
 WM. PARRY, New Jersey, on the Cultivation and Varieties of the Apricot and Plum.
 W. C. BARRY, New York, on the Keeping and Ripening of the Apple, Pear, and Grape.
 F. R. ELLIOTT, New York, on the Cherry.



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1875-7.

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<i>California</i>	B. S. FOX	San Jose.	<i>New Brunswick</i>	JUDGE WILMOT	Fredrickton.
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HARTMAN KUHN	Philadelphia	Pennsylvania.	JOSIAH STICKNEY	Watertown	Massachusetts.
C. C. LANGDON	Mobile	Alabama.	W. C. STRONG	Brighton	Massachusetts.
WILLIAM LAWTON	New Rochelle	New York.	J. M. STONE	Calhoun Station	Mississippi.
A. M. LAWVER	Colden	Illinois.	HOWARD SWINEFORD	Richmond	Virginia.
G. F. B. LEIGHTON	Norfolk	Virginia.	EDWARD P. TAFT	Providence	Rhode Island.
HENRY LITTLE	Boston	Massachusetts.	THOMAS TALBOT	Billerica	Massachusetts.
T. T. LYON	South Haven	Michigan.	EDWARD TATNALL	Wilmington	Delaware.
JAMES M. LYONS	Terre Haute	Indiana.	JOHN N. TAYLOR	Brooklyn	New York.
DAVID MACFERRON	Alleghany City	Pennsylvania.	DR. THOMAS TAYLOR	Washington, Dist. Columbia.	
WILLIAM R. MANN	Sharon	Massachusetts.	JOSEPH O. TAYLOR	Newport	Kentucky.
ROBERT MANNING	Salem	Massachusetts.	JOHN T. TEMPLE	Davenport	Iowa.
JAMES H. MASTERS	Nebraska City	Nebraska.	J. J. THOMAS	Union Springs	New York.
E. R. MILLER	Sugar Grove	Pennsylvania.	GEO. THURBER	New York	New York.
W. H. MILLS	Hamilton	Ontario.	WILLIAM B. TOWNE	Boston	Massachusetts.
J. E. MITCHELL	Philadelphia	Pennsylvania.	B. C. TOWNSEND	New York	New York.
J. M. McCULLOCH	Cincinnati	Ohio.	F. TROWBRIDGE	Milford	Connecticut.
HENRY McLAUGHLIN	Bangor	Maine.	GEO. R. UNDERHILL	Locus Valley	New York.
SILAS MOORE	Providence	Rhode Island.	JACOB VAN GELDER	Saugerties	New York.
HENRY T. MUDD	St. Louis	Missouri.	J. A. WARDER, M. D.	Cleves	Ohio.
D. O. MUNSON	Fall's Church	Virginia.	W. H. WARDELL	Boston	Massachusetts.
DAVID S. MYER	Bridgeville	Delaware.	WILLIAM WATSON	Brenham	Texas.
J. D. G. NELSON	Fort Wayne	Indiana.	D. B. WEIR	Lacon	Illinois.
J. S. NEWMAN	Sparta	Georgia.	AARON D. WELD	Boston	Massachusetts.
SAMUEL W. NOBLE	Jenkintown	Pennsylvania.	JESSE M. WELLBORN	Conyers	Georgia.
J. G. ORTON, M. D.	Binghamton	New York.	LEANDER WETHERELL	Boston	Massachusetts.
CHARLES OSBORNE	N. Vassalboro	Maine.	JOSEPH V. WHELAN	Montgomery	New York.
WILLIAM PARRY	Cinnaminson	New Jersey.	JOHN B. WHITEHEAD	Norfolk	Virginia.
R. B. PARSONS	Flushing, L. I.	New York.	CHAS. O. WHITMORE	Boston	Massachusetts.
WILLIAM PARSONS	Newton	Massachusetts.	JOHN WIELAND	Farmersville	Ohio.
JAMES M. PAUL	North Adams	Massachusetts.	EDWARD B. WILDER	Dorchester	Massachusetts.
SAMUEL R. PAYSON	Boston	Massachusetts.	MARSHALL P. WILDER	Dorchester	Massachusetts.
EDWARD D. PEARCE	Providence	Rhode Island.	MARSHALL P. WILDER, JR.	Dorchester	Massachusetts.
JOHN M. PEARSON	Godfrey	Illinois.	W. C. WILSON	Baltimore	Maryland.
SAMUEL P. PERLEY	Naples	Maine.	O. F. WINCHESTER	New Haven	Connecticut.
JONATHAN PERLIAM	Chicago	Illinois.	JOHN D. WOLFE	New York	New York.
R. PETERS	Atlanta	Georgia.	A. WORK	New York	New York.
F. K. PHOENIX	Bloomington	Illinois.	DR. A. P. WYLIE	Chester	South Carolina.
HENRY L. PIERCE	Boston	Massachusetts.	W. H. YEOMANS	Columbia	Connecticut.
WILLIAM A. PILE	St. Louis	Missouri.	J. M. W. YERRINGTON	Boston	Massachusetts.
J. PICKERING PUTNAM	Boston	Massachusetts.	JAMES YOUNGLOVE	Bowling Green	Kentucky.

Biennial.

WILLIAM ADAIR	Detroit	Michigan.	CHARLES Y. LACY	Minneapolis	Minnesota.
GEORGE G. ATWOOD	Geneva	New York.	J. W. MANNING	Reading	Massachusetts.
P. M. AUGER	Middlefield	Connecticut.	S. J. MATTHEWS	Monticello	Arkansas.
HELEN V. AUSTIN	Richmond	Indiana.	J. T. MAXWELL	Geneva	New York.
GEORGE BALDERSON	Colora	Maryland.	HENRY H. McAFFEE	Ames	Iowa.
JOHN BALDWIN	Newburgh	New York.	J. S. McCALLA	Philadelphia	Pennsylvania.
J. S. BEATTY	Simpsonville	Kentucky.	BYRON McKINSLEY	Grand Park	Illinois.
P. P. BISHOP	San Mateo	Florida.	TYLER McWHORTER	Aledo	Illinois.
W. D. BRACKENRIDGE	Govanstown	Maryland.	J. A. MENDENHALL	Richmond	Indiana.
G. B. BRACKETT	Denmark	Iowa.	C. C. MILLER	Marengo	Illinois.
WILLIAM BROOKSBANK	Hudson	New York.	S. G. MINKLER	Oswego	Illinois.
CHARLES E. BROWN	Yarmouth	Nova Scotia.	EDWARD M. MOODY	Lockport	New York.
L. R. BRYANT	Princeton	Illinois.	ELISHA MOODY	Lockport	New York.
REV. ROBERT BURNET	Hamilton	Ontario.	JOSIAH NEWHALL	Lynnfield	Massachusetts.
ISIDOR BUSH	Bushburg	Missouri.	N. OIMER	Dayton	Ohio.
S. E. CHAMBERLIN	Waterford	Virginia.	EZRA A. OSBORN	Middletown	New Jersey.
S. H. COLTON	Worcester	Massachusetts.	J. Y. PARCE	Fairport	New York.
WILLIAM W. CONOVER, JR.	Red Bank	New Jersey.	G. C. PENNIMAN	St. Michaels	Maryland.
S. V. COTTA	Lanark	Illinois.	FRANK PEAVY	Detroit	Michigan.
M. S. COOK	Avondale	Pennsylvania.	GEORGE P. PEPPER	Pewaukee	Wisconsin.
S. S. CURTIS	Paris	Illinois.	D. L. S. PENNINGTON	Sterling	Illinois.
FRANKLIN DAIR	Bridgeton	New Jersey.	JAMES PENTLAND	Baltimore	Maryland.
EDWARD DANIELS	Acotink	Virginia.	F. K. PHOENIX	Bloomington	Illinois.
H. A. DELAND	Fairport	New York.	D. J. PIPER	Foreston	Illinois.
DANIEL S. DEWEY	Hartford	Connecticut.	REV. E. P. POWELL	Chicago	Illinois.
MERTON DUNLAP	Paxton	Illinois.	PROF. A. N. PRETISS	Ithaca	New York.
WILLIAM H. EARLE	Worcester	Massachusetts.	A. M. PURDY	Rochester	New York.
SAMUEL EDWARDS, SCH.	Princeton	Illinois.	J. W. PYLE	Willowdale	Pennsylvania.
WYMAN ELLIOT	Minneapolis	Minnesota.	R. S. RAGAN	Greencastle	Indiana.
A. FAHNESTOCK	Toledo	Ohio.	J. G. RAMSBELL	Travers City	Michigan.
H. H. FARLEY	Union Springs	New York.	DR. D. REDMOND	Ocean Springs	Mississippi.
W. L. FERRIS	Newburgh	New York.	S. S. RICHIE	New Paris	Ohio.
HENRY FIELD	Red Bank	New Jersey.	JAMES H. RICKETS	Newburgh	New York.
SUEL FOSTER	Muscataine	Iowa.	PROF. C. V. RILEY	St. Louis	Missouri.
HENRY F. FRENCH	Concord	Massachusetts.	JAMES A. ROOT	Skaneateles	New York.
REV. A. FURNAS	Danville	Indiana.	JOHN W. ROSEMOUNT	Gadsden	Tennessee.
J. R. GASTON	Normal	Illinois.	JOHN SAUL	Washington, Dist.	Columbia.
JOSEPH GILBERT	Terre Haute	Indiana.	WILLIAM L. SCHAFER	Philadelphia	Pennsylvania.
E. P. GOULD	Rochester	New York.	WILLIAM SCHLEY	Savannah	Georgia.
C. C. GRAVES	Sandwich	Illinois.	ISAAC SNEDECKER	Jerseyville	Illinois.
J. H. GREGG	Nebraska City	Nebraska.	WILLIAM H. SPOONER	Boston	Massachusetts.
DR. C. C. HAMILTON	Cornwallis	Nova Scotia.	J. N. STEARNS	Kalamazoo	Michigan.
A. W. HARRISON	Philadelphia	Pennsylvania.	JAMES S. STICKNEY	Wauwatosa	Wisconsin.
J. J. HARRISON	Painesville	Ohio.	J. B. STOREY	Middletown	New Jersey.
DR. GEORGE HASKELL	Ancoia	New Jersey.	DR. E. WARE SYLVESTER	Lyons	New York.
EDMUND HATHAWAY	Damascus	Illinois.	GEORGE B. THOMAS	West Chester	Pennsylvania.
PARIZADE HATHAWAY	Damascus	Illinois.	JOHN H. TICE	St. Louis	Missouri.
FREDERICK HAYDEN	Alton	Illinois.	B. F. TRANSOR	Humboldt	Tennessee.
W. F. HEIKES	Dayton	Ohio.	T. HELLMAN TROTH	Acotink	Virginia.
AUGUST HOEN	Baltimore	Maryland.	WALTER VAIL	Newburgh	New York.
H. E. HOOKER	Rochester	New York.	J. C. VAUGHAN	Chicago	Illinois.
WILLIAM HOWE	North Salem	New York.	H. K. VICKROY	Normal	Illinois.
STEPHEN HOYT	New Canaan	Connecticut.	C. L. WATROFS	Des Moines	Iowa.
DR. E. S. HULL	Alton	Illinois.	MORTIMER WHITEHEAD	Middle Bush	New Jersey.
DR. A. G. HUMPHREY	Galesburg	Illinois.	EDWARD WHITNEY	Boston	Massachusetts.
I. E. ILGENFRITZ	Monroe	Michigan.	S. D. WILLARD	Geneva	New York.
THOMAS P. JAMES	Cambridge	Massachusetts.	SAMUEL WOODLEY	Hamilton	Ontario.
SYLVESTER JOHNSTON	Irvington	Indiana.	T. B. YALE	Rochester	New York.
J. B. JONES	Rochester	New York.	GODFREY ZIMMERMAN	Buffalo	New York.

PROCEEDINGS
OF THE
AMERICAN POMOLOGICAL SOCIETY.
1875.

FIRST DAY—MORNING SESSION.

CHICAGO, ILL., September 8th, 1875.

In pursuance of the announcement in its circular, the American Pomological Society was called to order by its President, the Honorable MARSHALL P. WILDER, at 10 o'clock A. M., in the Ladies' Ordinary of the Grand Pacific Hotel, with the following remarks:

GENTLEMEN:—It affords me great gratification to witness the assembling of so many of the representatives of American Pomology, here in this great centre for the distribution of the fruits and products of the West, and here to consult together for the advancement of one of the most important industrial pursuits of our land. In behalf of the American Pomological Society, and in my own behalf, I extend to each one of you our most cordial salutations. Gentlemen, you are welcome; and I confidently trust that our present meeting will result, not only in great good to ourselves, but will redound to the honor of our nation and the welfare of mankind.

The President then introduced Dr. HULL, President of the Illinois Horticultural Society, who spoke as follows:

Mr. President, Ladies and Gentlemen of the Pomological Society:—I esteem it a great privilege to meet you here to-day, and in behalf of the Illinois State Horticultural Society, to extend to you a cordial welcome to the Prairie State. Coming, as you do, from almost every part of our great country and from the Provinces, and placing in contrast, as you have done, the horticultural products of your skill, you enable us at a glance, as it were, to learn what varieties succeed over the widest area of country, and the regions in which each variety naturally succeeds best: also to comprehend more clearly the magnitude and nature of the work in which you are engaged.

With respect to the principles of horticulture, our people have much to learn; but we doubt not your deliberations and discussions will tend, in a good degree, to clear up matters of which we are in doubt, and spread abroad knowledge useful to all.

Ladies and gentlemen, again let me say, in my own behalf, but especially in behalf of those I have the honor to represent, that we fully appreciate your labors, and are glad that so many are able to assemble with us. And we hope your stay amongst us will be so agreeable to you that you will, at no distant day, desire to meet with us again.

In response to the remarks of Dr. Hull, President WILDER spoke as follows:

Mr. President:—In behalf of the American Pomological Society, I return you our sincere thanks for the kind welcome you have extended to us, and for the ample provisions you have secured for our accommodation. We are most happy to be here at the invitation of the Illinois State Horticultural Society, and

to consult with our Western friends for the advancement of our favorite work, which already constitutes one of the most important industries of the country. Our Society embraces within its fold, as you have appropriately remarked, not only the States and Territories of this great republic, but also of the British Dominion on our borders. Its influence and usefulness have been constantly increasing, and its work is one of great magnitude, being no less than that of designating, by its catalogue, the fruits which are adapted to the various climates and latitudes of our widely extended land.

When we reflect upon the great advantages which have already resulted to our country and the world by the action of our Society and kindred associations, the many new and choice varieties of fruits which it has approved and recommended for cultivation, the time and money which it has saved by the published lists of rejected and useless varieties, the zeal which it has awakened, and the information it has disseminated, we have abundant cause for encouragement, and may look forward to greater future achievements and usefulness.

Seldom has the power of association been more forcibly exemplified than in the history of this Society. But, sir, we come not only to compare our fruits and our opinions with those of the West, but also to promote a friendly intercourse between the representatives of the different sections of our land, whereby a communion of interest shall be established that shall yield richer fruits than the earth can give, the fruits of peace, friendship and union.

I trust, Mr. President, that our convention may result in good, not only to your people, but in enlarging the boundaries of human knowledge, adding to the enjoyments of civilized life, and extending the blessings of our art throughout our beloved land. I will refrain from further remarks, hoping that you and the members of your Society will honor us with your presence and take seats in our convention.

Pending the arrival of the register of the Society, the President stated that persons desiring to become members of the Association could do so by paying to the Treasurer \$20, which would entitle them to such published proceedings of the Society as are not out of print.

Dr. Hull said that arrangements had been made for the free admission of members to the Inter-State Industrial Exposition: tickets to be procured from the Secretary or Treasurer.

The next half hour was occupied in receiving credentials and in admitting new members.

Dr. Benjamin F. Edwards, of St. Louis, the oldest member of the Society present, was called out by President Wilder, who presented himself and was found to be a stout, hale old Kentuckian of seventy-nine.

The Secretary then announced the following committees, as having been appointed by the chair:

COMMITTEES.

Credentials.—Dr. C. C. Hamilton, of Nova Scotia; J. T. Allan, Nebraska; B. F. Transon, Tennessee; W. B. Towne, New Hampshire; A. W. Harrison, Pennsylvania.

Nominations.—P. Barry, New York; P. M. Augur, Connecticut; John Saul, District of Columbia; P. P. Bishop, Florida; P. J. Berekmans, Georgia; Isaac Snedecker, Illinois; Joseph Gilbert, Indiana; Z. Hollingsworth, Iowa; William Tamer, Kansas; J. S. Beatty, Kentucky; Col. Rountree, Louisiana; G. B. Sawyer, Maine; W. D. Brackenridge, Maryland; Benjamin G. Smith, Massachusetts; J. E. Inglefritz, Michigan; Wyman Elliott, Minnesota; D. Redmond, Mississippi; B. F. Edwards, Missouri; J. Sterling Morton, Nebraska; W. B. Towne, New Hampshire; A. M. Purdy, New York; Benjamin B. Hance, New Jersey; A. H. Johnson, Nova Scotia; John A. Warder, Ohio; Charles Gibb, Quebec; John W. Rosemount, Tennessee; Col. Edward Daniels, Virginia; H. M. Thompson, Wisconsin; and Col. Chamberlin, West Virginia.

Records of Fruits.—J. J. Maxwell, New York; D. Redmond, Mississippi; Parker Earle, Illinois; Hervey Davis, Massachusetts; George B. Thomas, Pennsylvania.

Award of Wilder Medal.—John A. Warder, Ohio; P. J. Berekmans, Georgia; Robert Manning, Massachusetts; Isaac Buchanan, New York; J. H. Masters, Nebraska.

The Society then adjourned until 3 o'clock P. M.

FIRST DAY—AFTERNOON SESSION.



At three o'clock the Society was again called to order, and listened to the

ADDRESS OF THE HON. MARSHALL P. WILDER.



Gentlemen of the Society:—We assemble here at the invitation of the Illinois State Horticultural Society, to whom and to the Inter-State Industrial Exposition, we tender our grateful obligations for their courtesy and the arrangements made for our accommodation.

Twenty-seven years have taken their flight since the organization of our Association. Many of those who assisted in its formation rest from their labors; but some of them are here to rejoice with us to-day in its progress, prosperity and usefulness. Our Society still lives in a fresh and vigorous manhood, and we are permitted once more to assemble for the promotion of the objects so dear to its founders and so essential to the welfare, not only of our common country, but of all mankind. Like all other associations and enterprises, it has had to pass through its years of pupillage before it could arrive at its present state of knowledge; but it has now attained to manhood, and is able to act with an energy and enterprise which give promise of long life and still greater usefulness. It has celebrated the first Quarter-centennial of its history, and now awaits a fuller and more glorious development of the benevolent purposes for which it was established.

Gentlemen, your presence in such goodly numbers affords me the highest gratification and encouragement. I am most happy to meet so many of our Western cultivators, whose personal acquaintance I shall be glad to make; and I am especially pleased to recognize many whose names are honored for the contributions they have made to the cause of science, and will be cherished as long as merit shall be appreciated and worthy deeds command the gratitude of mankind. This is as it should be; and, coming as we do from distant and different sections of our extended country, embracing almost every variety of soil and clime, we are enabled in a short time to accomplish much, in comparing the effect of temperature and other climatic influences on the fruits of our different localities, and, by our record of experience, to decide on the kinds suited to our various districts, and thus build up the science of American Pomology.

Our Society has held its meetings in the various quarters of our country—East, West, North and South, and now it assembles for the first time in this great commercial center of the West. It has been extending its jurisdiction and influence with every session, until it embraces the whole Union, and the Provinces of Great Britain that lie on our borders. It has officers and local committees in all these sections of our land, and has assumed the vast work of designating fruits which are found to be congenial to the various soils and temperatures of fifty states and districts that are named on its catalogue. When we consider that these results have been secured without governmental aid or public patronage, and simply by voluntary association; and how long it has taken old and richly endowed institutions to make their influence felt on the world, it is a matter of surprise that our Association should have impressed its importance so deeply, not only on the minds of our people, but on the nations of the Old World. How distinctly do we now see the wisdom and foresight which prompted the founders of this Society in the formation of a national institution, whose example should be followed by the nations of Europe, for the promotion of the same science.

The fruit culture of America has surprised the world. Like the genius and invention which characterize this nation in other arts, it has taken its stand as the forerunner and herald of a new era in the history of pomology. Yet, gentlemen, we have scarcely entered on the vast field which we are to occupy. We have but just seen the dawning light of our science which is yet to illumine this great Western World. True, we have planted our ensign in almost every section of the country, we have stationed our

pioneers from the Atlantic to the Pacific, from the Lakes to the Gulf, and have gathered into our fold the most experienced and enterprising cultivators of this country, and we have already produced many native fruits, which are not surpassed by those of foreign climes. But when we reflect that our country is constantly expanding and increasing in its territory and population, to which no human foresight can fix a limit, we see the grandeur and importance of our work.

The progress of fruit culture is especially evinced by the improved methods of cultivation, the high standard for quality, the great quantities of fruits now sent to market, the improved methods of packing and the increased facilities for transportation, not only to all parts of our land, but for foreign exportation, so that at this writing two thousand and four hundred baskets of peaches are on the way to England, by steamship, for a market.

Nor is this progress confined to the fruits of our Northern clime. This interest and enterprise has exerted a powerful stimulus in the Southern, South-western and Pacific States, not only in the culture of the grape and other Northern fruits, but of the orange, the olive, almond and fig for commercial purposes, which, as a national society, we are bound to include in our sphere of action. How great would have been our surprise if we had been told at the formation of this Society, that, at its Quarter-centennial celebration, magnificent oranges and lemons would grace the exhibition from Mississippi and California, and still more strange should we have thought the prophecy, that the latter State would have groves and plantations of the orange to the extent of hundreds of acres at the present time; or what would have been thought of the interest now manifested in Florida and the Southern States, giving promise of a great future for the culture of semi-tropical fruits in America. Within a few years a new zeal has sprung up for the culture of these precious fruits, which gives hopes of a development of resources that may rival those of the most favored foreign climes. Already thousands of acres have been assigned for the culture of these fruits, which cannot fail ultimately to become valuable, subject only to the losses which always occur in the beginning of a new enterprise from want of experience on the part of too sanguine operators.

But what shall we say of the grape, now multiplied into hundreds of varieties, some of which are suited to every portion of our land. Many present can remember the time when the Isabella, Catawba and Scuppernon, were the principal varieties in cultivation, and when not a seed had been sown for the production of a new variety. Now, millions of seeds are sown, and from these thousands of new and varied offspring arise, some of which are constantly taking their places on our catalogue. Instead of two or three varieties, as in former years, we have the collections of Ricketts, Bush, Campbell, Moore and others, containing a hundred varieties or more, and from which, in all probability, some valuable kinds are in time to be added to our list for cultivation in some section of our country. Nor should I omit the wonderful fact, that within the borders of these United States may be produced in amazing abundance, every variety of grape known to foreign climes, and from which, ere long, may also arise native varieties of equal quality and adaptation to the soils of our Western coast. In the words of Prof. Gray, "A good time is coming for the grape. New varieties can be produced so easily that they will have achieved their position when the American Pomological Society holds its Centennial celebration."

Nor is there any reason to doubt that, as with the pear and other fruits, new varieties of the orange, lemon, almond, olive and fig, may be produced of equal or better quality than any we now possess, and adapted to a still wider space of territory. Of the fig and the raisin as articles of commerce, Dr. Strentzel, our chairman of the Fruit Committee for California, writes, that a wide field is opening on the Pacific coast, and we believe that both these and the orange will be greatly increased in the extent of their cultivation and general use. The total yield of raisins in California last year, was estimated at four hundred tons, valued at nearly eighty thousand dollars.

Have you ever, my friends, thought of the significance of the phrase "American Pomology," a phrase till lately unknown among us. Think how recently the fields which now furnish the majority of fruits were the abodes of the red man in the forest-wild, and look for a moment on the contrast. What a grand display of our annual product of fruits! What mountainous heaps of apples, pears and grapes! What millions of baskets of peaches and strawberries! And yet how limited the product when compared with the harvest of that measureless breadth of acres which are to be covered in the future with these fruits. How emphatically do these point to that important part which our Association is to play in the development of the fruit resources of this continent, and in helping on the grand end of human

happiness. Gratifying and wonderful as our progress has been, it is but as a glimpse of the morning compared with the noon-day glory, when these rich gifts of Providence to our favored land shall have arrived at their full development. The grain and other manifestations of material wealth with which our country abounds, are the reserved stock upon which the nations of the Old World rely to meet the insufficiency of their own crops; and the time will arrive when the fruits of our land, now becoming so popular in foreign markets, will be required by the imperative demand for these products, and without which the comforts and happiness of life would be greatly reduced. It is, therefore, our duty as benefactors of mankind, to develop these immense resources of our country, and to increase our fruits to their fullest extent; so that from our Eastern to our Western shores they may be distributed in abundance, not only to the wealthy, but to all classes, as a part of their daily food. The trees we plant live to bless the world and enrich the inheritance of our children long after we are laid beneath them; and, with the return of each successive season, to shed their fragrance on the air and crown with golden fruits the harvest of the year. Nor are these blessings only for a day or an hour.

" Another crop the following year supplies,—
They fall successive and successive rise."

MISSION AND IMPORTANCE OF THE SOCIETY.

Gentlemen:—I have often addressed you on the importance and mission of this Society, and I was inclined to refrain from further remarks on this subject; but the more I reflect on it the more am I impressed with the imperative obligations which rest on us to do what we can in our day and generation for advancing its great interest. In the providence of God our Society has been made the leader of pomological progress on this continent.

" There is a tide in the affairs of men,
Which, taken at the flood, leads on to fortune."

and there is a tide in the affairs of institutions as well as of individuals. We seem to live in a peculiarly favorable period for the promotion of our art. When we consider that our Society was the first national institution of the kind, and that its example has been followed in so many other nations, we may take it for granted that the methods which we have used are the best for the acquisition and the diffusion of knowledge on this subject. These considerations impress us with the importance of our work, and the duty to develop, on the virgin soil of this Western Continent, the wonderful resources which have for long ages lain hidden in the arcana of pomology. Nor is it singular or strange that they should have remained thus unknown, for Providence puts it into the hearts of men to work together for the advancement of his grand designs by the development of the resources he has kept in store to ameliorate the condition and increase the happiness of his children, no faster than the age is prepared to receive a more refined and higher civilization. Thus was it in the discovery of this country, with its vast agricultural and mineral resources; thus in the declaration of its independence as an asylum for the oppressed of the world, and thus in giving us the illustrious men who have led the way in the march of civilization which characterizes the age in which we live.

" That every blessing may be ours
Which Providence has given,
To every land and clime beneath
The canopy of Heaven."

Thus he gave us Columbus and Vesputius, Franklin and Morse, Washington and Lincoln; and thus he gave us, not less efficient in their spheres, Coxe and Prince, Buel and Thomas, Dearborn and Manning, Downing and Brincklé, and Kennicott, and others who now live for the promotion of American Pomology, and with them the assurance that he will raise up those who shall carry on the work when we are gone.

Standing then, as we do to-day, in this great commercial city, which, but a few years ago had only a beginning—looking down the Atlantic slope and stretching our vision over to the Pacific coast, and from the Lakes to the Gulf, and embracing within our recollection the entire history of the pomology which has made our nation so renowned, who does not feel a desire to aid in its promotion throughout the whole domain. For myself, I yearn that my life may be prolonged to witness its further advancement; and,

should I be called to depart, I pray the good Lord that he will make me a ministering angel to earth, so that I may still witness its growth. Permit me to say that I esteem more the privilege of having been a co-laborer in this most beneficent work than in any other with which I have been connected; and I appreciate more highly the favor of the official position with which you have so long honored me than that of any other which has been conferred on me during a somewhat protracted life of public and private service. Pardon me, gentlemen, for these personal allusions; but when I reflect that this is but the youth of this Society, and contemplate what its maturity will be; when I reflect upon the blessings which have resulted from the labors of its members, when I contemplate the happiness that it is to confer on future generations when our vast territory shall be peopled by an enterprising population, elevated in the arts and refinements of life, my heart rises in gratitude to the Giver of all good that he has permitted me to be a humble co-worker in what has already been accomplished by the diffusion of our precious fruits—far more precious than all the gems that have come down through a long line of monarchs.

THE PUBLISHED VOLUMES OF PROCEEDINGS.

And here let me acknowledge the great aid which has been rendered to our association by the co-operation of the press and the agricultural, horticultural and other kindred institutions so numerous in our land, most of which have taken an interest in our work and the growth of our Association. Thus the concentrated efforts of a thousand societies and thousands of experimenters are uniting their efforts with ours, and through us are urging on the good work, and making the published proceedings of this Society, as they ever should be, the acknowledged pomological authority of the land. Let me state for the information of our recent members, that these have been regularly published from the organization of the Society, and comprise, in a condensed form, a mass of information on the pomology of this country and the adaptation or non-adaptation of fruits to its several localities, such as is nowhere else to be found.

Few are aware of the time and labor which have been expended on these volumes in preparing them for publication. They embrace the life work and the concentrated wisdom of a generation of the wisest and most experienced cultivators of our own times. In the language of our worthy friend, Mr. John J. Thomas, "*No other similar institution has attempted so much as this Society, and no other has accomplished so much.*" Into these volumes this information is condensed so that not only the people of the whole country but those of foreign lands can avail themselves of it. Formerly these were published in octavo, but the last two are in quarto form, and constitute, as I have before remarked, a pomological library in themselves. Especially is this the case with our Catalogue of Fruits, embracing, as it does, columns for fifty different States and districts, into which are compacted the lists of fruits for each. These States are grouped into divisions, somewhat similar in climate, and other characteristics affecting their culture, the names of the fruits being all classified and arranged in alphabetic order, with their synonyms, and with marks indicating their value for each section of our country.

The General Chairman of the Fruit Committee, Mr. Patrick Barry, is constantly in correspondence with the various State and local committees in regard to the merits of the fruits which come under their notice, thus establishing the value of each, so as to secure approved lists of the different species of fruits cultivated in this country. Nor should it be forgotten that all these services have been rendered without any pecuniary compensation to our officers, except to a secretary for a few years. And here let me express our obligations to Mr. Henry T. Williams, secretary *pro tem* at the session of 1873, for his liberality in tendering the sum which would have been his due for his services in the compilation of our last volume of proceedings, and also to our secretary, the Hon. W. C. Flagg, for the general interest in the welfare of the Society, which prompted him to decline the usual salary; so that the services of all officers are now rendered gratuitously. Especially to be remembered with gratitude are the faithful and efficient services of our treasurer, Dr. Thomas P. James, who, from the organization of the Society, has performed the duties of the office without any other recompense than the satisfaction to be found in their conscientious discharge. Our funds, being all derived from membership, have never been abundant, and some incidental sums have been occasionally paid to keep a balance in the treasury; but, were they more abundant, they would materially assist in promoting the objects of the Society, and the dissemination of its publications; and permit me to say, that no better disposition can be made of this world's goods than to give a portion to our Society, so that its bureau might be in constant working order, with ability to distribute its publications throughout the country.

In this connection, I think it proper to state, that one example worthy of imitation now exists in the generous intentions embodied in a will, already executed, by which the American Pomological Society is to receive ten thousand dollars at the decease of the generous deviser, which we hope may be far in the future. Let others go and do likewise!

NOMENCLATURE AND SYNONYMY.

Allow me to call your attention for a moment to the importance of a correct nomenclature for our fruits. This was one of the objects for which this Society was instituted. This is still its manifest duty, and should not be neglected. Much has been effected in this respect by the unwearied labors of the Committee on our Catalogue, as well as by the writers of papers on the synonymy and nomenclature of particular varieties, which have been published in our proceedings. Besides these, we have the investigations of Manning, Downing, Thomas, Barry, Hovey, Wender, Berekmans, Elliot, and others who have devoted long lives to clearing up the confusion which existed in the nomenclature of our fruits, and whose efforts have, to a great extent, been crowned with success. We are aware of the difficulty of changing long established names, which, though erroneous, have almost acquired a hereditary claim to use; but, as a proof that it is not impossible, we may mention the White Doyenne pear, which, when this Society was instituted, was known in New York as the Virgalien, in Boston as the St. Michael, and in Philadelphia as the Butter pear, to say nothing of its thirty European synonyms, but now, through the persevering labors of pomologists, is known throughout this country, as well as in Europe, by one standard name. The report of our Committee on this subject, presented at our last session by the chairman, Mr. Thomas, is a step in the right direction, and should be followed up, particularly by such investigations of the history and synonymy of popular varieties as the elaborate papers presented by Dr. Howsley at the session of 1871. Let us all cooperate in these laudable efforts, and we shall ere long make the nomenclature of our fruits as correct as that of any of the other sciences.

The importance of a correct nomenclature will be appreciated by those who recollect the many efforts to procure the "true Beurre Spence pear," and the many disappointments from the reception of worthless varieties for it, before it was discovered that the pear which Van Mons extolled so highly under this name was no more nor less than the Flemish Beauty. Had we known that the variety so long sought was one which we already possessed, we should have been spared a world of trouble and expense and disappointment.

AMERICAN FRUITS.

And now, for a moment, permit me to call your attention to the consideration of the question, "How shall we obtain varieties of fruits which may be adapted to the various latitudes of our immense territory?"

The great loss sustained in the importation and trials of trees from foreign shores, and even from different quarters of our own country, which are not adapted to our own location, suggests the answer that new varieties must be produced from seed, and to the manor born, to remedy this evil.

The adaptation of plants to various climates, and their distribution over the earth, involves a study so profound that few have any definite knowledge on the subject. Why some are suited, by their constitution, to a wide extent of territory, and are able to adapt themselves to almost any altitude or latitude or temperature without material change, while others are confined to a narrow limit, and will not prosper elsewhere; or why a fruit may succeed in one location, and a few miles distant fail entirely; why some are aquatic, and some thrive in arid soils, while others are parasitic, are mysteries which mankind has not yet been able to solve. The human constitution will frequently endure the change of country and climate; but the extent to which plants can bear these changes is fixed by an immutable law; therefore, all attempts to acclimate such as are not naturally congenial will fail in the end, except it be within very narrow limits,—not, however, that a tree or plant may not sometimes endure greater degrees of cold or heat than it is subject to in its native climate; but no one should suppose that time will produce a physiological or constitutional change in them.

It is, however, sufficient for us to know that we can produce from seed, fruits, which, by their constitution and habits, are capable of enduring the cold and heat, the drought and moisture, and other vicissitudes of the region we inhabit; but the idea that we can accustom a tree or plant to conditions not consistent with its laws of being, is a chimera of the imagination. The only acclimation that we can rely

on for obtaining trees and plants of stronger constitution is the production of new varieties from seed hybridized by the hand of man, or naturally cross-fertilized by insects or the air. Whatever opinions may have been entertained, to this we must come at last, that, for the acquisition of hardy, valuable fruits, adapted to the various locations of our vast territory, we must depend mainly on the production from seed. Thus I have discoursed to you for many years.—thus have I promised to do while I live.

Much has already been accomplished by the production of new varieties of American fruits from seed, but how little compared with the results obtained in other lands by the art of hybridization in the vegetable kingdom. To this art we are mainly indebted for the numerous fine varieties of grains, vegetables and flowers introduced in our own time, and the same success will reward similar efforts to produce new and valuable fruits suited to our own climes. Says Prof. Gray, in his admirable essay at our last session: "Most of our esteemed and important fruits have not so much been given to man, as made by him, and man's work in this respect is mainly to direct the course, or tendency, of nature." The success which has attended the American florist in the production of new and fine varieties of the camellia, the rose, and other plants, which rival the choicest varieties of the Old World, is indeed remarkable, and it will be far greater when the same scientific knowledge is applied to the production of native fruits.

The laws which govern the procreation of species by cross-impregnation are now so well understood by those who have scientific knowledge as to leave no doubt of success. Thus, the farmer as well as the florist is producing results which, as to form, habit, color, proportion and beauty, surprise the operator himself, when he sees how kindly nature co-operates with his efforts to bring forth the object of his desires. There may be disappointments,—these are the lot of humanity,—but the philosophical principle is correct, and the results of practice are now universally acknowledged: and although the improvement sought for may not be realized in every instance, experience has taught us that it will come at last. But my object is to encourage our cultivators in the belief that, by the sowing of the seeds of our best varieties, and by cross impregnation, there is a wide field open for improvement, and that all other attempts at acclimation are fruitless. And have you ever thought, my friends, of the many fine fruits which you might have raised by the sowing of seeds which you have carelessly thrown away? Not that I would discourage the planting and proving of the new varieties from other regions, holding fast such as are suited: and where they do not succeed in one location, it is possible they may be adapted to another. This is especially true with regard to the varieties of the strawberry. While one cultivator cannot grow the variety bearing my name, another declares he will grow no other: and thus with the Hovey's Seedling, which, after forty-two years of existence, has this year carried off the highest prize offered by the Massachusetts Horticultural Society for the strawberry.

LATE-KEEPING FRUITS.

The disposition now so generally manifested for the production of very early fruits, is commendable so far as it tends to the extension of the season, but when we take into account the very perishable character of these, it becomes a matter worthy of consideration whether our efforts might not be more profitably applied to the production of those which shall prolong the season of fruits into the late fall and winter months: for as population increases and civilization advances, so will these fruits be considered as among the necessities of food for all who have the means to purchase them. The demand for late fruits for exportation has now become general, and large quantities are sent, not only to England, but in our ice ships to warmer climes, where they are more and more demanded for constant use. In view of these facts, it becomes a matter of importance to increase the number of our choice, late-keeping fruits, not only for our own market, but for foreign demand.

Heretofore there has seemed a want of taste in the community for late pears, shown by the sudden falling off in the demand for this fruit immediately on the setting-in of cold weather, but it is my belief that a taste for them will grow—indeed is already growing up. Most of the very late varieties of pears which we now possess are of medium quality, and we think ourselves fortunate if we can ripen them to even a half-melting texture, and it should be our aim in the improvement of this fruit to produce varieties as fine in quality and texture as the autumn kinds, and possessing the property of keeping through the winter without the aid of special appliances. The want of taste for winter pears is owing, to a great extent, to the want of knowledge by the public generally of the existence of fine varieties ripening at the season of the *Beurre d'Anjou*, *Lawrence*, *Winter Nelis* and *Dana's Hovey*.

There is little fear of overstocking the market with very choice, late-keeping apples or pears, for just in proportion as the refinements of life and cultivated taste are appreciated, so will these bounties of nature become, as in the beginning, first among the charms of Eden, first among the luxuries of life. I am happy to say that the bequest to this Society, which I have already mentioned, has distinct reference to the production of late varieties of fruit.

INSECT DEPREDACTIONS.

But the non-adaptation of fruits to our several localities is not the only difficulty we have to contend with. When we reflect upon the alarming increase of noxious insects, and the loss of untold millions of the productions of our country by their ravages on our crops, it becomes a matter of grave interest that the pomologist should be ever ready to contend with this host of vile creation. These pests will probably continue to afflict mankind in the future as in the past, for their kingdom is established throughout the earth. "It extends," says Harris, "from the torrid zone to the utmost limits of polar vegetation, and from the lowest valley to the mountainous regions of perpetual snow." And as our friend, Dr. Hull, the president of the Illinois State Horticultural Society, has truly said, "just in proportion as you increase improved fruits, just in that proportion will fruit insects increase with you." The wonder, therefore, is not that they are permitted to exert their baneful influence on this fair world, but that mankind are so neglectful of efforts for their destruction.

The Almighty gave us dominion not only over the fish of the sea, the fowl of the air, and the cattle, but "over every creeping thing that creepeth upon the earth," and yet we allow them to become our masters. One thing is certain, our duty is to overcome them as we would any other evil, nor tire in our efforts, unless we are willing to admit that insects are more powerful than men. It is estimated by Prof. Riley, that the damage done by insects within the limits of our country is not less than three hundred millions of dollars annually, and that Napoleon, at the summit of his prosperity, never inflicted more damage on a nation than the liliputian insect army inflicts on the United States; and well does he remark, "If an enemy were to cause a small part of the injury which results each year from the depredations of even one of our insect enemies the whole country would resound with a clamor for the suppression of the invaders." We have learned how to conquer the potato beetle, the caterpillar and curculio, the canker and currant worms, the aphid and red spider, and the rose slug; we can prevent the depredations of the borer and the codling moth, and may we not yet hope to devise means to prevent the terrible scourge of the grasshopper in the West, and the phylloxera on our vines. Indomitable perseverance is the price of reward in the acquisition of noble ends, and this is especially true in regard to the culture of fruits.

Accustomed, as we are, to the canker worm in Massachusetts, we as generally protect our orchards from its ravages as we do our fields from the invasion of cattle: the efforts of Ellwanger & Barry, Dr. Hull and others, are crowned with an annual crop of plums, by a little care, at the proper time, in shaking of the trees and picking up of the dropping fruit: the canker worm is prevented by the application of tar and oil, or printer's ink for a few weeks: the caterpillar by the use of the hand or brush for a few hours: and the borer by a few moment's examination: and these examples are illustrations of the principles which I would enforce, and of what may be done; and were we to fail in this, it is through neglect of the means which have been placed in our hands.

"Thus God delights to teach this lesson ever,
That our success depends on our endeavor."

The study of entomology, as teaching us the habits of insects, both useful and injurious, is of the highest importance, in connection with the culture of plants and fruits. And we therefore rejoice in the spirit of enterprise which has of late been awakened on this subject. Were we to be told that there was no method to prevent the depredations of insects, we should lie down in despair; but we do little better, while we do nothing to prevent them, and if men would give their minds to the subject, most of the evils of which we complain might be prevented.

NECROLOGY.

While we rejoice in the prosperity, usefulness and example of this Society, let us remember with gratitude the services of those departed friends who have labored with us for its promotion, that their names may have a place in our records as benefactors of mankind. At our last session it was my sad duty to

add to our necrological report the decease of three associates, who had held the office of Vice-President of this Society; and now, although Providence has spared the lives of others who have held official position, I have to add the names of three more who have passed the dark river, over whose waves none return.

Hon. Joseph Sebastian Cabot, of Salem, Mass., died June 29th, 1874. Mr. Cabot was one of our oldest and most respected members, having occupied various official positions, both in this Society and in the community in which he lived. He was a graduate of Harvard College, Mayor of Salem, President of the Asiatic Bank, and for several years President of the Massachusetts Horticultural Society. He was early devoted to horticultural pursuits, and for a long time particularly interested in fruit-culture, having produced the Cabot and other pears from seed. For many years he was a Vice-President of this Society, and, as Chairman of Committee on Rejected Fruits, made the report in 1858, whereby more than six hundred varieties were rejected as unworthy of general cultivation. Mr. Cabot discharged all the duties of life with marked ability and unimpeached integrity.

Mark Miller, of Des Moines, Iowa, died April 16th, 1874. He was born in Peterborough, N. H., and ever had a most grateful regard for his native State. He was ardently devoted to the cause of fruit-culture in the West, and at the time of his death was Chairman of the Fruit Committee for Iowa, which office he had held for many years. While living in Wisconsin, he was correspondent of "The Wisconsin Farmer," and after his removal to Iowa, he edited and published "The Iowa Homestead." In the latter years of his life he was editor of "The Western Pomologist," which absorbed "The Western Gardener," and at the time of his death was Western corresponding editor of "The Horticulturist." He was modest and unassuming in his manners, eminently a working man, and deeply interested in the welfare of the American Pomological Society. Mr. Miller had been in ill health for several months, but by extraordinary effort he made up a large collection of apples, and placed them on our tables at Boston, as he had done at our session in Richmond, in 1869, where Iowa received the first prize for apples. Many will remember the enterprise and interest which he manifested in these collections, which received special commendation. His death was a severe loss, both to Western pomology and to this Society.

Hon. Matthias L. Dunlap, of Champaign, Illinois, who died on the 14th of February, 1875, was Chairman of the Fruit Committee for Illinois from 1858 to 1869. He was distinguished for great energy and enterprise, and was highly respected for his integrity. He was widely known throughout the Northwest for the ability and devotion with which he sought to give instruction in agriculture, having commenced as a correspondent of "The Prairie Farmer," and afterward edited "The Illinois Farmer." Later he became still more widely known as the agricultural correspondent of "The Chicago Tribune," over the signature of "Rural." He was deeply interested in rural improvement and the development of the West, and was respected and loved by all who knew him.

In this connection I think it proper also to allude to the recent death of a distinguished friend of our cause, Chevalier André Leroy, of Angers, France, which occurred on the 23d of last July, at the age of seventy-four years. Though living in a foreign land, he was known to many of us personally, and to a large circle of friends in the intercourse of trade. His nurseries were among the most extensive in Europe, and from them more fruit-trees have probably been sent to the United States than from any other establishment. His "Dictionnaire de Pomologie," in five royal octavo volumes, is a most elaborate work, and will cause him to be long remembered by the pomologists of the world. His desire to visit this country and witness its progress in pomology, was often expressed; and, in a letter to me, as late as last June, he remarks, "I am always astonished at the progress of pomology and horticulture in your country."

THE CENTENNIAL OF THE REPUBLIC.

It will be remembered that our Society has already accepted an invitation to participate in the Grand Centennial Celebration of our nation's independence, at Philadelphia next year, for which we must now make preparations. It will be the most glorious epoch in modern history, being no less than a centennial celebration of the only great nation on earth, which will then have completed a century of free and independent political existence. On that occasion we shall meet not only the representatives of the States and Territories of this great republic, but the representatives of other nations from all quarters of the globe, to exchange cordial greetings on the triumphs of civilization and the blessings of freedom, which have made this nation the wonder and admiration of mankind. Here will be brought together, in friendly

competition, the genius, skill and industries; the products of the soil, the mines and the manufactories of nations, and amidst all, in the grand nave of the temple of agriculture, the fruits of this continent are to be placed, as jewels set by Pomona on the bosom of Ceres.

And now that we are in the midst of these days of centennial celebrations, I am reminded of our own Quarter-centennial at Boston two years since, when the representatives of thirty States, Districts and Territories came up with their fruits to rejoice together in the progress and prosperity of our Society. It was an occasion long to be remembered by us of the East; nor shall I ever forget the hour when we received the welcome of Boston, in the Old Cradle of Liberty, whose hallowed walls had so often resounded to the call of patriotism and duty; nor when we stood up in that bower of flowers and beauty and grace, made glad with the thousand voices of friendly greeting. Pardon me, friends, for this digression; but when I reflect that it was my fortune to stand by the cradle of our Society at its birth, and that many of its god-fathers were there to join in these festivities, I could but remember with gratitude that I had been permitted to witness the glory of this latter day, and in the fulness of joy, after twenty-five years of service, the feeling would arise, let me depart; I die content. But no, no, the better, second thought was, let me live on, let me live to witness the further development of our vast national resources, and the influence of those great principles of human right which have made this nation what it is.

CONCLUSION.

In all this progress of civilization, influence and power, the American Pomological Society is to take a part. What a field of research and promise is open before us! What a vast enterprise to fill our ever-expanding area with fruits suited to our various climes! What a noble and benevolent work, to furnish the luscious fruits of earth for future generations! This is our work; this the mission of our Society! Let us fulfil it! And let us console ourselves with the thought that, long after we shall have been gathered to our fathers, the results of our labors, like the dews of heaven, which continue to refresh the earth, shall be gratefully remembered by the millions that are to follow us. Work on, then, my brethren, work on, persevere to the end, and as surely as the sun shall shine and the rain descend, so surely shall your labors be crowned by a harvest of glorious fruits for mankind.

I hail with joy the steady, onward progress of our National Society, not only for the contributions which it is making to the material wealth of our nation and the happiness of our fellow-men, but for the many indications which it gives of perpetual friendship between the numerous and distant States and Territories of our jurisdiction; a friendship which, we believe, shall grow stronger and stronger, dearer and dearer, by common memories of the past, common interests of the present, and common hopes of the future; a friendship which shall unite us in effort, in affection and in destiny, now and forever.

The Committee on Credentials asked for further time, and were given until 9 o'clock to-morrow to complete their report.

The Committee on Nominations reported nominations for the offices of President, most of the Vice-Presidents, Treasurer, Secretary and Executive Committee; and on motion, Dr. E. S. Hull gave the ballot of the Society for the nominations. The officers elect are as given heretofore.

The President expressed his gratitude for the honor of a re-election. He said that he really did desire to be re-elected this year, in order that he might assist in the coming Centennial Celebration as the President of this Association.

The Treasurer, Mr. Thomas P. James, presented his report, showing that there was a balance on hand at the last meeting of \$294.07. The receipts during the past two years had been \$2,042.41, and the expenditures \$1,864.85, leaving a balance on hand of \$471.56.

CENTENNIAL EXHIBITION.

The following letter was read for the information of the Society.

PHILADELPHIA, August 31st, 1875.

HON. M. P. WILDER:

SIR:—As chairman of the "Committee on Fruits" of the Advisory Committee to the Bureau of Agriculture, International Exhibition, I address you in reference to the forthcoming Pomological Convention at Chicago.

The pressing duties of my post, I regret, will not permit me to accept your invitation to meet the Convention on that occasion, and I take this method of saying to you what I should then say, had I the opportunity.

I am authorized to announce that the Centennial Commission will afford every facility in its power for the display of Pomological products. A section of the Agricultural Hall will be set aside for the exhibition of fruits, which it is expected will, in varying degree, extend throughout the entire period from May 10th until November 10th.

The Advisory Committee of the Bureau of Agriculture is composed of twenty gentlemen of rural technical abilities. They realize the importance of their position, and will give their aid in securing and providing for the fullest display of meritorious objects in every branch of husbandry.

On the Advisory Committee, Pomology has three representatives: Hon. M. P. Wilder, Dr. John A. Warder and P. J. Berckmans, Esq. From that Committee the Bureau will, at all times, be pleased to receive such suggestions as it may think proper to communicate.

The gentlemen of your committee are eminently competent to perceive the points upon which advice may be useful, and are requested to confer with each other, and report to the Bureau, that publication may be made of such arrangements as are finally decided upon: as for example, mode of classification for premiums, and special rules pertaining to the Pomological Exhibition.

I request that you and your associates on the Pomological Committee, of the Advisory Board, consider yourselves as the official representatives of the Bureau of Agriculture at the meeting of the convention.

Perhaps the Convention may consider the expediency of appointing local committees, whose duties it shall be to create interest in the display, to stimulate the tardy in forwarding specimens of fruit from their respective sections, and advance generally the interests of Pomology.

Such committees could address directly this Department whenever they had facts to communicate or desired information.

Yours respectfully,

BURNET LANDRETH,

Chief of Bureau.

Mr. Barry, of New York, expressed the opinion that the object and interest of Pomological Society would not be promoted by attempting to hold a meeting at Philadelphia during the Centennial. He was, therefore, opposed to such a meeting; but hoped that the members, individually, would do all in their power, in their respective States and districts, to secure such a display of fruits and horticultural products at the Centennial Exposition as would be creditable to the country.

The President coincided in general with Mr. Barry. He could not see at present how the Society could act as a body.

Mr. Pentland, of Maryland, moved that a committee of three be appointed to report to-morrow upon the matter of centennial coöperation.

Dr. Warder, of Ohio, wanted the letter which had been read to go to the committee.

Mr. Towne, of New Hampshire, was inclined to leave the whole business to the Advisory Committee of the Agricultural Department of the Exposition, of which the President, Dr. Warder and Mr. Berckmans were members; there was not time to look up the matter fully now.

Mr. Hovey, of Massachusetts, thought we had better go no further in the matter.

Mr. Pentland withdrew his motion.

The President said they had agreed to hold a Special Session at Philadelphia. It had been expected to have one gala week which should be regarded as the grand national week for the exhibition of fruit.

Mr. Barry thought it not for the interest of the Society to hold a special session at Philadelphia next year. Attaching ourselves to another exhibition had always worked a failure. He made a motion to rescind the past action of the Society in reference to meeting at Philadelphia next year.

Mr. Meehan suggested that a committee on the part of the Pennsylvania Horticultural Society had been appointed to wait on this Society, and would arrive by morning. So, after a little further discussion, the subject was tabled.

INVITATION TO VISIT SOUTH PARK.

The following invitation was laid before the Society by the President. It was accepted with thanks, and the Secretary instructed to arrange with the Commissioners if practicable, upon a later hour.

OFFICE OF SOUTH PARK COMMISSIONERS, CHICAGO, SEPT. 8TH, 1875.

Hon. Marshall P. Wilder, President American Pomological Association:

DEAR SIR:—The South Park Commissioners cordially invite the American Pomological Association, through you, to visit the South Parks and Boulevards to-morrow afternoon.

Carriages will be in attendance at the Grand Pacific Hotel at three o'clock P. M. to-morrow.

I have the honor to be very respectfully yours,

H. W. HARMON, *Secretary.*

REPORTS OF COMMITTEES

Report of Committee on Credentials.

The Committee on Credentials having examined the several documents and papers placed in our hands, beg leave to report the following named gentlemen, most of whom are present, as delegates from the several Societies and Associations representing the States and Territories, and Provinces of Canada.

C. C. HAMILTON,	} Committee.
J. T. ALLAN,	
B. F. TRANSOU,	
W. B. TOWNE,	
W. M. PARRY.	

FROM NATIONAL ORGANIZATIONS—*National Grange Patrons of Husbandry*—Dudley W. Adams, of Waukon, Iowa.

CONNECTICUT—*From State Board of Agriculture*—Daniel Young, Nathan Hart and P. M. Angur. *From Hartford County Horticultural Society*—D. S. Dewey and E. S. Dewey.

DISTRICT COLUMBIA—*From Potomac Fruit Growers Association*—Chalkley Gillingham, President, and John Saul, E. P. Howland, Edward Daniels, D. O. Munson, Q. H. Gray, George Gross, A. J. Reynolds, Hamitt N. Nute, A. J. Bell, J. L. McKee, P. H. Troth, D. S. Curtiss, P. H. Falsom, Charles Chamberlain, Samuel Patterson. *From Department of Agriculture*—J. B. Russell.

FLORIDA—*From Florida Fruit Growers Association*—P. B. Bishop, President.

GEORGIA—*From State Agricultural Society*—P. J. Berckmans.

ILLINOIS—*From Illinois State Horticultural Society*—E. S. Hull, L. K. Scofield, O. B. Galusha, T. Butterworth, A. G. Humphrey, J. E. Starr, Jonathan Periam, Parker Earle, W. C. Flagg, Isaac Baldwin, T. J. Burrill, Robert Douglas, H. D. Emery, J. R. Gaston, A. C. Hammond, R. W. Hunt, B. N. McKinstry, Tyler McWhorter, W. T. Nelson, F. K. Phoenix, J. W. Robison, D. W. Scott, Isaac Snedeker, A. R. Whitney, D. B. Wier, L. R. Bryant. *From Illinois State Farmers' Association*—Lewiss Ellsworth, Jonathan Periam, Nathaniel Vose, Thos. McD. Richards, Edmund Hathaway, Samuel Edwards, W. T. Nelson, Martin Dunlap, L. F. Ross, A. C. Hammond, John Stewart, J. B. Turner, F. K.

Phoenix, J. B. Phinney, Edward Roessler, M. M. Horton, A. A. Hilliard, F. A. E. Holcomb, A. M. Sturman. *Galesburg Horticultural Society*—A. G. Humphrey, J. P. Hale, S. V. N. Standish, R. W. Hunt. *Jacksonville Horticultural Society*—Isaac Baldwin. *Warsaw Horticultural Society*—A. C. Hammond, C. F. Darnell. *Alton Horticultural Society*—E. S. Hull, James E. Starr, Isaac Snedeker.

INDIANA—*Indiana Horticultural Society*—Dr. A. Furnas, Danville; W. A. Ragan, Clayton; Joseph Gilbert, Terre Haute; Joseph C. Ratliff, Richmond; E. Y. Teas, Richmond; Charles Lowder, Plainfield; S. Johnson, Irvington; R. S. Ragan. *Richmond Horticultural Association*—S. S. Ritchie, Miss Helen V. Austin.

IOWA—*Iowa State Horticultural Society*—James Smith, Z. Hollingsworth, C. L. Watrous, Suel Foster, Z. E. Ennis, J. L. Budd, G. B. Brackett. *Iowa Agricultural College*—Prof. H. B. McAfee.

KENTUCKY—*Kentucky Horticultural Society*—J. S. Beatty.

LOUISIANA—*Fruit Growers Association of the Gulf States*—A. W. Rountree.

MAINE—*Maine Pomological Society*—G. B. Sawyer, Secretary.

MARYLAND—*Maryland Horticultural Society*—William D. Brackenridge, James Pentland, August Hoen, Geo. Balderston.

MASSACHUSETTS—*Massachusetts Horticultural Society*—Marshall P. Wilder, Thomas P. James, C. M. Hovey, Robert Manning, James W. Clark, George Sparhawk, Edward Whitney, E. H. Luke, W. B. Towne, Hervey Davis, Benj. G. Smith, Edward Kendall, Geo. F. Kendall, George D. Chamberlain, Wm. Parsons, Henry F. French, J. W. Manning, E. W. Buswell, W. H. Spooner, I. H. Frothingham, Chas. C. Hamilton, L. F. Mellen. *Worcester County Horticultural Society*—O. B. Hadwen, President, Sam'l H. Colton, Wm. H. Earle. *Cambridge Horticultural Society*—C. M. Hovey, Benj. G. Smith, E. H. Luke, Edward Kendall, George D. Chamberlain. *Essex Institute, Salem*—Robert Manning.

MICHIGAN—*Michigan Pomological Society*.—Delegation appointed by the Society jointly with the Governor. T. T. Lyon, South Haven; J.

Sterling, Morton; J. G. Ramsdell, Traverse; J. E. Ilgenfritz, Monroe; E. S. Reynolds, Monroe; W. J. Beal, Lansing; H. E. Bidwell, South Haven; Edward Bradfield, Ada; H. Dale Adams, Kalamazoo; P. C. Davis, Kalamazoo.

MINNESOTA—*State Horticultural Society*.—Truman M. Smith, St. Paul; C. T. Lacy, Minneapolis; Wyman Elliot, Minneapolis; J. S. Harris, La Crescent.

MISSISSIPPI—*Fruit Growers' Association of the Gulf States*.—J. M. Stone, Dennis Redmond.

MISSOURI—*Missouri State Horticultural Society*.—Professor C. V. Riley, Dr. B. F. Edwards, Isidor Bush. *Missouri State Grange*.—C. V. Riley.

NEBRASKA—*Nebraska State Horticultural Society*.—J. H. Masters, Nebraska City; J. T. Allan, Omaha, President; J. H. Gregg, Nebraska City; E. N. Grenel, Fort Calhoun; Gov. R. W. Furnas, D. H. Wheeler, J. S. Morton.

NEW HAMPSHIRE—*Hillsborough County Agricultural and Mechanical Society and Nashua Horticultural Society*.—W. B. Towne.

NEW JERSEY—*New Jersey State Horticultural Society*.—George Thurber, E. Williams, P. T. Quinn, Newark, T. G. Levett, M. Whitehead, Dr. Geo. Haskill, Charles Parry, Benjamin B. Hance, Elmathan T. Field, Henry Field, Wm. W. Conover, Jr., E. A. Osborn, John B. Story, William Parry.

NEW YORK—*Newburg Bay Horticultural Society*.—J. Baldwin, Wm. L. Ferris, Jr., Benj. B. Hance, James H. Ricketts, John F. Vanchert, Geo. Dennison, H. Lamont, David Belknap, H. B. Stewart, Jas. I. Vandelalpon, David Belknap, H. B. Stuart, J. S. Dueden. *Western New York Horticultural Society*.—J. B. Jones, E. Moody, Edward M. Moody, J. B. Yale, Wm. Smith, S. S. Graves, George G. Atwood, Geo. S. Conover, C. L. Hoag, J. S. Maxwell, S. D. Willard, John Smith, W. H. Farris, G. Zimmerman, George Ellwanger, H. H. Farley, A. M. Purdy, E. Ware Sylvester, P. Barry. *Cornell University*.—Prof. A. N. Prentiss. *Geneva Horticultural Society*.—Wm. Smith, S. S. Graves, George Atwood, George S. Conover.

NOVA SCOTIA—*Fruit Growers' Association of Nova Scotia*.—Chas. C. Hamilton, President; A. H. Johnston.

OHIO—*Ohio Horticultural Society*.—John A. Warder, G. W. Campbell, H. Ohmer, J. W. Ross, A. Fahnestock.

PENNSYLVANIA—*Pennsylvania Horticultural Society*.—W. L. Schaffer, President; A. W. Harrison, Secretary; William Parry, John S. Haines, Thomas

Meehan, Robert Buist, Robert Cornelius, W. T. Dreer, C. H. Duhring, Wm. Hacker, Chas. P. Hayes, Josiah Hoopes, Dr. J. S. Houghton, B. Landreth, J. T. Mather, Thos. Meehan, Chas. H. Miller, S. W. Noble, Isaac C. Price, E. Satterthwaite, Richard Wright. *Experimental Farm Club*.—George Balderston.

QUEBEC—*Fruit Growers' Association of Abbotsford*.—Charles Gibb.

TENNESSEE—*West Tennessee Fruit Growers' Association*.—B. F. Transon, J. W. Rosemount.

VIRGINIA—Col. Edward Daniels, Gunston Hall, Accotink Fairfield.

WEST VIRGINIA—*Catoctin Farmers' Club*.—Col. S. E. Chamberlain.

WISCONSIN—*State Horticultural Society*.—H. M. Thompson, St. Francis, J. C. Plumb, Milton.

Letters and telegrams expressing regrets were received from C. C. Langdon, of Alabama; S. J. Matthews, of Arkansas; John Strentzel, of California; E. B. Crew, of Dakota; Walter L. Steele, of North Carolina; Rubert Burnet, of Ontario; William Watson, of Brenham; J. E. Johnson, of Utah; Bartlett Bryant, of Vermont, and others, making twenty-eight States, Territories and Provinces represented in person, and nine more by correspondence. Total 37.

Revision of Catalogue Report.

Mr. Barry, Chairman of the General Fruit Committee, made the following report from the Committee on Revision of Catalogue, which was received, and the Committee given further time to complete their report.

To the President and Members of the American Pomological Society:

GENTLEMEN:—Your Committee on the Revision of the Society's Catalogue would respectfully report that all the changes recommended in the State reports of last year were carefully made in the Catalogue before it was printed. It now contains:

Two hundred and sixty varieties of Apples.
 Ten varieties of Grabs.
 Ninety-five varieties of Pears.
 Sixty-nine varieties of Peaches.
 Fifty-seven varieties of Plums.
 Thirty-eight varieties of Cherries.
 Six varieties of Nectarines.
 Ten varieties of Apricots.
 Four varieties of Blackberries.
 Eight varieties of Gooseberries.

Twenty-two varieties of Raspberries.
 Twenty-four varieties of Strawberries.
 Thirteen varieties of Currants.
 Thirty-eight varieties of Native Grapes.
 Thirty-three varieties of Foreign Grapes.
 Five varieties of Oranges and Lemons.
 Four varieties of Quinces.

There will doubtless be many additions and changes made at every session, as new varieties continue to be brought forward and old ones fail or change in value.

It is one of those works which must be always making progress but will never be perfect. It is a work, too, requiring a great deal of labor, more than any of us, who are so busy with our own affairs, can give it. But it is a work of great value, as has been fully recognized, not only at home, but in foreign countries, and it is hoped and believed that there will always be men enough in this Society to carry it along and keep it fully up with the progress of the times.

To bring together in such a condensed, and yet such an intelligent form, all the best fruits of this immense country, with indications of their relative value and the State or section in which each succeeds best, seemed at first scarcely possible, but your Committee think its possibility has been fully demonstrated.

The plan works well and it only remains to correct and revise from session to session as experience may suggest.

P. BARRY.

For the Committee.

Mr. Ellwanger handed in the

Report of the Committee on Foreign Fruits.

Although a good many new varieties of Foreign Fruits, some of which possess considerable merit, have come under the observation of your Committee, since the last session of the Society, they require further trial in order to report upon them intelligently and correctly.

In order to bring some varieties previously reported upon more prominently before you, it has occurred to us that a review of such as have proved particularly valuable, after several years fruiting, would not be amiss.

It is only by several years fruiting that the value of a variety can be satisfactorily determined; and collecting, fruiting, and investigating the new varieties by comparison with well known and popular sorts, is a matter that involves time and labor.

There are but few men in this country who have made the fruiting and testing of new varieties a study and pleasure, hence it is more difficult to get at a satisfactory result.

So many new varieties are constantly sent out in Europe, particularly Pears in France, with highly colored descriptions, that the pomologist is tempted to try most of them; the greater part of these are of little value, and if five per cent. meet our expectations and prove in all respects first rate, we may consider ourselves well rewarded.

The comparatively new varieties of Foreign Fruits to which we would call your attention in this brief report as having proved highly valuable are the following:

CHERRIES.

Large Montmorency (Montmorency Ordinaire).—This is no doubt one of the finest red acid Cherries in cultivation, ripening about a week after the *Early Richmond*. The tree is a great bearer and very hardy; fruit of good size and fine flavor, of a shining red color. When better known this will become a very popular variety.

Nouvelle Royal.—Tree vigorous, erect and compact, with dark glossy foliage, fruit large, sub-acid and very good; ripe about the middle of July.

Empress Eugenie.—Fruit large, dark red, very rich and tender, sub-acid—a superior variety; ripe about 1st of July.

PEARS.

Souvenir du Congres.—This large and beautiful Pear has fruited in our collection for the past three years. Its large size, beautiful form, and good qualities make it an object of admiration to all that have seen it. The tree is a vigorous grower, and a very prolific bearer, generally fruiting in clusters, which should be thinned out, otherwise the fruit will not grow to its natural size. It does not flourish well on Quince stock.

Bonne du Puit Ansauld.—Fruit of medium size, melting, juicy and fine grained. Tree a vigorous grower; September. It ranks among the very best, and should be in every collection.

Eugene Appert.—Fruit medium size, flesh melting, perfumed and delicious; October.

Madame Andre Leroy.—Fruit large, melting juicy and of fine quality; November.

Petite Marguerite.—Fruit medium size, fine, melting, juicy and vinous. Tree vigorous, very prolific; August. One of the best early Pears.

Madame Treyve.—Fruit medium size, melting juicy and sweet, with a delicate aroma. Tree vigorous; September.

Theresa Appert.—Fruit large, melting, juicy, and vinous. A good grower; October.

All of the above varieties we have found, after careful testing, of the best quality, and deserving a place in every collection.

PEACHES.

Among Mr. Rivers' Seedling Peaches, *Early Beatrice*, *Early Louise*, and *Early Rivers* have thus far proved the most valuable with us.

The fruit of *Early Rivers* is larger than that of *Early Beatrice* or *Early Louise*, ripening with *Early Louise*, and superior in quality. The skin being rather delicate it may not pack as safely for distant market. Time and experience will determine.

RUSSIAN APPLES.

We have fruited a large number of varieties of Russian Apples, and have been favorably impressed with some, which we think will be great acquisitions, particularly for the Northern and Western climates, where hardy varieties alone can be cultivated. They however require further time to warrant a particular and specific report.

GEO. ELLWANGER,

ROCHESTER, September, 1875. *Chairman.*

Committee to Select Essays.

A Committee, consisting of Messrs. Hovey and Berekmans, and the Secretary, was appointed to examine and report what Essays of those presented should be read.

Adjourned to 9 A. M. to-morrow.

SECOND DAY—MORNING SESSION.

The Society was called to order at 9 A. M. The Secretary reported that, after conferring with the Park Commissioners, it had been concluded to fix upon 4 o'clock this afternoon as the hour for visiting the South Park. After some discussion it was voted to adjourn at 4 o'clock for that purpose.

The Standing Committees were then announced by the President. [See list of officers.]

The Society then proceeded to the

Discussion of Fruits.

APPLES.

The following is a report of the remarks made upon varieties in the revision of the list:

Brookes' Pippin.—SAUL, of District of Columbia. Same as *Newtown Pippin*.

Chenango Strawberry.—MCWHORTER, of Illinois. Hardy.

FURNAS, of Indiana. Constant bearer.

Cogswell.—PLUMB, of Wisconsin. There is no such apple; and *Walbridge* is a distinct variety.

MCWHORTER, of Illinois. *Mahaska* is a synonym of *Baldwin*, not of *Cogswell* in my experience.

Cornell's Fancy.—CHAMBERLIN, of Virginia. Has it been tried West?

FLAGG, of Illinois.—I fruited it this season. It resembles *Chenango Strawberry*, and promises well.

MEEHAN, of Pennsylvania.—It is hardy, productive, and an early bearer.

Drap d'Or.—BALDERSTON, of Maryland. It is worth one star for Maryland.

BRACKENRIDGE, of Maryland.—It is not grown near Baltimore.

WARDER, of Ohio.—*Trenton Early* proves to be a synonym of *Drap d'Or*.

MASTERS, of Nebraska.—With me they are distinct.

Dutch Mignonne.—MASTERS, of Nebraska. Mine turned out to be the *Gravenstein*.

BARRY, of New York.—The varieties are as distinct as can be.

Fallwater.—BRACKENRIDGE, of Maryland. One of the most popular apples we have. One star for Maryland.

MASTERS, of Nebraska.—One star.

PLUMB, of Wisconsin.—Worthless with me.

Fall Jenneting.—MASTERS. Worthless in Nebraska.

Golden Russels.—PLUMB, of Wisconsin. What is the difference between the two.

HADWEN, of Massachusetts.—The habit of trees is different. That of the *Golden Russel*, of Massachusetts, is more upright. The fruit is yellow.

LYON, of Michigan.—The *Golden Russel* of Massachusetts is worth little in the West, but the *Golden Russel* of New York is popular and good. [See remarks of Mr. Downing on Golden Russels.]

BARRY, of New York.—That of New York has slender shoots, spotted differently from any other.

Goodale.—SAWYER, of Maine, called attention to the fact that there is no such apple, and that this was probably the *Goodale* pear in the wrong list.

Gravenstein.—HANCE, of New Jersey. This should have one star for New Jersey.

Grimes' Golden Pippin.—MASTERS, of Nebraska. Two stars for Nebraska.

FURNAS.—We are instructed to give it one star for Indiana.

Hall.—MCWHORTER, of Illinois. It is too small for the North.

SAUL, of District of Columbia.—The *Seckel* is also too small. The *Hall* is the *Seckel* among apples.

Haskell Sweet.—MASTERS. Deserves one star for Nebraska.

Hewes' Virginia Crab.—WARDER, of Ohio. We have a Kentucky seedling known as *Beeler's Crab*, a red sort which is bigger, and bears earlier.

Horse.—WARDER, of Ohio. It is not red, as the Catalogue would show.

ROSEMOUNT, of Tennessee.—There is no better apple. It is a yellow apple, with a red cheek.

TRANSOU, of Tennessee.—The *Horse* apple does not always have a red cheek.

EDWARDS, of Missouri.—It ripens continuously for some time.

Hubbardston Nonsuch.—MASTERS. One star for Nebraska.

Haut's Russet.—BARRY, of New York. Is this the *Golden Russet* of Massachusetts?

HOVEY, of Massachusetts.—So far as I have seen it is *American Golden Russet* or *Sheep Nose*.

LYON, of Michigan.—It is not *that*. [See the discussion on the Russets at Boston, 1873.]

Jeffries.—MASTERS. One star for Nebraska.

Jonathan.—EARLE, of Illinois. The best apple on the list.

WIER, of Illinois. Not productive.

ROBISON, of Illinois.—Drops too early.

Julian.—FLAGG, of Illinois. I have fruited this variety this year and find it very handsome and very good in quality. It is thin-skinned, and has a tendency to "scab."

Kentucky.—MCWHORTER, of Illinois. I introduced this apple under that name, thirty years ago. I find the same apple was said to be cultivated in Iowa under the name of *Summer Pippin*. It is a valuable apple. It is rather large, ovate-conical, regular, and of a green color striped with dull red. It is an annual bearer, and the tree half-hardy.

Kentucky Red Streak.—TRANSOR, of Tennessee. We call it *Kentucky Streak*. It is one of our best winter apples. It keeps well and bears well.

Keswick Collin.—CHAMBERLIN, of Virginia. One star for Virginia.

Lady Apple.—MCWHORTER, of Illinois. I am astonished at the reputation this apple has gained. We can do nothing with it.

FLAGG, of Illinois.—I sold it at fifty cents the peck basket last Spring.

R. S. RAGAN, of Indiana.—We can't sell it at all. It is first rate in quality.

SAUL, of District of Columbia. Large fruits generally sell best, but the *Lady Apple* with us sells as well as any.

BRACKENRIDGE, of Maryland.—It is taken up rapidly in our markets.

WARDER, of Ohio.—In the West it grows too big for a small apple.

CHAMBERLIN, of Virginia.—It is a valuable apple in our market (Washington), and brought \$16 a barrel when New York apples were selling at \$4.

Large Yellow Bough.—MCWHORTER, tender in Illinois.

PARRY, of New Jersey.—Wants one star for New Jersey.

BEATTY, of Kentucky.—Two stars for Kentucky.

Laurer.—FLAGG, of Illinois. As I saw it at St. Louis from the region of Kansas City, it was of

good size, handsome, and promised to keep well. Quality only good.

MASTERS, of Nebraska.—It twig-blighted this summer. Is a hardy tree as far as cold goes.

MCWHORTER, of Illinois.—I have had it in my cellar. It may prove a valuable cooking apple.

BAKER, of Illinois.—I could find no specimens worth seeing about Cobden. Specimens from Villa Ridge were good.

Limber Twig.—WARDER, of Ohio. *James River* is not a synonym of this but of *Willow Twig*.

MASTERS, of Nebraska.—A tender tree and the apple too small.

TRANSOR, of Tennessee.—An old variety and once good. Now it rots and falls prematurely.

Loudon Pippin.—CHAMBERLIN, of Virginia. I would give it three stars for Virginia, if allowable.

SAUL, of District of Columbia.—Equally good in the District.

Lowell.—MASTERS. Should have one star in Nebraska. I think our committee overlooked it.

Maiden's Blush.—BARRY, of New York. We find this one of our most popular sorts.

ROBISON, of Illinois.—The most successful summer apple this year.

LYON, of Michigan.—In Northern Michigan it keeps until Spring.

MASTERS, of Nebraska.—The tree is tender with us.

Mason's Stranger.—CHAMBERLIN, of Virginia. I made a description of this apple and sent it to Mr. Downing. It is valuable.

McLellan.—MCWHORTER, of Illinois. Always on the ground too early with me.

AUGUR, of Connecticut.—In Connecticut it is generally excellent.

Melon.—MCWHORTER, of Illinois. It is the same as *Newark King* in all my experience.

BARRY, of New York.—The *Melon* is a distinct and excellent apple and was introduced with the *Northern Spy*. I took specimens of it to England in 1848, where Mr. Rivers thought it was the finest apple in the world. It is a poor grower, as a tree, and not popular with nurserymen.

Moore's Sweet.—FURNAS, of Indiana. It should have two stars for Indiana.

Newtown Pippin.—CHAMBERLIN, of Virginia. It is a very good apple in my part of the State, but not on the low grounds.

BARRY, of New York.—The finest specimens I have ever seen were grown in Virginia and North Carolina.

SAUL, of District of Columbia.—Hundreds of barrels are shipped from Washington.

HAMILTON, of Nova Scotia.—It spots in Nova Scotia.

R. S. RAGAN, of Indiana.—There is a confusion between the green and yellow variety. The green is the only one worth anything in the West, and should be so placed in the Catalogue. The yellow is worthless.

BRACKENRIDGE, of Maryland.—The *Newtown Pippin* is not a good bearer in Maryland. We can't distinguish between the two varieties.

SAUL, of District of Columbia.—The apple does not succeed in any of the low lands of the Potomac region.

OVERMAN, of Illinois.—It does not always mature its fruit with us. I have been led to think that the two varieties are synonymous.

R. S. RAGAN, of Indiana.—My uncle procured the yellow variety of Downing. He found the trees identical in the nursery and orchard growth, but the yellow variety bears a larger apple that does not keep so well.

AUGUR, of Connecticut.—I do not want it starred for our State; but it scabs less of late years. We had good crops last year and this. Lime, ashes and the like have given good results when applied as a manure for this variety.

ALLAN, of Nebraska.—The tree runs to wood in a deep soil.

FURNAS, of Indiana.—Is *Albemarle Pippin* a synonym?

BARRY, of New York.—Yes. I may add that a large committee could not agree that there was more than one *Newtown Pippin*.

HOVEY, of Massachusetts.—I investigated this matter and came to the conclusion that there was only one variety, although it may vary under different conditions, like the *Baldwin* and others.

CHAMBERLIN, of Virginia.—I think *Albemarle Pippin* was the original name, and *Albemarle* the place of origin. It was grown there sixty years before it was sent out.

Northern Spy.—ALLAN, of Nebraska. It should have one star for Nebraska.

AUGUR, of Connecticut.—It does well in clay lands, but is not generally good in Connecticut.

Orange Pippin.—FIELD, of New Jersey. Two stars for New Jersey.

AUGUR.—One star for Connecticut.

Oloc Red Streak.—Not described in the Catalogue. Mr. Masters promised to furnish a description.

Perry Russet.—PLUMB, of Wisconsin. A good tree, but bears poorly generally. It is said to be an abundant bearer on the Lake. It has a thick top and a round head.

Pickard's Reserve.—FURNAS, of Indiana. It does not give as good satisfaction as was expected.

Pilot.—CHAMBERLIN, of Virginia. One of the best late apples.

Pittsburg Pippin.—LYON, of Michigan. Promising.

Plumb's Cider.—HARRIS, of Minnesota. Promising well and hardy in Southern Minnesota.

Budd, of Iowa.—We have it on exhibition side by side with *Smith's Cider* to show the difference. *Smith's Cider* is tender in tree.

Porter.———, of New Jersey. One star for New Jersey.

Pryor's Red.—FURNAS, of Indiana. The tree is tender in Indiana. There is not a tree in Hendrick's County that is not affected with rust on the leaves.

R. S. RAGAN, of Indiana.—It is hardy when the leaves are good. Thirty-five years ago we would have put it at the head of the list.

BEATTY, of Kentucky.—Trees of it planted in an orchard did well about ten years, when they began to be troubled with this rust. The last five years again they have been doing better; but this year are again troubled with the rust.

Rauch's Genet.—TRANSOU, of Tennessee. Worthless now. It specks, prematurely rots and drops.

Red Stripe.—BRACKETT, of Iowa. Was disseminated from Iowa.

FURNAS, of Indiana. It is known as *Rockhill's Summer Queen* at one point.

Rhode Island Greening.—FIELD, of New Jersey. Reduce to one star for New Jersey.

St. Lawrence.—HARRIS, of Minnesota. One star for Minnesota.

Shockley.—MCWHORTER, of Illinois. A Southern apple, too small to receive any notice.

FLAGG, of Illinois.—Not smaller than the *Gilpin*, a better apple and perhaps a better keeper.

TRANSOU, of Tennessee.—A good apple and fine keeper.

ALLAN, of Nebraska.—It has done very well indeed on young trees.

Smith's Cider.—SAUL, of D. C. First-rate.

BEATTY, of Kentucky.—We put *Ben Davis* first, and this second.

Soulard.—MCAFEE, of Iowa. It was brought from St. Louis along with *Gras Pommier*.

BIRD, of Iowa.—*Soulard* is of the Russian type, and a good apple. *Soulard Crab* is later and not so good.

Tewksbury Winter Blush.—BRACKENRIDGE, of Maryland. One of our best long-keepers. One star for Maryland.

CHAMBERLIN, of Virginia.—One star for Virginia, for the same reason.

Wagner.—LYON, of Michigan. It is very popular as a young tree; then over bears and does badly. Hardy tree.

FURNAS, of Indiana.—One star for Indiana.

ALLAN, of Nebraska.—One star for Nebraska.

Virginia Greening.—TRANSOU, of Tennessee. One star for Tennessee.

Walbridge.—PLUMB, of Wisconsin. It attracts much attention in the Northwest. I think it originated in Edgar County, Illinois.

Waugh's Crab.—SAUL, of D. C. It is of large size, keeps well and is good for eating, when long kept. Valuable.

Willow Twig.—[See Dr. Warder's remarks on synonyms, under *Limber Twig*.]

Winesap.—SAUL, of D. C. At the head of all our apples.

TRANSOU, of Tennessee. Two stars for Tennessee.

York Imperial.—BRACKENRIDGE, of Maryland. Two stars for Maryland. Bears young and is a fine apple.

CRABS.

Transcendent.—FURNAS, of Indiana. Two stars for Indiana.

HARRIS, of Minnesota.—Two stars for Minnesota.

ALLAN, of Nebraska.—One star for Nebraska.

SAWYER, of Maine.—Two stars for Maine.

TRANSOU, of Tennessee. One star for Tennessee.

NEW VARIETIES.

Indiana Favorite.—FURNAS, of Indiana. In the Western and Central parts of our State it had the finest yield of any apple I saw last Fall. Quality excellent. It should be marked promising well.

Wythe.—HAMMOND, of Illinois. This is a native of Hancock County. The tree is hardy and blooms with the *Genet*. The fruit is of the same color. [See report of Committee on Native Fruits, 1873.]

Clayton.—FURNAS, of Indiana. The original tree is fifty years old, and has borne every year, except five or six. The fruit keeps well—better than *Ben Davis*. It is a better apple, and ships better. Promises well. [See Warder's Pomology.]

Key's Early White.—TRANSOU, of Tennessee. A seedling apple of Madison County. I have known it three years. A good bearer.

Goff.—FOSTER, of Iowa. It is from Logan County, Ohio. I have known it ten years. It is the most profitable apple I ever planted. Autumn apple.

Shiawasse Beauty.—LYON, of Michigan. A promising amateur variety. It takes the place of *Fameuse*. It is free from scab.

Mary Womack.—BEATTY, of Kentucky. It is an old apple. I have known it twenty years. It ripens first of September and resembles the *Rambo*.

LETTER OF MR. DOWNING.

The following letter, bearing on the discussion, is added for completeness of information:

NEWBURGH, Oct. 18, 1875.

Mr. Barry:

DEAR SIR:—I notice in the discussion on apples in the *Prairie Farmer*, by the American Pomological Society, some mistakes it would be well to correct if not too late. Plumb says there is no such apple as *Cogswell*, but there is.

Golden Russet, of Massachusetts, is *Hunt's Russet*, so is *Fay's Russet* and *Russet Pearmain* of Downing.

McWhorter said that *Mahaska* was a synonym of *Baldwin*. It should be *Baltimore*.

In the Catalogue, *Walbridge* and *Mahaska* are synonyms to *Cogswell*, and should be stricken out.

Brooke's Pippin, as it is a synonym of *Newtown Pippin*, should be taken out.

Golden Russet, of Massachusetts, being a synonym of *Hunt's Russet*, should be taken out.

The different *Russels* have puzzled me a long time, but I now believe that I have them right, and give you the result on next page.

I still think there is a *Green* and *Yellow Newtown Pippin*, they both have the same growth while young, but with age they vary much, and if I had known your opinion when you were here I could have shown you the difference, both in tree and fruit.

Hunt's Russet and its synonyms: *Golden Russet* of Massachusetts (p. 196 of Downing), *Fay's Russet* (p. 174 of Downing), *Russet Pearmain* (p. 344 of Downing), *American Golden Russet*,

(incorrectly) of some, New England *Russet*, *New England Golden Russet*, *Bullock's Pippin*, or *Sheep Nose*, of some, *American Golden Russet*, or *Sheep Nose of Horry*, but incorrectly.

Very Respectfully,

CHAS. DOWNING.

PEARS.

Ananas d' Ete.—BRACKENRIDGE, of Maryland. One star for Maryland.

Belle Lucrative.—FIELD, of New Jersey. One star for New Jersey.

AUGUR, of Connecticut.—One star for Connecticut.

TRANSOU, of Tennessee. Very fine in Tennessee.

Beurre Bose.—ALLAN, of Nebraska. One star for Nebraska.

Beurre Chirgreau.—ALLAN, of Nebraska. One star for Nebraska.

Beurre d' Anjou.—WILDER, of Massachusetts. Increasing in estimation everywhere.

AUGUR, of Connecticut.—Two stars for Connecticut.

FURNAS, of Indiana.—Gaining in Indiana all the time.

Beurre Deil.—WILDER, of Massachusetts. Didn't crack this year. Cause, the coolness and humidity of the season.

Beurre Hardy.—SAUL, of D. C. One star for the District.

Clapp's Favorite.—WILDER. A favorite indeed! Mr. Clapp told me on the 20th August that he had sent 250 bushels to market.

AUGUR, of Connecticut.—Is worthy of two stars for Connecticut.

WIER, of Illinois.—Leaf blights with me.

LYON, of Michigan.—It is taking a leading position.

SAWYER, of Maine.—The most popular variety.

Doynne Boussock.—BRACKENRIDGE, of Maryland. Two stars for Maryland.

Doynne du Comice.—SAUL, of D. C. One star for the District.

Duchesse de Bordeaux.—BARRY, of New York. It is excellent, but not a melting pear. It must go among the cooking pears.

WILDER, of Massachusetts. This is my experience.

Flemish Beauty.—FURNAS, of Indiana. Two stars for Indiana.

Henkel.—BRACKENRIDGE, of Maryland. It bears early with us. Is early and profitable. One star for Maryland.

John Williams.—TRANSOU, of Tennessee. The best winter pear for Tennessee. Very hardy on quince or as standard. It is an old variety but not propagated until latterly.

Knight's.—WILDER, of Massachusetts. A profitable summer pear.

Manning's Elizabeth.—FIELD, of New Jersey. One star for New Jersey. They sell the fruit in New York as the *California Seckel*.

BRACKENRIDGE, of Maryland.—One of the finest little pears. We should have one star for Maryland.

Merriman.—WILDER, of Massachusetts. It is becoming exceedingly popular on account of its golden russet color. You must pick it early. I have 100 trees of it.

SAUL, of D. C. One star for the District.

Onondaga.—BRACKENRIDGE, of Maryland. One star for Maryland.

CHAMBERLIN, of Virginia.—One star for Virginia.

Pinnac.—SAUL, of D. C. One star for the District.

AUGUR, of Connecticut.—One star for Connecticut.

St. Ghislain.—ALLAN, of Nebraska. One star for Nebraska.

Urbaniste.—ALLAN, of Nebraska. One star for Nebraska.

VARIETIES NOT ON THE LIST.

Pittaston's Duchesse.—SAUL, of D. C. Is as large or larger than the *Duchesse d'Angoulême* and of fine flavor. The tree is a luxuriant grower and profuse bearer.

British Queen.—BRACKENRIDGE, of Maryland. A fine keeper. As good as *Winter Nelis* in April. A poor grower in the nursery.

SAUL, of D. C.—I think the variety is correct. It was figured in the *Gardener's Chronicle*.

Chambers.—BEATTY, of Kentucky. The original tree has been bearing thirty years, and the variety propagated by Hobbs, Walker & Co. It leads the *Beurre Giffard* and is almost as large as the *Bartlett*. It has never been known to blight.

WILDER, of Massachusetts.—The quality is not very good.

Goodale.—On motion of SAWYER, of Maine, the list was corrected by adding this variety. He suggested one star for Maine.

WILDER, of Massachusetts.—It does well in Massachusetts and is desirable.

Souvenir du Congrès.—WILDER, of Massachusetts. We found this pear highly extolled in Europe in 1867. I have fourteen trees in bearing. The tree is magnificent.

BARRY, of New York.—It is one of the largest melting pears.

Mt. Vernon.—WILDER, of Massachusetts. This variety originated near me. If it were a little larger it would be considered one of the best. It is very prolific and needs thinning. Thin your trees that bear abundantly, and you will not hear complaints of smallness.

Clapp's and Fox's Seedlings.—The President being called upon to say something of the seedling pears on exhibition, said: Mr. Clapp has some sixty-

five seedlings, the best of which is *Clapp's Favorite*, though many others are good. No. 22, which is an October and November pear, will unquestionably take a high stand. It is perfect in all respects except form.

Mr. FOX, of California, has seventy-five varieties, mostly the seed of *Belle Lucrative*, but they have varied characteristics. It is a wonderful collection. A few of them have been named *Barry*, *Wilder*, *Fox*, &c.

SAUL, of D. C.—I have eaten the fruit of the *Wilder* on the 19th of April in an excellent state of preservation.

SPECIAL COMMITTEE ON RICKETT'S SEEDLING GRAPES.

The President appointed P. Barry, Charles Downing and John J. Thomas a Committee to examine Mr. Rickett's Seedling Grapes on his own grounds and report. [See Essays and Reports.]

Adjourned to 2½ o'clock P. M.

SECOND DAY—AFTERNOON SESSION.

Discussion on Grapes.

Adirondac.—WILDER, of Massachusetts. Has been a poor grower with me.

Barry (Rogers 43).—WILDER, of Massachusetts. One of the best of the Rogers' Hybrids.

Croton.—ADAMSON. Not hardy in Michigan.

MEEHAN, of Pennsylvania.—One of the hardiest with me.

WIER, of Illinois.—Is troubled with mildew and root lice.

CAMPBELL, of Ohio.—So in Ohio. It is good in good seasons. Should not call it valuable for general cultivation.

WILDER (Rogers No. 4).—WILDER, of Massachusetts. One of the best.

NEW VARIETIES AND RECONSIDERATION.

Enumelan.—CAMPBELL, of Ohio. Very subject to mildew and the blossoms don't set well.

Goethe (Rogers No. 1).—Although on the list was taken up.

SAUL, of District of Columbia.—In good seasons it is one of the finest of the hybrids.

Hartford Prolific.———, of New Jersey. Should have one star for New Jersey.

Iona.—WILDER, of Massachusetts. One of the best for quality, but unreliable. It starts out well, but don't ripen its fruit.

BALDERSTON, of Maryland.—It ripens well only in sheltered situations.

CAMPBELL, of Ohio.—It does well on the Lake Shore, but don't answer in Central Ohio.

FABNESTOCK, of Ohio.—It is very unreliable with me.

PURDY, of New York.—It is one of the best keepers.

HOVEY, of Massachusetts.—I can't raise it, I can't leave it out even in a moderate winter. It mildews when anything does.

WIER, of Illinois.—It is not as reliable as the *Catawba*.

DEWEY, of Connecticut.—It gives us no satisfaction in Connecticut.

PURDY, of New York.—I have never had it winter kill on a gravelly soil.

SYLVESTER, of New York.—There is no dispute about the quality, but it is worthless with us. We

have to dig it up. It winter kills whether we lay it down or leave it up.

Isabella.—HOVEY, of Massachusetts. Has the same faults as the *Iona*.

Isabella.—BARRY, of New York. One of the best market grapes in New York yet, according to many.

Tees.—TRANSOU, of Tennessee. One of our best market grapes.

SYLVESTER, of New York.—Sells equally well with *Hartford* and *Concord*.

Lindley (Rogers No. 9).—WILDER, of Massachusetts. One of the best. Good bunch. The small berries are often as good as the *Delaware*.

CAMPBELL, of Ohio.—The foliage is scant. Makes one of the finest bunches of any of the hybrids.

Martha.—TRANSOU, of Tennessee. Does well in Tennessee.

FIELD, of New Jersey.—One star for New Jersey.

WILDER, of Massachusetts.—Improves in quality.

Marlatowney.—I know one covered with fine fruit annually.

TRANSOU, of Tennessee.—One of the best in Tennessee.

Rebecca.—TRANSOU, of Tennessee.—Does well with us.

CAMPBELL, of Ohio.—*Marlatowney* is a better grower, but more insipid.

BARRY, of New York.—Not so with us.

Salem (Rogers 22).—CAMPBELL, of Ohio. One of the best and most reliable. Mildews some seasons.

HOVEY, of Massachusetts.—It has no decided color.

SYLVESTER, of New York.—Very variable.

Scuppernon.—TRANSOU, of Tennessee. Does well on sandy soils and on dry lands.

Telegraph.—CAMPBELL, of Ohio. In quality it comes between *Hartford Prolific* and the *Concord*. It is better than the former and poorer than the latter.

WIER, of Illinois.—One of our best early grapes, hardy, productive and very good.

WILDER, of Massachusetts.—My experience agrees with Mr. Campbell's.

Walter.—CAMPBELL, of Ohio. It is variable in growing. Grafted on other roots it does best. It mildews about as much as the *Delaware*. It has the peculiar flavor of *Diana* and is rather better. It is a little tender in winter. It is valuable for amateurs and may do for vineyards in some places.

BARRY, of New York.—It has been planted for vineyards at Pleasant Valley, but is not succeeding.

WILDER, of Massachusetts.—It doesn't succeed around Boston.

Wilder (Rogers No. 4).—CAMPBELL. Most popular just now.

PURDY.—Finest black grape I can grow.

Rogers No. 30.—CAMPBELL, of Ohio. One of the best.

SAUL, of District of Columbia.—I think it excellent, but no better than others.

WILDER, of Massachusetts.—Very excellent, but liable to mildew.

Rogers No. 39.—HOVEY, of Massachusetts. Who knows of it?

CAMPBELL, of Ohio.—A black grape, like *No. 4* but earlier; the foliage more cut-lobed and wavy than *No. 4*.

WILDER, of Massachusetts.—It is one of the best and should be named.

BUSH, of Missouri.—I received it from different sources and the vines received were different. The original stock of Mr. Rogers' was lost. One of the vines received proved valuable, and we called it *Aminia* (supposed Rogers' No. 39.) No Rogers' hybrid did well with us this year.

Delaware is very good, but very uncertain. Yet, in Arkansas, Dr. Lawrence has grown magnificent crops.

MEEHAN, of Pennsylvania.—All grapes grafted on *Clinton* and *Concord* are much improved. I think in the future the *Delaware* will be grafted.

MCWHORTER, of Illinois.—I have been wondering at the discussion on grapes. Very few are spoken of as successful. We have spent money and time, and have only *Concord* and perhaps *Hartford Prolific* to rely on. Anybody can raise *Concord*.

Champion.—BARRY, of New York. It is rather poor but our earliest. It was selling in Rochester when I left.

WILDER, of Massachusetts.—It has a soft pulp, bears heavily. An excellent parent to hybridize with.

JONES, of New York.—It is the same as Tolman's Seedling.

ELLWANGER, of New York.—I saw a vineyard of this variety last year, containing several hundred vines heavily loaded. They sold this year at twenty cents per pound. It ripens a week or more before the *Hartford Prolific*.

BUSH, of Missouri.—A variety of this name was spoken highly of by Mr. Swasey, of Louisiana, but is of Southern origin and came from A. W. Roundtree.

REDMOND, of Mississippi.—This Southern *Champion ripens* with the *Hale's Early Peach*.

BARRY, of Rochester.—So does ours.

Cambridge.—HOVEY, of Massachusetts. It is the *Concord* intensified as to hardness, productiveness, &c. I know no grape quite equal to it for vigor, health, &c. It is an improved *Concord*.

DAVIS, of Massachusetts.—It is eight or ten days earlier than the *Concord*, and a little superior to it.

Cottage.—BUSH, of Missouri. A little finer than the *Concord*; a week earlier and better than the other early grapes.

Elvira.—BUSH, of Missouri. It bears immense crops and fructifies perfectly. It stands the winter well and has borne well, even this year. It will be very valuable as a wine grape. A seedling of the *Taylor*.

Cynthiana.—BUSH, of Missouri. Is well known now and ought to be on the list. It is seven days earlier than the *Norton*.

Lady.—CAMPBELL, of Ohio. Has the habit and foliage of the *Concord*. The berries are larger and the bunches smaller. It was ripe with me last year, August 15th. It has a thick skin and would carry well. It is hardy. Is a *Concord* seedling.

Janesville.—CAMPBELL, of Ohio. Very hardy and very poor.

WHAT WE NEED.

WIER, of Illinois.—We want a better late grape, as good as the *Catawba*.

PURDY, of New York.—Earliness is a great essential in a market grape. *Worden* is a hardy free grower, and eight or ten days earlier than *Concord*.

HOVEY, of Massachusetts.—If grapes for market are what we want, we must breed for thick skin and a fair pulp, and not for a thin skin.

SAUL, of District of Columbia.—In some parts of Virginia the *Catawba* is as good as ever.

Discussion on Peaches.

Allen's October.—TRANSOU, of Tennessee. A fine late medium size, free yellow peach.

Amelia.—REDMOND, of Mississippi. Fine for home, immediately after *Tillotson*. Too tender for market.

TRANSOU, of Tennessee, coincides.

Chinese Cling.—TRANSOU, of Tennessee. One of the best early Clings.

REDMOND, of Mississippi.—I agree as to quality; but it is a shy bearer.

TRANSOU.—Not with me.

FLAGG, of Illinois.—A fine peach in the latitude of St. Louis.

Cole's Early Red.—HANCE, of New Jersey. I don't like its having even one star for New Jersey.

SAUL, of District of Columbia.—Poor in the District.

Columbia.—SAUL, of District of Columbia.—Fine.

REDMOND, of Mississippi.—Fine with me.

Coolidge's Favorite.—BARRY, of New York. Fine in New York.

HULL, of Illinois.—Very handsomely colored. Too thin skin.

Crawford's Early.—HANCE, of New Jersey. Not doing so well South.

R. S. RAGAN, of Indiana.—*Morris' Red Rare Ripe* under some conditions bore two crops of fruit where the *Crawford's Early* did not produce two dozen. We never have a full crop. It is worse in Indiana than in Illinois.

Druid Hill.—TRANSOU. Good in Tennessee.

Early Tillotson.—TRANSOU, of Tennessee. A standard variety in Tennessee.

HULL, of Illinois.—Hardly worthy with us. Fungoid growths attack it first of any.

FAHNESTOCK, of Ohio.—Mildews badly in Ohio.

TRANSOU.—It gives us no trouble.

BEATTY, of Kentucky.—One of the best but mildews on young trees.

SAUL, of District of Columbia.—Very fine in Southern Maryland.

REDMOND, of Mississippi.—Good for the South.

Early York.—(Serrate.) TRANSOU, of Tennessee. Very good.

Eaton's Golden.—TRANSOU, of Tennessee. Our best late canning peach.

Foster.—HOVEY, of Massachusetts. Yellow, like *Crawford's Early*.—Larger and very handsome.

JONES, of New York.—Very handsome this year. It is taking the place of *Crawford's Early*.

Haines' Early Red.—SAUL, of District of Columbia. Very poor in the District.

BRACKENRIDGE, of Maryland.—We rejected it long ago.

Hale's Early.—BARRY, of New York. Stands better than it ever did.

HULL, of Illinois.—Will grow it all the time. The curello will attack the first early sort at any rate, and we may as well fight him on this as on any other.

ROSEMOUNT, of Tennessee.—We voted to strike it from the list. It rots universally on good soil. We have something better that comes at the same time.

MASON, of Michigan.—On our light sandy soils it is one of the most profitable. On heavier soils it rots.

SAUL, of District of Columbia.—It succeeds admirably on both sides of the Potomac in some situations, whilst in others it fails.

BRACKENRIDGE, of Maryland.—I know a grower of thirty thousand trees, that on *light soils* finds it very profitable and is planting more.

FAHNESTOCK, of Ohio.—I have two hundred trees on light soil that are all right, but twenty-five that stand on the clay have their fruit rot.

TROTH, of Virginia.—In Halifax County it is a failure on all soils.

AUGUR, of Connecticut.—Last year it was a success, but this year a failure.

BEATTY, of Kentucky.—Dr. Porter, of our Society, scalded trees about the roots to destroy the borer. On such trees the fruit was perfect, while it rotted on the others.

SYLVESTER, of New York.—Although a quarter of them partly or wholly decay, we get pay for the balance by their earliness.

SMITH, of Massachusetts.—I knew an amateur grower that succeeded with them by fertilizing heavily.

REDMOND, of Mississippi.—I fail with high culture.

THOMAS, of Pennsylvania.—They do well with us in grass.

PARRY, of New Jersey.—It rots badly with me. It is surpassed in earliness by Mr. Rivers' three peaches, and they do not rot.

PURDY, of New York.—It is one of the most profitable.

CHAMBERLIN, of Virginia.—It is the only one that stood the frost with me.

Hill's Chili.—MASON, of Michigan.—Hardy.

Hoover's Late.—TRANSOU, of Tennessee. A seedling of *Heath*, and very valuable.

Jacques.—MASON, of Michigan. Very good.

Mountain Rose. HANCE, of New Jersey. Worth two stars for New Jersey.

PARRY, of New Jersey.—One of the best.

SAUL, of District of Columbia.—One of the best.

MASON, of Michigan. Ditto.

Oldmixon Free.—HARRISON, of Pennsylvania. The best peach for canning. The flesh keeps longer in good condition than that of any other variety, and the flavor is more universally liked.

BRACKENRIDGE, of Maryland.—It brings the best price in the Baltimore markets, *Heath* excepted.

Picquet's Late.—FLAGG, of Illinois. Have fruited it one season. A little later than *Smock*, and a very good variety. Promising well.

REDMOND, of Mississippi.—One of the finest Southern peaches.

TRANSOU, of Tennessee.—Very good in Tennessee.

Smock.—MASON, of Michigan. The latest peach we grow.

SAUL, of District of Columbia.—Of poor quality. More money in it than in any other.

Stump the World.—HANCE, of New Jersey. One star for New Jersey.

Troth's Early.—SAUL, of District of Columbia. Best early peach in the District.

White Imperial.—PURDY, of New York. Magnificent!

Yellow St. John.—REDMOND, of Mississippi. One of the best. Ripens nearly with *Early Tillotson*.

NEW VARIETIES.

Alyer's Winter.—SAUL, of District of Columbia. A golden yellow, freestone, late peach. Keeps longer than any other.

Early Beatrice.—SAUL, of District of Columbia. Have fruited it two years. This year it ripened June 20th, and was all gone July 20th. It is small, high colored, not disposed to rot. Of second quality.

ROSEMOUNT, of Tennessee.—With me it ripened June 20th. I have had the *Hale's Early* do so, but regard the *Early Beatrice* as the best peach ripening at that time, and usually at least ten days earlier than *Hale*.

BRACKENRIDGE, of Maryland.—It is one week earlier than *Hale* on the Chesapeake. About second rate, but good for an early peach.

PARRY, of New Jersey.—Very satisfactory. It ripened July 23d, about one week before *Hale*. The best early peach.

Early Louise.—SAUL, of District of Columbia. Three days later than *Early Beatrice*. A larger and better peach. The two come fully a fortnight before the *Hale* and are good, healthy growers.

ROSEMOUNT, of Tennessee.—Larger and from three to five days later than *Early Beatrice*. A thrifty grower.

BRACKENRIDGE, of Maryland.—I received a large box of the three kinds. They come about the same season. *Early Louise* is larger than *Beatrice*.

HANCE, of New Jersey.—It is a week ahead of *Hale*.

PARRY, of New Jersey.—It comes three or four days after *Beatrice*.

Early Rivers.—SAUL, of District of Columbia. It comes four days later than *Louise* and is the largest of the three. It is not so well colored as *Beatrice*, and I fear is a little tender to ship. The tree is good.

ROSEMOUNT, of Tennessee.—It is very large for an early peach, of a fine color, being peculiarly streaked, and a little tender in flesh. Four or five days later than *Louise*. Trees vigorous.

PARRY, of New Jersey.—Can confirm Mr. Rosemount's opinion; but I think the *Early Rivers* for market is the best of the three. I had them 8 $\frac{3}{4}$ inches in circumference, and luscious in quality.

HANCE, of New Jersey.—It is the best early peach I ever ate.

Amsden.—FLAGG, of Illinois. I have not seen this peach but have been in correspondence with John C. Teas, of Carthage, Mo., whose statements are reliable. It ripened there (Lat. 37 degrees), this year, July 3d to 14th; *Early Beatrice*, July 9th to 15th; *Early Louise*, July 12th to 21st; *Early Rivers*, July 19th to 26th; *Hale's Early*, July 20th to August 1st. There has been, so far as I know, no direct comparison made with the *Alexander*, which I judge to be about as early and larger. Both I think are seedlings of *Hale's Early*, have large blossoms, and are therefore hardy in bud.

ELLWANGER, of New York.—The *Amsden* is larger than the *Beatrice*.

PURDY, of New York.—It is medium to large, thick-meat and very good in quality.

Alexander.—HANCE, of New Jersey. I ate the fruit, grown at Newburg, N. Y. It was about three weeks earlier than *Hale*, of good color and fine quality.

PURDY, of New York.—Specimens of *Hale's Early* were only half grown when *Alexander* was ripe.

FLAGG, of Illinois.—Originated at Mt. Pulaski, in this State. Has been fruited in New York, Maryland, Georgia, California and Oregon, and promises well everywhere. Earlier than *Early Beatrice*, of good size and quality. Whether earlier than *Amsden* or not I have not been able to ascertain.

Richmond.—TROTH, of Virginia. Exhibited at the Fruit Growers' Association on the first of the month. A very good yellow peach.

SYLVESTER, of New York.—It and the *Atlanta* were the result of seven hundred seedlings grown. The *Richmond* is nearly the same in appearance as the *Crawford's Early*, but is sweeter, a few days later, and about equally productive. Has a small pit.

Atlanta.—HANCE, of New Jersey. Fruited on young trees it ripened with the *Mountain Rose*, and

earlier than *Crawford's Early*, of fine quality. The size disappointed me.

SYLVESTER, of New York.—Tree not so strong a grower as *Crawford's Early*. Fruit greenish white. In flavor not excelled. Picked too early it adheres to the stone. Ripens after *Crawford's Early*.

Salway.—HANCE, of New Jersey. I have only fruited it in the greenhouse. Not very good.

SAUL, of District of Columbia.—Large, late, not very good, a moderate bearer. Ripens after *Smock*.

FLAGG, of Illinois.—Have fruited it one year. Not very late nor large. Mildewed somewhat.

Beers' Smock.—HANCE, of New Jersey. Originated in our county and is preferred by some to *Smock*, which it nearly resembles.

SAUL, of District of Columbia.—I know a grower who raised all his *Smock* trees from seed.

FAHNESTOCK, of Ohio.—*Beers' Smock* is half as large again as *Smock* with me in rows side by side. Has the same quality and color, a long point and is indented at the stem end.

PARRY, of New Jersey.—Larger and better than the true *Smock*. We send out *Beers' Smock* for it.

Stoolby was inquired for; but this peach, which Samuel Miller pronounces "the largest, best and latest freestone peach," had no acquaintances present.

Honeywell.—HANCE, of New Jersey. A peach a week earlier than *Alexander at Newburg*. Originated by John Honeywell, of Randolph, Portage County, Ohio.

STRAWBERRIES.

Charles Downing.—EDWARDS, of Missouri. I have fruited it three years and find it far more valuable and productive than the *Wilson*. In 1874, I gathered nine pickings of fine berries from it. It is a little soft for distant markets.

CAMPBELL, of Ohio.—I was one of the first to get it, and have grown it ever since; and it has grown in favor ever since. If I could have but one variety it should be the *Charles Downing*.

BEATTY, of Kentucky.—With us it is almost worthless. We have had more than an acre the last three years. They failed to color, were soft and the fruit did not color well.

WIER, of Illinois.—On light clay soil it is excellent. On sandy loam it is worthless.

R. S. RAGAN, of Indiana.—One of the best for family use.

TRANSOU, of Tennessee.—I have fruited it one year and am well pleased with it. It is too tender for shipping, but there are many amateurs.

Kentucky.—EDWARDS, of Missouri. It lengthens the season a week; is a fair bearer and of good quality.

PURDY, of New York.—The best late berry for Western New York.

FRENCH, of Massachusetts. Too soft for transportation in Massachusetts, and has not color enough. Valuable for its lateness.

Nicanor.—EDWARDS, of Missouri. Bore itself to death the first year.

PURDY, of New York.—Renew it every year.

WIER, of Illinois.—A fine early fruit.

Green Prolific.—R. S. Ragan, of Indiana. Has yielded the most of any with Dr. Furnas.

HUMPHREY, of Illinois.—We don't care to plant any but *Wilson* and *Green Prolific*. We get from three to five pickings.

TRANSOU, of Tennessee.—Endorses the last speaker.

EDWARDS, of Missouri.—One of the most productive. Softer than *Charles Downing*.

PURDY, of New York.—Esteemed in New York and in Indiana. You won't have "nubbins" if you have plenty of fertilizers.

Monarch of the West.—PURDY, of New York. I fruited it the past season. See nothing to recommend it except the abundance of foliage, and have heard it commended from only one or two quarters.

Edwards No. 14.—EDWARDS, of Missouri. I have two seedlings that I received from Dr. Edwards, of Elkton, Ky., one of which is the best flavored berry I have ever tasted. I call it his *No. 14*.

Col. Cheney.—PURDY, of New York. A cross between *Triomphe de Gand* and *Russell's Prolific*, that is giving good satisfaction in every State and Territory. The plant is much like the *Wilson* in appearance.

RASPBERRIES.

Heestine.—Balderston, of Maryland. Hardy and productive.

JONES, of New York. Not hardy and too soft.

COOK, of Pennsylvania.—Hardy, productive, and of fine color.

Philadelphia.—RITCHIE, of Ohio. Very variable. Subject to winter killing in some places. With me very hardy and more productive than any other. Not so well flavored as some, but sells well.

EDWARDS, of Missouri.—Never kills with us.

FRENCH, of Massachusetts.—Bears well with us. We have to cover all sorts.

MILLER, of Illinois.—The black caps killed with me last winter when the *Philadelphia* remained good.

WIER, of Illinois.—We find we have two varieties that have been disseminated as *Philadelphia*. One is tender in summer and winter. The other is hardy and productive.

PURDY, of New York.—I have grown all the raspberries I could hear of. The *Philadelphia* bears the best of any I know, three to one.

COOK, of Pennsylvania.—The *Brandywine* outsells the *Philadelphia*.

TRANSOU, of Tennessee.—All sorts are hardy with us, but the *Clarke* is not so good as the *Philadelphia*.

PURDY, of New York.—Other red raspberries are as profitable as the *Philadelphia*, but produce less. The *Philadelphia* suckers least.

MCLEAN, of Michigan.—The *Philadelphia* is productive and moderately hardy. The cane is attacked by an insect that kills the part above the point of attack. The berries do not sell as well in Chicago as those of the *Clarke*.

NEW VARIETIES.

Duncan's Improved Black Cap.—BEATTY, of Kentucky. Is a new sort from Bullitt County. More vigorous than the common sort.

Turner.—MCLEAN, of Michigan. A good bearer, hardy.

———, of Illinois. The only variety among a dozen that was not damaged last winter.

PURDY, of New York.—On one year old plants I was unfavorably impressed with it, but I think better of it. It bore profusely. Its sponginess is favorable for carriage.

WIER, of Illinois.—It is hardy. The fruit don't waste its juice in carrying. The suckers should be treated as weeds.

Ganargua.—PURDY, of New York. I visited the original plant, this year, the 5th; it was loaded with fruit. The color is against it. For productiveness and long continued bearing, it is one of the best. The owner had been picking from it five weeks. It is firm and good for canning, but not best in flavor.

JONES, of New York.—It is a tip growing berry, perfectly hardy, very firm and productive.

Burn's Seedling.—WIER, of Illinois. This is a Kansas seedling of A. M. Burns, of Manhattan. It stands any amount of drought and heat, which is its strong point. Quality and size medium.

Kirtland.—(An old variety but not on the list.) HAYDEN, of Illinois. I have found it one of the most reliable varieties. The earliest, quite productive, and about as hardy as the *Philadelphia*.

EDWARDS, of Missouri.—A neighbor of mine raises it for market. It is of a bright red, and prolific.

PURDY, of New York.—It is the earliest red raspberry; but two or three pickings clean it out.

HAYDEN, of Illinois.—I pick it for at least three weeks.

EDWARDS, of Missouri.—Ten days to two weeks is about its season.

HAYDEN.—I have half an acre that yielded at the rate of \$600 to \$800 per acre. I had heavy pickings for two weeks.

Highland Hardy.—FERRIS, of New York. It has attracted a great deal of attention in Eastern New York. It is very early, hardy, of medium size and bears transportation well.

PURDY, of New York.—I saw it in Ulster County last season. It was very vigorous and bore immensely. The *Hudson River Antwerp* is said to be giving out and this is looked to take its place.

—Are *Brandywine* and *Pearl* the same?

PURDY.—Not with me.

PLUMS.

Wild Goose.—TRANSOU, of Tennessee. Almost free from curculio. Ripens from middle to latter part of July [June?].

ROSEMOUNT, of Tennessee.—We shipped it to Chicago about 20th of June. It is very hardy, bears transportation well, and we get \$10 per bushel for our first shipments.

EDWARDS, of Missouri.—I have known them to bear on trees three years from the seed.

MOODY, of New York.—It is worthless with us. I got ten trees eight years ago and got two plums this year. I have it correct.

BEATTY, of Kentucky.—Several varieties have been sent out for it. General Adair, of Kentucky, has paid a great deal of attention to it; and he says a dozen different varieties have been sent out for it. It is of the color and shape of the toy balloons.

ROSEMOUNT, of Tennessee.—We have been thoroughly *Wild Goosed* in Tennessee too. We have sent 27,000 boxes of plums from our stations, and are still shipping, at this season, plums that are called *Wild Goose*.

MILLER, of Illinois.—It is the handsomest plum in this market, and coming as early as it does is valuable.

WIER, of Illinois.—I have fruited it here five years. I got my stock of J. S. Downer, whom I believed in. I think Mr. Moody has not the true sort. At least twenty varieties have been sold as *Wild Goose*, and in the Chicago market all red plums are called *Wild Goose*. It has a peach-like leaf, bears young and is hardy after the first year.

BEATTY, of Kentucky.—It is the only plum we can grow.

German Prune.—JONES, of New York. No plum about Rochester does so well and brings so much.

FIGS.

MASON, of Michigan.—At Benton Harbor and St. Joseph, with a little protection, we are producing good crops of figs.

CURRANTS.

The currant worm was complained of.

PURDY, of New York.—Use white hellebore sprinkled upon the foliage and coal ashes, thick under the bushes.

JONES, of New York.—What is the difference between the *Black Naples* and the *Common Black*? The Canadians insist that the *Black Naples* is the largest and best.

MCLEAN, of Michigan.—The *Black Naples* is a stronger grower, of a brighter green, has a more prominent bud and the shoots of a brighter yellow.

Long Bunch Holland.—LITSEY, of Illinois. I got this currant of Samuel Edwards. Have picked it until frost. It is the most valuable I have.

WIER, of Illinois.—I coincide as to its being the most valuable. It stands wet and drought. I suppose the proper name may be *Long Bunch Cherry*. It does not grow as well from cuttings as others.

PURDY, of New York.—I would take for one variety the *Cherry*; for two I would add the *White Grape*. People fail by not having the soil moist enough.

BUDD, of Iowa.—I got the *Long Bunch Holland* eight years ago. It has a distinct leaf and habit. It has fruit on it now. The bunches are sometimes four inches long.

Dana's White.—PURDY, of New York, inquired after it.

BUDD, of Iowa.—It is peculiarly subject to borer.

GOOSEBERRIES.

WILLARD, of New York.—Some of the new American gooseberries deserve attention. *Downing* and *Smith's Improved* should be more universally

disseminated. They are larger and finer than the *Houghton*, and yet resist our climate.

McLEAN, of Michigan.—*Downing* has mildewed slightly. The *Mountain Seedling* is perfectly satisfactory. *Houghton's Seedling* is too much on the ground.

TRANSOU, of Tennessee.—The *Mountain* we like well.

JONES, of New York.—It does not bear well until old.

CHERRIES.

Rockport.—WILDER, of Massachusetts. One of the best in New England. The tree is free from gum.

Carnation— ———, of Pennsylvania. In Eastern Pennsylvania this, *Early Richmond* and the *Black Heart* are the only ones that are good.

Morello.—MILLER, of Illinois. Has attracted a good deal of attention in Northern Illinois.

LITSEY, of Illinois.—I have one to two hundred trees. This year they were quite full, while the *Early Richmond* had no fruit. This year the birds took them.

MILLER, of Illinois.—In wormy seasons it is more affected than the *Early Richmond*.

WIER, of Illinois.—It is the most valuable sour cherry. It has borne four or five times as much as the *Early Richmond*. Let them hang late on the tree.

TRANSOU, of Tennessee.—In Tennessee, this and the *Early Richmond* are by far the best.

BLACKBERRIES.

Wilson's Early.—WILLER, of Massachusetts. Tender around Boston.

MASON, of Michigan.—Tender around St. Joseph but profitable. If winter-killed, it throws out side shoots that make a half crop.

PURDY, of New York.—Almost worthless with me. Does not fruit.

EDWARDS, of Missouri.—Worthless with me.

HAYDEN, of Illinois.—Worthless about Alton.

MILLER, of Illinois.—I have discarded it.

McLEAN, of Michigan. Does best on moist soils about St. Joseph.

Snyder.—OVERMAN, of Illinois. I have a favorable impression of it. It bears enormously. Was entirely hardy, even last winter. Not as large as *Lawton*. Quality good.

GASTON, of Illinois.—The leaf is dark. Some red in the young leaves. After 34 degrees freezing [below zero?] it produced fruit on some of the tips.

MASON, of Michigan.—Smaller than any of the cultivated sorts. Better than *Wilson*.

PURDY, of New York.—Of medium size, prolific and very delicious. Hardiness must generally be ensured by no late cultivation. Blackberries out of cultivation in the fence-rows, are hardy.

Dorchester.—WILDER, of Massachusetts. I have only *Dorchester*. It has more good qualities than any other. In grass planted around the boundaries, they do better than in rows. For family purposes it is the best. It has not failed, so cultivated, for twenty years.

Holcomb.—DEWEY, of Connecticut. What has been done with it.

WILDER, of Massachusetts.—It has done well with me.

Report of the Committee on Fruits Exhibited.

Your committee respectfully report that they have found a very large and varied exhibition of fruits from twenty-two States and provinces of North America, and embracing the whole range of fruits generally cultivated—from the hardy apples of the extreme North to the semi-tropical fruits of the Gulf Coast. The exhibition, as a whole, is much larger than any heretofore made by this Society; reaching the great number of five thousand eight hundred and seventy-five plates of fruit, according to the lists furnished to your committee. This would make a single row of plates nearly a mile in length, and far surpasses, as we believe, any similar exhibition heretofore made on this continent. There were three thousand five hundred dishes of apples, eighteen hundred of pears, forty-eight of peaches (besides large quantities in baskets in duplicate), one hundred and fifty-four of plums, two hundred and thirty seven of grapes, thirteen of raspberries, four of blackberries, nine of currants, one of strawberries, five of figs, nine of oranges, two of lemons, four of pomegranates, two of bananas, one of pine-apples, one of jujubes, one of olives, one of custard-apples, and one of dates.

Of this large amount the several States and provinces contributed as follows:

NOVA SCOTIA—nineteen plates of apples, seven of pears, eleven of plums, and one of grapes.

ONTARIO—twenty-five varieties of pears, from James Dougall, of Windsor.

MAINE.—From the State Pomological Society, sixty-eight varieties of apples and forty-seven of pears.

MASSACHUSETTS.—As usual, the old Bay State made a grand display of pears, which, for variety, good form and size, and beautiful complexion, had no superiors in the exhibition. Of this exceedingly valuable and instructive collection, Marshall P. Wilder exhibited two hundred and seventy varieties, of which the *Souvenir du Congrès*, *Doyenne Boussock*, *Beurre d'Anjou*, *Clapp's No. 20*, *Tyson*, and *Barbancinet*, were worthy of especial praise. Hovey & Co. had one hundred and fifteen varieties. The Cambridge Horticultural Society, by Hervey Davis, had seventy varieties, generally very fine, of which *Clapp's Favorite*, *Flemish Beauty*, *Boussock*, and *Beurre Bosc*, were particularly noteworthy. Benj. G. Smith, of Cambridge, had eighty-four varieties: a choice collection very well grown—*Flemish Beauty*, *Bartlett*, and *Clapp's Favorite* being superior. F. & L. Clapp exhibited fifty varieties of seedling pears, which were worthy of attention from the number of new varieties of great beauty among them. Your committee made no tests of quality, but call attention to numbers 15, 24, 25, 36, 50, 111, and 117, as possessing unusual attractiveness of form and color. The tables of the amateur cannot fail to be enriched by the addition of these very beautiful pears. The fine lot of *Clapp's Favorite* shown was one of the most superb dishes of fruit ever exhibited. The collection shown by Robert Manning, of Salem, was of singular interest to the pear-grower, consisting of four varieties grown on trees more than two centuries old, and happily labeled "Centennial Pears." These venerable trees, which are still fruitful after living through the whole period of our national history, suggest the wonderful adaptation of the soil and climate of Eastern Massachusetts to the culture of the pear. J. W. Manning contributed twenty-three varieties of pears and thirty-four of apples: total of pears for the State, six hundred and twenty-six plates.

CONNECTICUT.—This State sent fifty-three varieties of apples and twenty-nine of pears, contributed by P. M. Augur, of Littlefield.

NEW YORK sent one hundred and ninety-seven dishes of apples, four hundred and ninety-two of pears, forty-eight varieties of grapes, and one hundred and six of plums. Of these, Ellwanger & Barry sent a superb collection of two hundred and fifty varieties of pears and fifty-seven of plums. Greater praise cannot be given to this collection, as a whole,

than that it equalled the exhibitions usually made by these enterprising pomologists. But a few varieties merit special mention, among them the *Souvenir du Congrès* was the most noticeable for extraordinary size and fine appearance; *Beurre Gris d'Hiver*, *Boussock*, *White Doyenne*, *Beurre d'Anjou*, *Chairgeau*, *Flemish Beauty*, *Pratt*, *Beurre Hardy*, *Louise Bonne*, *Dix*, and *Ananas d'Été*, were all noticeably excellent, while the *Tyson* were the best ever seen by your committee. E. Moody & Sons, of Lockport, had a valuable collection of one hundred and fifty-seven varieties of apples, one hundred and forty-two varieties of pears, and forty-nine varieties of plums, making the largest number of varieties of fruits shown by any exhibitor. We noted a large and showy seedling plum of good quality on this table: and indeed this entire collection of plums, as well as their neighbors from Ellwanger & Barry, deserve especial commendation. G. Zimmerman, of Buffalo, exhibited forty plates of apples, and seventy-six of pears. Alfred Bridgeman, of Newburg, fourteen varieties of pears; and J. H. Ricketts, of Newburg, forty-eight varieties of seedling grapes; a very interesting and showy collection.

OHIO showed us forty-five varieties of pears, from A. Fahnstock, of Toledo, and one plate of grapes, from Geo. W. Campbell, of Delaware.

MARYLAND was represented by one hundred varieties of pears, grown by W. D. Brackenridge, a very worthy collection, and forty varieties of apples, by Geo. Balderston.

THE DISTRICT OF COLUMBIA had a fine collection of seventy-four varieties of pears, from John Saul, among which *Sheldon*, *Beurre Hardy*, *Kirtland*, *Des Nonnes*, *Baronne d'Mello*, and *Pitmaston Duchess*, were superior.

VIRGINIA has gained much honor in all the late exhibitions of this Society, and now fully sustains her reputation as a fruit-growing State of the first class. Col. Ed. Daniels, of Accotink, on the Potomac, showed fifty-two varieties of grapes, and forty-five kinds of pears, among which were *Bartletts*, *Duchesse d'Angoulême*, *Seckel*, *Beurre Bosc*, *Howell*, *Beurre Diet*, and *Beurre Langelier*, which any man might feel pride in growing; some of these were the finest pears in the exhibition. Col. S. E. Chamberlin, of Loudon County, exhibited one hundred and eighteen varieties of apples, a very interesting and instructive collection, embracing some imposing specimens, which were fit neighbors to the pears from the banks of the Potomac. There were also fine *Duchesse* from G. F. B. Leighton, of Norfolk,

Bartletts from D. O. Munson; and a collection of twenty-seven kinds of apples, twenty-five pears and twelve of peaches from unknown parties.

KENTUCKY.—The Kentucky Horticultural Society sent twenty-nine sorts of apples.

TENNESSEE modestly sent fifteen varieties of apples and five of peaches, by B. F. Transon, of Humboldt.

From MISSOURI we found twenty-five varieties of grapes, from Isidor Bush, of St. Louis, and a collection of fruit, from Dr. E. R. Moresod, of Nevada, Vernon County, embracing one hundred and seventy varieties of apples—a very good collection,—seventeen kinds of pears, a small lot of peaches, and several varieties of grapes. Like her sister States, Missouri suffered greatly from the disastrous freeze of April 17th, which explains her limited representation.

IOWA sent one hundred and sixty-six varieties of apples.

NEBRASKA, by her State Horticultural Society, exhibited four hundred plates, embracing one hundred and fourteen varieties of apples, twenty-five of pears, one of plums, and twenty of grapes.

The MINNESOTA Horticultural Society had an instructive display of hardy fruits, that will stand the rigorous climate of the extreme Northwest, embracing thirty-three varieties of apples, a portion of them crabs, eleven kinds of native plums, ten varieties of raspberries, nine of currants, and one of strawberries; in all respects an instructive display.

WISCONSIN was represented by Geo. P. Pepper, with one hundred and thirteen kinds of apples, many of them seedlings of his own production; and by an attractive table from the State Horticultural Society, with about two hundred sorts of apples, five of pears, and four of grapes. These fruits were generally meritorious.

ILLINOIS had about one thousand one hundred and twenty-five plates of apples in the exposition, embracing over five hundred different varieties, but, owing to a lack of space to show the unexpectedly large quantity of fruit contributed, some of her collections were not unpacked. The Adams County Horticultural Society, showed fifty-four kinds of apples, and two of pears; the Warsaw Horticultural Society, one hundred and forty sorts of apples; the South Pass Horticultural Society, one hundred and fifty varieties of apples and fifteen of pears; G. W. Endicott, of Villa Ridge, thirty-two varieties of apples,

and fifteen of pears; J. Capps & Son, Mt. Pulaski, fifty-two of apples; A. Bryant, Jr., of Princeton, fifty-one of apples; A. C. Humphreys, of Galesburg, fifty-three of apples; Dr. E. S. Hull, of Alton, nineteen of pears, and W. C. Flagg, of Moro, about three hundred kinds of apples; neither of which last two lots were unpacked for reasons above stated; also a collection of one hundred and fifteen varieties of apples, from N. Overman, of Canton; seventy-five varieties of apples and twelve of grapes, from Mr. Piper, of Ogle County; and one hundred and twenty-five varieties of apples from D. B. Weir, of Lacon.

MICHIGAN made a grand exhibition under the name of the State Pomological Society. Her fruits were from ten different counties and a large number of exhibitors, and embraced many very handsome lots of apples, the finest plums in the exhibition, grown in the Grand Traverse Region, a large quantity of very beautiful peaches, a large variety of grapes, the largest blackberries ever seen by your committee, and a plate of figs grown in the open air, on the balmy shores of Lake Michigan! The entire display covered nearly nine hundred plates, and occupied much the largest space held by any State.

CALIFORNIA was not very generous of her golden-skinned fruits, but sent one interesting collection: sixty-five varieties of seedling pears, grown by Bernard S. Fox, of San Jose.

TEXAS sent a small box of fruit from Mr. R. E. Talbot, embracing *Bartlett* pears of good quality, and a fine looking variety of *Greening* apples.

MISSISSIPPI exhibited a fine lot of hardy and semi-tropical fruits, grown and collected by Mr. D. Redmond, which attracted great attention, and is worthy of all praise. Here were figs, pomegranates, bananas, custard-apples, lemons and oranges, several new varieties of each, grown side by side with apples, two kinds, and pears, seven varieties, all of which were fine specimens. If we may judge from the variety and excellence of these fruits, representing two zones, the Gulf Coast must be a paradise for the fruit grower.

Respectfully submitted,

J. I. MAXWELL, of New York,
 PARKER EARLE, of Illinois,
 HERVEY DAVIS, of Massachusetts,
 D. REDMOND, of Mississippi,
 GEO. B. THOMAS, of Pennsylvania.

The South Park.

At 4 o'clock, the hour fixed for visiting the South Park, it was raining heavily.

H. W. S. Cleveland, landscape artist of the park, stated that the rain would prevent the anticipated trip to-day, and extended the invitation for any hour the Society might fix upon to-morrow. He warned the Society not to expect too much, as the park was but two years old and possessed no natural advantages, except a low ridge covered with oaks, which, as well as those adjoining the park, were dying from the top down.

It was voted to visit the park at 2:30 P. M. to-morrow if the weather permitted.

Report Upon Essays.

MR. FLAGG, of Illinois, from the Committee appointed to examine and report upon the Essays, &c., made the following report, which, after some discussion, was, on the motion of Mr. Purdy, of New York, adopted.

Your Committee on Essays, &c., recommend that an evening session be held at 7:30 this evening, and that at that session the following matters be taken up, and completed at the session to-morrow:

1. Orange Culture in Florida: By P. P. BISHOP.
2. THOMAS MEHAN—On Fungi in the diseases of Fruit and Fruit Trees.
3. E. S. HULL—On Root Pruning and How to Grow the Fairest Fruit.
4. JOHN J. THOMAS, of New York—Essay on Cultivation of Orchards.
5. D. S. REDMOND—Essay on the Fruits of the Gulf Coast.
6. C. V. RILEY—The Importance of Small Things in Horticulture.
7. The Production of Hardy Varieties of Fruit from Seed.
8. Nova Scotia Fruits: By C. C. HAMILTON.

Orange Growing in Florida.

By P. P. BISHOP,

President of Florida Fruit Growers' Association.

It is unquestionable that orange trees were planted in Florida long before the landing at Plymouth Rock. And yet orange growing, as an American industry, is but now beginning to have a recognized existence.

Of course, the progress of this culture has been hindered by all the causes which have operated against the settlement of the State and the develop-

ment of its resources. The territory of Florida was first Spanish, then English, and then Spanish again, before it was ceded to the United States; and, at every change of flag, there was an exodus of a great part of the population. A few years after the final cession the troubles with the Seminoles commenced, and, during the long period of their continuance, Florida was thought of only as the scene of horrible conflicts and midnight massacres. Then a few years of rapid progress intervened, many planters from South Carolina and other cotton States moved in, with large forces of laborers, and entered on courses of prosperity. Then the civil war threw its shadow over the land and retrogression again took the place of progress.

The immigration and development which were realized during the brief periods of quiet, promised very little in the department of horticulture. That high pursuit demands the skillful labor and loving care of freemen. When we remember, in addition to these things, what a barrier slavery was to immigration from the North and from Europe, we need no further explanation of the fact that orange growing in Florida is yet an infant industry.

Nevertheless, there were a few men in the State, long ago, who distinctly perceived the possibilities of this pursuit, and anticipated for it something like the favor to which it is now rising. A number of small groves at St. Augustine, were planted and cared for as sources of income. The fine groves now owned respectively by Dr. R. G. Mays, of Orange Mills, and Col. H. L. Hart, of Palatka, were planted about forty-five years ago. The Watson grove, at Picolati, was established a few years later. Dr. Spear planted what is known as the "Grim Grove," at Mellenville, in 1846. About the same time, Hon. E. J. Harris, now of Ocala, engaged in a similar enterprise in the lake region of Sumter County, and the same was done, on a small scale, on the eastern side of Lake Monroe. The Dummit and Burnham groves, on Indian river, also were well advanced some time before the war. Hon. Wm. Edwards, of Micanopy, should be mentioned as an early and unwavering believer in Florida oranges as a source of profit. For many years he stood quite alone among the men of his community in maintaining that the orange would ultimately become a source of immense revenue to his native State. Col. F. L. Dancy, of Orange Mills, is entitled to similar credit. Some twenty years ago he selected his present location on the St. Johns, because of its suitability to the orange culture. I need only name Mrs. Stowe's small grove at Man-

darin, and the one established by Hon. D. L. Yulee, at Homosossa, and say in general terms, that a very little was accomplished in the same line in the vicinity of Tampa, in order to complete a fair exhibit of the enterprises which, under the old order of things, indicated a real confidence in orange growing as a business.

The aggregate area covered by the *ante bellum* groves, established with a view to profit, is believed to be not more than seventy-five acres. It is true, too, that none of those groves were treated as principal sources of income. Consequently, they received only such care as could easily be diverted from the main pursuits of their owners; and little or no attention was bestowed on the best methods of gathering and marketing the fruit. By reason of these things, there was no realization of such results as would have impressed the popular mind with the profitableness of the culture.

Soon after the close of the war, a change began to take place. Some of the owners of the old groves, stripped of the revenues which they had been accustomed to derive from other sources, turned to their formerly neglected orange trees as their only means of support, and were themselves astonished at the generous responses which they received. Visitors from the North began to test the fruit, and to institute inquiries concerning the productiveness of the trees. Mrs. Stowe established herself at Mandarin, and charmed the Northern public with pictures of Florida, in which the golden fruit was the central figure. Solon Robinson traversed the State with his inquiring spirit, and in his practical, statistical manner, presented the results of his observations in *The Tribune*, summarizing his conclusions as to orange culture in this language: "It is safe to buy an orange grove in full bearing on the basis of \$100 per bearing tree." These things could not fail to produce a marked effect. Many enterprising men were immediately attracted to a pursuit which promised so handsomely. Moreover, on account of improved methods of culture, better handling of fruit, the opening of new markets, and reductions in the cost of transportation, better and better results have been achieved from year to year. Hence the number of beginners in orange-growing has steadily increased. I cannot give more than a conjectural estimate of the entire area now under cultivation in orange groves within the borders of Florida; but I think I shall not greatly err in saying that it approaches 3,000 acres.

The belt on which the new groves have been established lies between the 28th and 30th parallels

of latitude; and, thus far, the operations have been confined almost exclusively to the eastern half of that belt. The points on the St. Johns presenting the best natural conditions, have been seized upon with great eagerness. Many operators have been attracted to the vicinities of Lake Monroe, Lake Jessup and Lake Apopka, in Orange County. Others have evinced a preference for the shores of Halifax and Indian rivers. The presence of extensive wild orange groves has occasioned large investments of capital at Spring Garden, in Volusia County, among the lakes of Sumter County, and on the borders of Orange Lake in Marion County.

The first operations in grove-making, under the new order, were confined chiefly to the planting and budding of stumps taken from wild orange groves. There was scarcely any available nursery stock in Florida; and very few of the operators could content themselves with the prospect of waiting for fruit until trees could be raised from seed and brought into bearing. As might have been expected, many partial failures have resulted from the unskillful handling of stumps. In removing such a stump from its native place, for instance, a man cuts the brace roots within four inches of the crown. Then, perhaps, he allows this mere club to be exposed to the sun several days, and finally puts it in position with the confident expectation of seeing it loaded with fruit in a short time. In one case three thousand stumps were taken from a wild grove and planted after this fashion, and all but five of them died. But all danger is not at an end when the roots have taken hold of the ground and the stump has begun to form a new top. Many thousand trees have been sacrificed by the cutting off of sour shoots and the starting of buds too late in the season. In such a case the bud makes a rapid growth, but is still exceedingly tender when there is reason to apprehend more or less of frost. Great losses were incurred in this way before the severe frosts of Christmas, 1868, and Christmas, 1870. Still quite a number of brilliant successes have been achieved by this method of grove-making. A large part of the orange crop, now growing in Florida, will be gathered from stocks planted and budded since the beginning of 1867. Such trees ordinarily begin to produce when the sweet tops are three, or at most, four years old. The first crops are light, but, on good soil and with proper care, there is a certainty of rapid annual increase. It is becoming difficult, however, to procure wild stumps near at hand, except in a few localities; and there is great danger of losing them when they are kept out of the ground

for a considerable period. The feeding roots of the orange tree are exceedingly fine fibres, and they are soon dried up and destroyed by exposure to the air.

A very great advantage is possessed by those who enjoy the ownership of native groves. These are found almost invariably on excellent land. These trees can be cut off and budded or grafted in their original positions, and then, through the operation of their immense system of roots, if they are properly cared for, large new tops are formed with amazing rapidity. I know hundreds of such sweet tops, only two years old this summer, which are now bearing fruit. I know a little grove, made in this way, which gave its owner one dollar per tree when the sweet tops were three years old, two dollars per tree when they were four years old, and four dollars per tree when they were five years old. It is proper to say, however that these trees are on land of the best quality, and have been favored with perfect culture.

But few grove-makers, comparatively, can avail themselves of the advantages growing out of the possession of a wild orange grove. The whole area, occupied by such groves in the parts of Florida now accessible, is of limited extent; and nearly all of these groves are owned by men who intend to keep them and have already begun to improve them. The market value of wild orange land has risen one thousand per cent. in eight years, and three hundred per cent. in the last three years. In fact, I know of but a few parcels of such land that are offered for sale at any price. Before the war land covered by wild orange trees was cleared and burned over to make cotton fields, as if it had been forest-land of any other character. Now, a man who owns a few acres of such land with means to improve it, believes himself to have a fortune in the near future. He expects to clear a one thousand dollars per acre from his grove before his neighbor, who begins with nursery-stock, will have any fruit to sell.

A majority of those who are to plant orange trees in our State hereafter, will have to rely chiefly on seedlings which are not yet in existence. There is not a really extensive nursery in Florida. A considerable number of men are combining, on a small scale, the raising of seedlings with the development of groves. It is true, too, that a few of the owners of wild orange groves are budding the wild seedlings which have sprung up since the shade was cleared away from their land. Still the present prospect is that all the nursery-stock now available will be exhausted by the demand of next winter.

Until recently the budding of sweet seedlings has been practised only to a limited extent; and even now many intelligent men see no advantage in it. It is undeniable that, as a rule, if you plant the seed of a good orange you will get good oranges from the trees thus produced. But some operators are not satisfied with a *probability* of good fruit. They bud their seedlings in order to determine definitely what the quality of their oranges shall be. It is generally believed also, that budding ensures earlier bearing by two or three years. But, on the other hand, a question is raised as to the desirableness of early productiveness. It is asked, "Is it not best that the making of wood should be the whole business of an orange tree for the first ten years of its life?" The settlement of many such points must await the affirmations of future experience, and it is well that, at this stage of the culture, there are wide differences of opinion giving rise to corresponding differences of method.

Most of the sweet oranges, now grown in Florida, are of the same general type. There are a few trees producing the Navel orange, and some which bear a peculiar fruit called the "Tangerine orange." The trees in the grove of Dr. Mays, were brought from Spain, and were unquestionably budded before they were imported. He has three distinctly marked varieties—a very small and very sweet, round orange; an oblong orange, also very sweet, and a large round orange not so sweet, but of a livelier flavor than the others possess. On the whole we think we cannot do better than to take buds or grafts from healthy trees which bear the finest specimens of what may be called the common sweet orange of Florida.

Orange growing, of course, has its share of such perils as are incident to all branches of fruit-culture. In 1835, orange trees, one hundred years old, were killed to the ground by frost. The roots were not injured; but new stalks sprung up and began to bear fruit again in three years. Injury was done to fruit and to young trees and buds, by the two Christmas frosts already mentioned. According to my information, these are the only instances in which Florida orange-growers have suffered largely from that cause. At one period the scale insect was very destructive. But it is now believed, by those who are best informed on the subject, that good culture and watchful care will secure immunity from such injury. Some alarm has been occasioned by a disease called "die-back," which manifests itself in the young immature wood, and it is not dissimilar in its symptoms to pear-blight. In many instances

this disease has been traced to specific causes, and trees badly affected with it have been wholly cured.

It is hardly possible at this time, to form even an approximate estimate of the area over which the orange culture will be extended. It is certain that there are many millions of acres in Florida which can never be successfully devoted to that pursuit. I am convinced, also, that the sections which offer natural conditions of the first order, are both few and small. I ought to say, however, that many intelligent men differ from me in this particular, and maintain that orange-growing can be made profitable on nearly all the dry land in the State.

That our oranges are absolutely unrivaled in the markets of the United States, is now, I believe, an admitted fact. At Philadelphia, in Fulton Market, and at various places in Central New York, the common sweet oranges of Florida have sold at

one dollar per dozen, when oranges from the West Indies and from the Mediterranean were selling at twenty-five cents per dozen. We do not expect the imported fruit to stand in our way any more than the peaches now quoted at fifty cents per box stand in the way of those quoted at four dollars per box.

I have no hesitation in placing the present average annual income derived from easily accessible groves in full bearing, at one thousand dollars per acre. I know instances in which this rate has been greatly exceeded. It is not best, however, for the producer to expect a net income of more than five hundred dollars per acre—one hundred trees to the acre, five hundred oranges to the tree, and one dollar per hundred for the oranges above the cost of production. This estimate seems absurdly low to many of my friends; but I do not care to burden my imagination with any larger figures.

Adjourned until 7:30 P. M.

SECOND DAY—EVENING SESSION.

Vice-President PARRY, of New Jersey, in the chair.

The Society then listened to a talk upon

Fungi and Fruit Diseases—Are they Cause or Concomitant?

BY THOMAS MEEHAN,

Editor of the Gardener's Monthly.

"Mr. Chairman, Ladies and Gentlemen:—Fungi, as a general thing, love a cool and moist atmosphere, very unlike this terribly warm evening on which we have met here to have a talk about them; but, if you will give me your kind attention for a little while, I will try to make the subject as entertaining to you as these unfavorable circumstances will permit."

"When the Society met at Richmond four years ago, some one raised this question, and a committee was appointed, of whom I was one, to investigate and report at Boston. I was sorry that I had been selected for this duty, as botany in relation to the lower cryptogamic forms is not one of my specialties, and it requires such a person to treat the subject properly; and not only this, but one well skilled in the use of the microscope as well. I can there-

fore say little of my own personal knowledge, except in so far as the manifestations of fruit diseases accord with the known phenomena of fungoid development."

He said he went to Boston two years ago, with a large number of specimens to illustrate remarks he had prepared his mind to offer; but the meeting found so much other matter of a more interesting character to care for, that there was no time left for this. He supposed it would be the same on this occasion, and so brought no specimens, nor prepared anything for the occasion. But as he had been called on, he would offer the meeting such desultory thoughts as might occur to him.

First he would warn them that this was peculiarly a topic on which one should clearly see the relation between cause and effect, or they would surely be led astray. It was the chief cause of all the differences of opinion about diseases which so prevailed. He would illustrate what he meant by a little story of an occurrence that happened to him a few years ago: His good friend, Prof. Riley, now present, was walking with him near Pike's Peak in Colorado, when they met a fair lady with a wreath formed of a male hop vine entwined around her brow. He had never seen the hop vine look so beautiful, and he

was led to get a root to grow expressly for its beauty, and having no pole to train it on that would be enduring, he planted it at the base of a large *Prince's St. Germain* pear, that never bore anything but hard, knotty, and worthless fruit. The vine was now on the top of the tree, and to his astonishment the tree had this season borne the most perfect pears one could desire. He could not understand the influence of the hop on the health of the tree, till he looked around him on that large class of our fellow citizens who used decoction of hops freely and as a beverage. "Then," said Mr. Meehan, "I understood the whole thing. Here I saw men who were always healthy—never knew what disease is—hardly die, but dry up naturally and almost blow away, and then I could see how the hop had also saved the pear. (Laughter.) Don't you believe it? (Renewed laughter.) No? well neither do I of course, and I offer it to you simply as a sample of the reasoning of the people about these very things, and of which one can hear nearly every day. I hope that we shall reason more closely than this to-night, and we will start with a consideration of that terrible disease.

FIRE BLIGHT IN THE PEAR.

That this is of fungoid origin is now clear from the researches of Dr. J. Gibbons Hunt. Dr. H. is President of the Biological Section of the Academy of Natural Sciences of Philadelphia, an excellent botanist, and one as well skilled in microscopy as you and I are in the pruning-knife. He finds that a very minute fungus germinates on the outer bark, enters the structure, destroying the cells as it goes, till it reaches the alburnum, and then it penetrates clear to the pith by the way of the medullary rays, totally destroying the branch from centre to circumference. Dr. Hunt was not one of those who believe much in fungoid diseases. Indeed, I believe Dr. H., if he really had any prejudice at all, was impressed with a presumption that the fungus found in pear blight was but a follower of diseases. But there is no other conclusion here than that arrived at by Dr. H., that in the true fire-blight fungi are the cause of the disease.

The fire blight attacked large branches, destroying them rapidly, because all connection with sap-collecting roots was cut off; but there were numerous diseases of the pear similar to fire blight but not so destructive because the fungus did not penetrate deep enough to sever all connection with the roots. It may be that fungi causing these appearances are forms of the other fungus, for it is now known that many characters are assumed at various stages of

growth by these little plants we know as fungi. One of these diseases appears as a sort of bark scaling at a period anterior to that when the pear becomes naturally rough-barked, which is not till its twelfth year. This does not penetrate deep enough to affect seriously the inner bark. Still that it has a bad effect on health is apparent from the fact that trees with it have their leaves turn of a red or brown color early in the fall, showing that their nutrition has not been perfect. Another form attacks the green bark of five or six year old branches, making dead patches of an inch or more over surrounded by the healthy green bark. Where the destruction terminates there is a separation, and the appearance is much as if the irregular patch had been marked by the edge of a knife. Still another form seems to confine itself to the spurs. It eats out the structure at the junction with the main branch, and gives the tree a peculiar appearance. Dead leaves and spurs everywhere, but the main shoots and branches healthy as they can possibly be.

CRACKING IN THE PEAR

was also often caused by a fungus. I have had no chance to get the one I am now about to refer to microscopically examined, but there are some attendant phenomena which stamp it as clearly of fungoid origin. Early in summer, the leaves still appearing quite healthy, pale spots may be noticed in the leaves when held up to the light. There is some change going on in the cellular matter. It soon dies, and there are black spots on the leaves. The leaves are fully expanded by this time, and the disease remains as black spots. Now the fruit we call a pear is, morphologically, but a bundle of leaves. The germ of the disease is therefore early there as in the true leaves. It develops in the growing fruit at the same time as it is developing in the leaves. It destroys the cuticle just in the same way. But the fruit is different from the leaf. It keeps growing on. The dead portions cannot grow, and so there is no alternative but to crack. There are of course other causes that are not fungoid which lead to cracked fruit. He had seen *Beurre Giffard* crack through to the core, it seemed almost in a single night, but the peculiar form of cracking he referred to certainly came from the destruction of the cuticle in spots, by what had all the appearance of minute fungi.

There was yet another troublesome fungoid disease known as the

LEAF BLIGHT,

and this was particularly troublesome to the raiser

of seedling pears in those places where the land was liable to get very warm in the summer time. The little fungus was easily seen under a common pocket lens, and a very beautiful one it was. When mature they were like miniature volcanoes, with the crater beautifully fringed around the outer edge. I believe this is one of the stages or forms of *Rastelia cancellata*, and I think it will only germinate so as to be in the injurious condition we find it, when the thermometer under ground rises above 75°. At any rate, if we sow pear seeds among corn, among apples or other strong growing things, under a little brushwood—or under a shaded hot-bed sash—or anywhere where the ground does not get very hot this fungus does not prove troublesome.

APPLE BLIGHT.

The fungoid diseases of the apple have not hitherto proved very troublesome, but there is one which is evidently allied to that which causes fire blight in the pear, only that it appears to confine itself to the one or two-year-old branches, instead of those of more advanced age. It is of western origin. I saw it first in Illinois about ten years ago, and with an extensive travel over most of the country, I am pretty well sure that it had not crossed the Alleghenies at that time. Since then it has gradually made its way East, and in 1874 I saw it for the first time in Southern Maryland. So far I have not seen any in Pennsylvania. This season at Windsor, Canada, I saw an orchard suffering as badly as any pear orchard, and with all the symptoms of true fire blight, large as well as small branches suffering alike. In the same orchard also was some spur blight as before described among pears. I have little doubt these are all forms of the same fungoid development, and the same in the apple as in the pear.

PEACH YELLOWS.

In the peach the worst form is that which produces the disease known as the yellows, and here I would again remark that we must not look to one cause alone as producing disease. That a fungus will produce the yellows I am satisfied, but I am by no means satisfied that all peach trees with the yellows are so diseased through fungoid agency. I was first led to suspect that fungi would cause yellows by having some white spruces growing on a piece of land where some English alders had been grubbed out. Fungi grew on the decaying alder roots, and spread to the roots of the spruces, and in all these cases the plants took on a golden sickly hue. The ground dug up about them had a mushroomy smell, and with a lens the spruce roots could

be seen in the snake-like folds of the thready fungus, and all the young fibres so attacked died, leaving only the coarser roots alive to do all the active work. Some shovels full of this earth placed at the roots of the Norway spruces, produced the following year the same yellow sickly tint in them, and I have some of them left yet to show to my friends as awful examples. Since then I have dug up around the roots of peaches with the yellows, and find a thready fungus, mushroomy smell, and dead fibres, just as in the yellowed spruces. Of course other things as well as fungus must produce a disease like this. If a plant is growing on wet ground, the young fibres rot, and the leaves become yellow; or where the roots do not rot, but the ground is poor, then also is there a yellow tint. In the one case the plant cannot eat, in the other there is nothing to eat; but the yellow tint is alike in both, but in the case of the fungoid attack the element of the fungus is apt to pervade all the plant's system, even to penetrating buds and seeds, so that it may be propagated and carried to distant localities.

GRAPE FUNGI.

It is much with the grape as with other fruits, fungi is sometimes the cause as well as often the consequence of disease. There is no doubt whatever that anything that will injure the roots of a grape vine, whether it be *Phylloxera*, over dampness, extra richness, or other causes, will result in fungoid diseases to perhaps both fruit and vine, but the labors of intelligent men in the matter of the *Oidium* leave no doubt that vines in every way healthy can fall a prey to this destructive pest when it once gets fully under way.

GOOSEBERRY MILDEW.

"I cannot," he said, "go over the whole ground of fungi and fruits, but will refer to the mildew on the gooseberry. This attacked certainly healthy trees, though like the leaf blight on seedling pears, it never was troublesome except where the soil was heated to a higher temperature than 75°. If corn-stalks, stones, or even old boots and shoes, as I have seen, are piled up under a gooseberry bush, so as to keep the soil cool, it will never mildew."

He concluded by observing that he thought the few facts he had given proved that fungi were often the cause as well as the concomitants of fruit diseases.

DISCUSSION.

Mr. C. M. Hovey remarked that in the opening Mr. Meehan had said that fungi liked to grow in cool moist places, but concluded by saying that they

only grew when the temperature was over 75°. How could these confusions be reconciled?

Mr. Meehan replied by the fact that there were different species among fungi, and just as some flowering plants lived in the arctics and some in the tropics, so did different fungi seek different temperatures for their development.

Mr. C. M. Hovey further said, that he did not take any stock in Mr. Meehan's notion that hops were a cure for the cracking in the pear, or that fungi had anything to do with the cracks. He had been a cultivator of the pear for over forty years, and he had noticed that when there was an extra wet season, while the fruit was swelling, cracking prevailed to a greater extent than under any other circumstances. And the reason of this was plain: the roots continued to absorb moisture when, by the peculiar condition of the atmosphere, there was little evaporation going on, and thus more moisture was drawn into the plant's system than the plant required, the tissue then became distended, and had to burst. It was then that fungi followed, and they were therefore the followers of diseased conditions and not the cause. He would say that cracking in the pear was due to unfavorable climatic conditions with which fungi had nothing to do.

Mr. Meehan replied that he thought he had already made allowances for such cases as Mr. Hovey alluded to. The only difference between himself and his friend was that while he thought there were many causes of cracking and other diseased appearances, Mr. Hovey seemed to think there could be but one. An argument on this point could only be paralleled by supposing a Mahomedan to suddenly find himself on the streets of Chicago, and on inquiring what made a man stagger so, learn that it was from drinking beer. Another Mahomedan under the same circumstances might be told the drunkenness came from drinking whiskey. He could imagine how earnest and warm would be the discussion between these two on their return to their own country as to whether whiskey or beer would cause a man's head to swim. We knew both had nearly the same result, and so a crack in a pear would sometime precede diseases, from perhaps climatic causes, while at others, as he had already shown, the fungus preceded and caused the disease. In regard to the young pear fruit absorbing more water than it could hold, as a cause of cracking, Mr. Meehan said, it was pretty as a theory, but rather an impossible one. It was only paralleled in the conversation of two boys who had been at the jugglers. "How," says one, "can he get a quart of

water into a pint bottle?" "He cannot," the other replied. "But supposing he did, how could it be?" "But it cannot," persisted the third. "But supposing he could," still the other insisted. "Why," was the reply, "then the bottle would burst." Mr. Hovey's pears might possibly burst if nature attempted to put its quart of sap into a pint of pear, but for us it is necessary to know that nature really does attempt these impossible things. He knew his friend Hovey would excuse these plain illustrations. He employed them only because he had failed to convey, as he intended, his ideas, in the early part of his discourse, and he thought there could be no mistake when illustrated in this way.

Mr. HARRISON, of Pennsylvania, stated that he had known of fruit of the White Doyenne which had commenced to crack before fully grown, being made to ripen free from all blemish, by the application of a heavy dressing of ashes as soon as the fruit began to crack.

Mr. SYLVESTER, of New York, said he had failed of success in a like experiment.

The Fruits of our Gulf Coast.

BY D. REDMOND,

Corresponding Member of the New Orleans Academy of Sciences, Vice-President of American Pomological Society for the State of Mississippi, etc.

From the coral reefs near Cape Sable, on the extreme edge of the Florida peninsula, to the mouth of the Rio Grande, on our Mexican border, stretches a vast semi-circular sea-margin of many hundred miles, generally known as the "Gulf Coast."

This far-reaching coast-line of the great "Mexican Sea" is indented by innumerable bays, estuaries, bayous and harbors; it embraces almost every variety of soil, from the richest alluvial and shell "hammock" to the poorest "pine-barren," and extends over three or four degrees of latitude, including nearly all the maritime portions of the States of Florida, Alabama, Mississippi, Louisiana and Texas. It possesses a climate almost tropical in average temperature, but remarkable for its mildness and equability—the heat, which, otherwise might be oppressive and enervating, being so toned down, modified and tempered by the fresh breezes of the Gulf, that it is rarely too hot in summer or too cold in winter. Indeed, it may well be questioned if a more delightfully salubrious and healthy country can be found anywhere on the globe than most of our Gulf Coast; and it would not be difficult for me to prove that no region of similar extent, east of the Rocky Mountains, can at all compare

with this Coast in the great variety and number of its vegetable, agricultural and pomological productions.

It is with the Fruits of this vast and interesting region that I now have to do; and considering that it may be interesting to the members of our Society and the general public to be furnished with a reliable account and description of such of these as are now in cultivation or can be easily raised on this coast, I will proceed to enumerate, as briefly as possible, the tropical, semi-tropical and hardy fruits with which I am acquainted—giving the localities of the different sorts—comparative value of varieties—fitness for distant markets, home use, etc., etc.

TROPICAL FRUITS.

PINE-APPLE (*Bromelia Ananas*).—This delicious tropical fruit—which can only be enjoyed in perfection when allowed to ripen on the plant—has been cultivated with considerable success on the small islands and “keys” near the extreme south and southwest edge of Florida, more particularly in the neighborhood of Key West. The pine-apple plant is very easily propagated, comes rapidly into bearing, and may be made a source of very considerable trade and profit when its culture is extended to its utmost limits. It must be remembered, however, that it is strictly a tropical plant, not capable of enduring even the slightest frost; and that it can only be successfully grown south of latitude 28°. Properly organized colonies, or small communities, possessing the requisite capital and energy, could easily make pine-apple culture, in South and Southwest Florida, a certain success; but, heretofore, the remoteness of the most favorable localities from all commercial facilities—the difficulties attending transportation—and the almost total lack of social, religious and mail privileges, have deterred immigration and operated very seriously against isolated individual effort in this promising enterprise.

BANANA (*Musa sapientum*), and **PLANTAIN** (*M. paradisiaca*).—Both ripen their delicious and wholesome fruit somewhat farther north, and stand a little lower degree of cold than the pine-apple. Wherever the mean temperature reaches 70 to 75° of Fahrenheit, the banana and plantain can be raised very profitably; but these plants will thrive and the fruit ripen, with a slight protection, where the mercury descends to 45°, or even lower. Making this allowance for superior hardiness, and extending the range of the banana at least one degree north, the preceding remarks touching the culture of the pine-apple will apply to the very proli-

fic and healthful fruit now under our notice. It will be remembered that the great Humboldt calculated that, in its proper climate and under favorable circumstances, the yield of food from the banana when compared with wheat was as 25 to 1; and he also asserted that no plant grown on earth for human food could at all compare with this particular tropical fruit in combined productiveness and nutrition. There is a wide field for the profitable culture of the banana on the Gulf Coast of Florida, where it is a perennial plant, at all points south of latitude 25°. It also very frequently produces ripe fruit much farther north, as in the city of New Orleans; and sometimes, when slightly protected, on the coasts of Mississippi, Louisiana and Texas, where the plant is very generally cultivated for its highly ornamental appearance and beauty. As a sure and reliable fruit-producing plant, however, the banana can only be recommended within the geographical limits above mentioned—namely, near the Gulf Coast, and south of latitude 29°.

THE COCOA NUT (*Cocos nucifera*), the **DATE PALM** (*Phoenix dactylifera*), the **GUAVA** (*Psidium*), the **West Indian PAWPAW** (*Carica Papaya*), the **ANCHOVY PEAR** (*Grias cauliflora*), the **ALLIGATOR** or **AVOCADO PEAR** (*Laurus Persca*), and possibly other tropical fruits are cultivated to a limited extent, both for use and ornament, at the extreme end of the Florida peninsula; in the gardens at Key West and its neighborhood; but as yet, so far as I am aware, none of these fruits have been planted there on a large scale, nor attained any commercial importance.

SEMI-TROPICAL FRUITS.

SWEET ORANGE (*Citrus Aurantium*).—This almost universally-known and favorite fruit ranks deservedly at the head of this list, and is worthy of far wider and more careful culture than it has yet received among us. We can cultivate successfully every variety of the sweet orange known in America; and it is an important and noteworthy circumstance, that the seeds of the sweet orange from the West Indies, Southern Mexico, and other tropical countries, when planted on the Gulf Coast produce fruit far superior in size and flavor to that which we import from those countries or from Europe. This now well-established fact, and the ease and certainty with which fine native seedling orange trees can be produced, should encourage our people greatly to extend the propagation and culture of this noble fruit—this “golden apple of the Hesperides”—to its extreme northern limits. I find it quite difficult to define these limits with much accuracy; having

seen and eaten fine oranges grown on the Atlantic coasts of South Carolina, in the northern interior of Florida, near the southwestern edge of Mobile Bay (north of latitude 30°), and at all points along the Gulf Coast, from the border of Alabama to Galveston in Texas. [I omit here any special reference to East Florida, so well known to be peculiarly adapted to orange culture, for, although greatly influenced by the Gulf, that favored semi-tropical region belongs geographically to the Atlantic Coast.] The immediate shore or margin of the Gulf Coast—the islands of the Gulf sufficiently elevated to escape overflow and protracted submergence in severe storms; and the banks of the rivers, bays and bayons emptying into this great Gulf of Mexico, embrace thousands of acres perfectly adapted to the culture of the sweet orange and many of its congeners. Throughout the whole of our mild and pleasant coast country there are numberless locations yet unoccupied and easily attainable, where almost the entire *citrus* family, from the delicate little *Mandarin* to the huge and austere *Shaddock*, may be raised in great perfection, and with nearly as much certainty of a regular crop, as any other variety of fruit which we cultivate. It affords me much pleasure to assure the Society that the propagation, growth and culture of this most interesting and profitable family of fruits is steadily increasing from year to year; and has of late only been retarded by the great and peculiarly embarrassed condition of our section. The variety of orange most in favor and cultivation with us, has generally been raised *from seed* either native or foreign, and is designated and known as the “Creole Orange.” We have also in cultivation, to a limited extent, the *Brazilian* (*C. Braziliensis*), the *Mandarin* (*C. nobilis*), the *Tobasco* (*C. Mexicana*), the *Seville* (*Bigaradier*), sour or bitter, the *Shaddock* (*C. decumana*), the *Pamplemousse*, the *Myrtle*, and a few other varieties. Of these, the finer sorts of *Creole* seedlings, the *Mandarin*, and the *Brazilian* (all sweet), are undoubtedly the best and most profitable; though most of the other sorts mentioned are valued for special purposes.

THE LEMON (*C. Limonum*), the LIME (*C. Limetta* or *acida*), and the CITRON (*C. medica*), are also grown to a limited extent; but all these are less hardy and vigorous than the different varieties of sweet orange, less in demand and, therefore, not so desirable.

JAPAN PLUM (*Mespilus Japonica*, *Loquat*, *Eriobotrya*).—This tree is a broad-leaved evergreen of strikingly beautiful form, and fine, free habit of

growth. It is very attractive and lovely in foliage, and produces an abundance of deliciously fragrant flowers in late autumn and early winter. These, if not injured by frost (which rarely happens south of latitude 30°), are followed early in spring, from last of February to middle of April, by profuse clusters of fruit, the size of a large plum—juicy, sub-acid, refreshing, and altogether delightful and *unique* in flavor and quality. This fruit may be gathered four or five days before it is fully mature—will ripen perfectly in the house or *in transitu*; and, if it were largely planted, in proper localities, could be made a source of very great profit. The most favorable localities seem to be in the vicinity of New Orleans, ranging from twenty to thirty miles above to sixty or eighty miles below the city, on the Mississippi river “coast,” and thence south and southwestwardly, throughout the entire region lying near the Gulf, between the great river and Eastern Texas. The Japan plum is said not to succeed well in East Florida, but I am at a loss to find any good reason for its failure there. Within the particular limits I have mentioned, and even as far east and north as Pascagoula Bay, on the Gulf coast of Mississippi, this attractive and very desirable fruit tree bears a crop three or four years out of five, and is generally grown on a limited scale, both for use and ornament.

FIG (*Ficus Carica*).—What the apple, the currant, the strawberry, the *Coucord* grape, and other everyday household fruits of the easiest production, are to the people of the North and West, the fig most emphatically is to us of the Gulf Coast—the “fruit for the million!” It grows from cuttings as readily as the grape or willow; these cuttings often producing a few ripe and edible fruit the first season, and (with proper culture) nearly always the second year. The tree seems subject to no disease whatever—is seldom seriously injured by frost; and, when two or three years old, always bears two and sometimes three crops of fruit during our long season. This fruit (fresh) is of the most delicious, nutritive and wholesome quality; and may, when fully ripe, be eaten directly from the tree, or prepared for the table in many attractive forms by the skillful housewife. It is, however, mainly of the fig as a marketable and commercial fruit that I here wish to say a few very particular words. Assuming that the *production* of this fruit in our section, so far as *quantity* is concerned, is practically without limit, our next consideration is, how to *preserve* it in such a manner as to admit of long and safe keeping and distant transportation. Up to the pre-

sent time, the Fig, so delicate and perishable when fully ripe as to almost preclude the idea of handling or shipping at all in its "green" state, has only been cultivated and prized for home use and immediate consumption. It is true, a few small attempts have been made to dry figs in the sun; and our tasteful housekeepers have prepared fig preserves, pickles and confections, in many attractive forms; but thus far, with the honorable exception of one firm in the city of New Orleans*, no one within my knowledge has attempted to utilize this fruit on a *large scale*, or render it an article of commercial importance and great profit. I think I hazard little in saying now, however, that what cotton was before the day of Whitney and his gin, the fig has been until the successful advent of Bulkley, Alden and other inventors of *fruit-driers* and *evaporators*. I fully believe that the problem is very near its solution—that this excellent and most prolific fruit will soon assume its rightful importance among us; and that, before many more meetings of this Society, *dried figs* of Southern production will be found plentifully in our markets, and prove an important and acceptable addition to our home luxuries. The *dried fig* being the only form in which this wholesome fruit has heretofore been offered to the general public, it may not be inappropriate to say that our figs can also be very successfully pickled (sweet or sour), preserved in syrup, candied and crystallized in sugar, and put up in many other attractive forms and ways. All varieties of the fig, thus far tried, succeed perfectly on our Gulf coast; and, reckoning upon the value and efficiency of the most improved fruit driers and evaporators, there is no fruit which can be grown in our section that offers a surer or more liberal return for a moderate expenditure of capital and labor.

POMEGRANATE (*Punica Granatum*).—This graceful and beautiful fruit tree thrives everywhere on the Gulf coast. Of the fruit-bearing we have three or four varieties, and at least as many ornamental sorts. Both fruit and flower are very beautiful and attractive, and the pulpy seeds of the former, when prepared with sugar like the northern currant, furnish a juice sweet, cooling, refreshing and agreeable, especially in the sick room. This juice is also used for jellies and conserves, and has often been made into a delicate and peculiar wine. The thick, leathery rind, or outer skin of the fruit, and the bark of the roots, possess very marked astringent and anthelmintic properties, and have frequently been used in medical practice with good results. The Pome-

granate, however, aside from its great beauty, and the uses to which I here advert, does not possess much attraction as a popular fruit for the market or dessert; and can only be recommended for limited cultivation.

OLIVE (*Olea Europea*).—We have several varieties of the Olive, including one wild, native sort (*Olea Americana*), a very pretty broad-leaved evergreen, bearing a small fruit of no value. The European olive tree grows freely and luxuriantly, wherever properly planted and cared for; but its fruit production is not generally satisfactory. The dry uplands and rocky ridges of the interior are, doubtless, better adapted to this fruit than the low, moist, sandy lands on the coast; and, as the olive can resist a much lower temperature than the orange, it may be tried successfully in the more elevated and hilly portions of our Gulf States.

JUJUBE (*Zizyphus sativus*).—This tree is a native of Syria, but flourishes everywhere on the Gulf, and as far north and east as Raleigh, North Carolina. The tree is of medium size—sometimes twenty or thirty feet high—with alternate and singularly tortuous branches, armed with long curved thorns, and having very glossy and beautiful dark green leaves (deciduous). The fruit, which ripens in July and August, is about the size and shape of an olive; and of a sweet and pleasant taste, somewhat similar to that of dried dates. There is little doubt that the *Jujube* (sometimes called *Jujeb*), is the true Libyan *Lotus* of Herodotus, 4, 177, and that it is also described as the *Lotus* by Pliny, among the ancients, as well as Shaw, Desfontaines, Beechy and Park, among modern travelers. It is the *Seedra*, of the Arabs, and was formerly much cultivated in Southern Europe, and the fruit used for the making of a mild kind of wine or mead, and the well-known "Jujube Paste." Of late years, this once popular confection has been replaced by a cheaper preparation of mucilage and sugar, and the culture of the fruit has greatly fallen off. It is a very pretty and attractive fruit tree, and deserves a limited share of attention.

HARDY FRUITS.

APPLE (*Pyrus Malus*).—All the *early* varieties of the apple, such as *May*, *Red Astrachan*, *Early Harvest*, *Carolina June*, etc., succeed very well on our Gulf coast. Also a few summer and early fall varieties, such as *Mercer* (a Mississippi seedling), *Lumber Twig*, etc.; but the apple is not cultivated to any considerable extent, and I cannot report favorably on any late-keeping sorts except *Shockley* and *Yates*—two well known Southern varieties.

* Geo. W. Dunbar & Son, importers, &c., St. Louis street, New Orleans.

APRICOT (*Armeniaca vulgaris*).—The apricot tree grows well; but, with the exception of two varieties, the "Black" and the "Cowand," this fruit has not succeeded well as an open air standard. The "Cowand" (local name) has frequently produced good crops on the Mississippi coast, near Bay St. Louis, and seems worthy of a more extended trial.

CHERRY (*Cerasus vulgaris*).—This fruit has never succeeded on our Gulf coast, and cannot be profitably cultivated.

CURRENT (*Ribes rubrum*).—The same remark applies to this fruit. It is of no value whatever in this climate.

GOOSEBERRY (*Ribes Grossularia*).—This fine fruit has also proved an entire failure throughout the South and South-west, and is not at all in cultivation.

GRAPE (*Vitis Labrusca*).—Nearly all American varieties of the grape succeed perfectly with us, wherever the situation is high and dry enough for this invaluable fruit; and a few foreign sorts have been cultivated with some success in New Orleans and its vicinity. Many of the leading varieties of the North and West have been grown in great perfection on the Gulf coast—such sorts as *Hartford*, *Ives*, *Concord*, *Diana*, *Martha*, *Delaware*, *Goethe*, *Barry*, *Wilder*, *Clinton* and *Warren*, having given especial satisfaction. These and a few of the newer sorts are gradually coming into more general cultivation: but the popular taste of the South still runs altogether in favor of our great "native," the SCUPPERNONG (*Vitis rotundifolia*), which, with us, grows and bears large crops with less culture, pruning, manure and attention than any grape that has yet been tried in our climate. It is a genuine *Southern native*, "to the manor born:" and, though lacking in some of the qualities of a really fine and perfect grape, it possesses so much hardiness, vigor and productiveness, that we cannot possibly dispense with or substitute any other known variety for it. In addition to the *White Scuppernon*, which is best known and most generally cultivated, we have several sub-varieties, such as the "Flowers," "Thomas," etc., all hardy, rampant growers, and very productive. The *Scuppernon*, in all its varieties, grows freely in any properly prepared soil, either on hill or valley; but seems peculiarly adapted to the low, sandy, level and moist lands of the Coast where it has long been produced in great abundance and perfection. When properly treated, the "must" of this grape makes a fine and delicate wine, either "still" or "sparkling;" and the production of these native Southern wines is now

rapidly increasing in North Carolina, Mississippi, and other States. I desire to bear particular testimony to the great excellence of the *Scuppernon grape* (for our own section only), because I am aware that, owing to the difficulty of transporting the ripe fruit to our exhibitions, and also to an imperfect knowledge of its great value for a very large scope of country in the South and South-west, this grape has not heretofore received full and deserved recognition from our Society, or in our catalogue.

MULBERRY (*Morus*).—Several varieties of mulberry are in cultivation on the Gulf, and the tree is everywhere vigorous and productive. It has received no special attention as a fruit tree, however, and little value is attached to the crop.

PLUM (*Prunus*).—Native plums, of *Chickasa* variety, such as "Wild Goose," "Indian Chief," "De Caradene," etc., are mostly in cultivation: but I have known the *Damson*, *Reine Claude* and other fine sorts, to produce good crops immediately on the Gulf shore. This fruit may be considered only moderately successful.

PEAR (*Pyrus communis*).—The climate of our Gulf coast seems remarkably adapted to the Pear; but our ordinary soils, unless highly fertilized, are generally too thin and poor to ensure that vigorous and healthy growth of the tree which is desirable. When properly cared for, our pear trees are very healthy and productive: and I do not think we suffer nearly as much from *blight* or other diseases as do many other sections. For general culture, I can recommend only a few varieties, such as *Doyenne d'Ele*, *Jefferson*, *Bartlett*, *Beurre St. Nicholas* (or *Duchesse d'Orleans*), *Duchesse d'Angouleme* and *Winter Nelis*. New beginners and ambitious amateurs may not be satisfied with such a meagre list; but I feel confident that it embraces the most desirable sorts for the country bordering on the Gulf.

PEACH (*Persica vulgaris*).—All, or nearly all varieties of the peach thus far tried, succeed on our Gulf coast, provided the proper conditions are observed. The most important of these conditions are elevation and thorough drainage. Our atmosphere being generally moist—our land mostly flat and level, and our annual rain-fall greater, perhaps, than that of any other portion of the Union, it is absolutely necessary in many cases to ridge the land up very high, open deep water furrows and outlets between the rows, and plant the trees on the crown of these ridges, and almost on the surface of the ground. Thus managed at the outset, and proper attention being paid to after-culture, pruning, etc., the peach is one of our most satisfactory and profit-

able fruits, and can be produced in great quantities and of the finest quality, from four to eight weeks earlier than the same varieties ripen at the North.

QUINCE (*Cydonia vulgaris*).—The common varieties of quince, such as *Apple* or *Orange*, *Rea's Mammoth*, *Portugal*, &c., have not generally succeeded well on our Coast; but the CHINESE QUINCE (*Cydonia Sinensis*) is quite vigorous and productive, when planted in rich, moist land, and slightly in the shade. The fruit of this quince is of a very large size; and though not quite equal in flavor to some other varieties, it is used to a large extent for the same purposes.

STRAWBERRY (*Fragaria*).—This favorite spring and summer fruit is most successfully grown by all careful cultivators on our Coast; and, with very little trouble, the season of bearing may easily be continued during four or five months. Indeed, we have often gathered ripe strawberries in November, December and January—though our main crops extend only from March until June. The *Wilson*, *Wilder*, *Chas. Downing*, *Imperial* (local), *Triomphe de Gand*, *Longworth* and *Mary Stewart*, are our best and favorite varieties, and the only serious obstacle to strawberry culture, with us, is the great difficulty of keeping down the rank growth of grass and weeds, and maintaining a high degree of open, clean and mellow culture.

RASPBERRY (*Rubus*).—This delicious fruit is very little cultivated with us; and our climate does not seem at all adapted to the finer sorts, such as *Briuckle's Orange*, *Red Antwerp*, &c. Very fair success, however, has been achieved with many of the *Black Cup* varieties; and a more thorough and careful trial of such sorts as *Mammoth Cluster*, *Seneca Black Cup*, *Darison's Thornless*, etc., is recommended.

BLACKBERRY (*R. villosus*)—DEWBERRY (*R. Canadensis*), &c.—These fruits grow wild in great abundance throughout our entire Gulf region; but of course, are much inferior in size and flavor, to the improved varieties. Of these, we have in cultivation the "*Early Wilson*," "*Kittatinny*," "*Laurton*," "*Snyder*," etc., and can report the most perfect success wherever the plants have received good and careful attention.

SUMMARY:

Among all the fruits above described, the four which promise the surest and most satisfactory returns for labor, skill and capital, properly employed, are: the *orange* and *pear*, for market; the *fig*, for drying, preserving, &c., and the *Scuppernon*

grape, for the manufacture of a popular, excellent and cheap "sparkling wine." There are many locations along the wide and extended margin of this Great Mexican Gulf, where one or all of these four fruits may be raised in the greatest abundance and perfection; and to those who enter the field properly qualified for the work, there can be no possible doubt of the most gratifying success.

Ocean Springs, Miss., Sept. 1st, 1875.

Some remarks on The Importance of Small Things in Horticulture, were made by the author in connection with the following paper on

Canker-Worms: Distinctions Between the Species.

By CHARLES V. RILEY,
State Entomologist of Missouri.

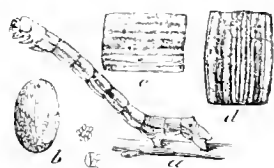
From the time when William Dandridge Peck published (in 1795) his essay on the Canker-worm, which received a prize from the Massachusetts Society for Promoting Agriculture, up to the year 1873, all writers on the subject spoke of the Canker-worm under the impression that there was but one species. Nevertheless two very distinct species have been confounded under this name. The first intimation we have of there being two species is where Harris, after describing at length, as the Canker-worm Moth, not the species first called the Canker-worm by Peck, but the larger species (*pometaria*), here treated of, uses the following language: "Specimens of a rather smaller size are sometimes found, resembling the figure and description given by Prof. Peck, in which the whitish bands and spots are wanting and there are three interrupted, dusky lines across the fore-wings, with an oblique blackish dash near the tip. Perhaps they constitute a different species from that of the true Canker-worm moth. Should this be the case, the latter may be called *Anisopteryx pometaria*."* The portions of this passage which I have italicised are well calculated to mislead, for the term "true Canker-worm Moth," should only apply, in justice, to that described as such by Prof. Peck, and not, as Harris here applies it, to the other species. Indeed, most subsequent writers, including Fitch, Packard, Mann, and myself,† were misled by the language, and took it for granted that the name *pometaria* was proposed for the smaller form—a mistake first clearly pointed out by Mr. H. K. Morrison, of Cambridge.‡

* *Insects Injurious to Vegetation*, 3rd ed. p. 462.

† *Ed. Fitch*, Rep. III. § 38; Packard's *Guide*, 3rd ed. p. 324; Mann, Proc. Bost. Soc. Nat. Hist., Vol. xv. p. 382.

‡ Proc. Bost. Soc. Nat. Hist., Vol. xvi. p. 204.

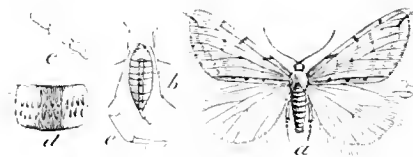
So long as the male moths only were carelessly compared, there was always a question as to whether the differences were varietal or specific—1st, because the general resemblance is strong; 2nd, because each species varies considerably both in size and ornamentation; 3rd, because the wing-scales, especially of one species, easily rub off, and perfect specimens captured at large, are uncommon. More careful comparisons made in 1873, by Mr. Mann (*loc. cit.*), between both sexes, established the specific differences of the two; and further comparisons, by myself,* of the preparatory states, showed these differences to be still more remarkable than had been supposed. During the present year I have been able to make still more careful comparisons, which show the two insects to be so very distinct that they must be separated generically. These differences are set forth in the Transactions of the St. Louis Academy of Science (Vol. III, p. 273). They show that *pometaria* alone can be retained in the genus *Anisopteryx*, and for *vernata* I have, therefore, erected a new genus, *Paleacrita*.



SPRING CANKER-WORM:—*a*, full grown larva; *b*, egg, enlarged, the natural size shown in the small mass at side; *c*, an enlarged joint, side view; *d*, do., back view, showing the markings.

THE SPRING CANKER-WORM (*Paleacrita vernata*, Peck). This species, which, from the fact that the great bulk of the moths issue from the ground in early spring, may be distinguished from the other by the popular name here given, is the true Canker-worm originally described, as *Phalana vernata*, by Prof. Peck. This is undoubtedly the species for the most part spoken of in the agricultural journals of the country, and the species best known in the Mississippi Valley. This Spring Canker-worm is distinguished, in the light of recent careful discriminations, by the characters indicated last year, viz: by each of the first seven joints of the abdomen in both sexes bearing two transverse rows of stiff, red, or reddish-brown, posteriorly directed spines; by the front wings in the male having three transverse, dusky lines, and a somewhat broader, jagged, pale submarginal line; and by the whole body in the female, as also the legs and antennae, being pubescent with pale and dusky hairs—the color being rabbit-gray, or speckled black and white, the abdomen having a medio-dorsal black stripe. The dusky stripes on the front wings of the male, except at costa, and the black stripe on the abdomen, except at each end, are usually more or less obsolete, and

indeed the ornamentation of the wings is extremely variable. In many specimens the middle portion of the front wings, within the three dusky lines, is quite pale and mottled with grayish-green, while the basal and terminal portions are marked with brown, thus making the contrast greater. Others again are absolutely without marks whatever, even when fresh from the chrysalis: while captured specimens always have the marks more or less effaced on account of the looseness of the scales. The moths



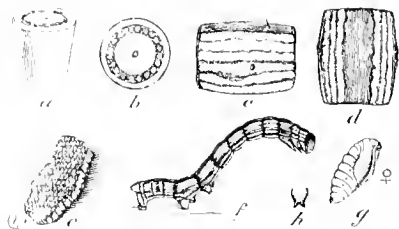
SPRING CANKER-WORM:—*a*, male moth; *b*, female do.—natural size; *c*, joints of her antennae; *d*, joint of her abdomen, showing spines; *e*, her ovipositor—enlarged.

rise from the ground for the most part early in Spring, and only rarely the previous Fall. They are crepuscular in habit, and are most active soon after dark in the evening. The female by means of a horny and extensile ovipositor thrusts her eggs, to the number of from fifty to one hundred and fifty, under the loose scales of bark or in any crevice or sheltered place, and is very fond of availing herself for this purpose, of the empty cases of the Rascal Leaf-crumpler. The eggs are but slightly glued together, and have the form of a rather elongate hen's egg, the shell being very delicate and smooth, though often appearing roughened by transverse and longitudinal, irregular depressions. The larva has but four prolegs, is variable in color, and one of its distinguishing characters is the mottled head, and two pale, narrow lines along the middle of the back, the space between them usually dark and occupied on the anterior edge and middle of joints 5, 6, 7 and 11, by black marks somewhat in form of X; these marks being represented by dots on the other joints. There are two rather prominent tubercles on top of the eleventh joint, preceded by two white spots. The female chrysalis singularly enough, has wingsheaths, though an examination proves them to be hollow, and they do not reach so far down the body, by one joint, as in the male. The abdomen terminates, in both sexes, in a straight point. It is formed in a simple cocoon of earth, two or three days after the worm enters.

THE FALL CANKER-WORM (*Anisopteryx pometaria* Harr). This insect is easily distinguished from the preceding, when critically examined. It is, on the average, somewhat larger and more glossy; the front wings of the male have a distinct white

* 7th Mo. Ent. Rep., pp. 80-88.

spot on the front edge, and are crossed by two pale, jagged bands, along the sides of which there are several blackish dots. The hind wings also have a pale, curved line, more or less distinct, across their middle. The female is uniformly dark ash-gray above, paler beneath, with the antennae naked, and the legs and abdomen smooth and glistening, and with no extensile ovipositor. Thus it lacks the characteristic spines of *vernata*, the dusky



FALL CANKER-WORM:—*a*, *b*, egg, side and top views; *c*, *d*, joints of larva, side and top views, showing markings—enlarged; *e*, batch of eggs; *f*, full-grown larva; *g*, female chrysalis—natural size; *h*, top view of anal tubercle of chrysalis, enlarged.

marks across the front wings, and the pubescence in the female; and there are many other minor differences, which are mentioned in the tabular and comparative description of the two insects further on.

The moths rise mostly late in the Fall, but also during the warm weather of Winter, even to Spring. The eggs are tough, with a flattened crown of a purplish color, and having a dimple in the center and a brown ring near the edge; they are not secreted or hidden under scales, but are laid in regular and compact batches, of from one hundred to upwards of two hundred, on the surface of twigs or of the trunk, being fastened by a strong glue, and covered with a slight coating of grayish varnish. The larva is distinguished from that of the Spring Canker-worm by having a dark brown back, and three conspicuous broad, pale yellow lines each side, as well as by having a third pair of prolegs, shorter than the others, on the eighth joint. It develops very rapidly, entering the ground, with favorable weather, within three weeks after hatching; and, singularly enough, suffers but two molts, exclusive of that which takes place under ground in transforming to the chrysalis. The chrysalis is formed in a rather tough and compact cocoon of buff-colored silk intermingled with earth, and the change takes place about three weeks after the insect enters the ground. It is found principally on the Elm and has not yet been reported from the Mississippi Valley. The female chrysalis is stout and has a little, decurved, bifid thorn on the tip of the body superiorly. As in *vernata*, it has perfect wing-sheaths, and the same differences are noticeable in the sexes. The practical man may consider the illustration

of these differences as unimportant and trivial, however much they may interest the entomologist. Yet it is of much practical importance to know how to distinguish between these two insects. From present knowledge of the subject, it is highly probable that, just as the moths of the one species appear mostly in early Spring, and of the other mostly late in the Fall, so each is, in a general sense, confined to particular plants—the Spring species preferring our fruit trees, and the Fall species preferring the Elm. Thus the time to put forth our efforts to catch and destroy the wingless moths will vary according to the nature of the tree to be protected and the insect to be dealt with.



FALL CANKER-WORM:—*a*, male moth; *b*, female do.—natural size; *c*, joints of her antennae; *d*, joint of her abdomen—enlarged.

In the case of the Spring species, the scraping of loose bark from the tree and otherwise cleansing it of dead leaves, cocoons, larva-cases, etc., a short time before the hatching of the worms, or before the buds of the tree commence to open, will prove an effectual preventive measure; as thereby many of the eggs will be destroyed. Moreover, a tree kept clean of loose bark will be less subject to its attacks. The same argument will not apply to the Fall species, which attaches its eggs in any exposed position. It would seem also that the mode of trapping the moths will have to be somewhat modified, according to the species to be dealt with; for while Dr. LeBaron found the tin and rope trap effectual with the Spring Canker-worm, it does not appear to afford any barrier to the Fall species. The cocoon of the Spring species being made simply of earth is very fragile and easily broken by any slight disturbance of the earth. Fall plowing will, therefore, prove an effectual preventive of future attack, whereas it will have much less effect on the other species with a tougher cocoon that no disturbance of the soil will break.

The Rocky Mountain Locust, or Devastating Species, Distinguished from the Red-Legged Locust, which is Comparatively Harmless.

The Red-legged Locust is common in most of the States, extending to the Atlantic, and is even reported in parts of the Rocky Mountain region where the migratory species is at home. The two

bear such a close general resemblance that even entomologists have doubted their specific distinctness; and indeed size and colorational characters would not suffice to separate the exceptional individuals which depart most from the typical characters of their species, and approach most to those of the other. Yet they are distinct, as species go, and in order to properly study the distribution of the Rocky Mountain species, and its power of becoming acclimated in the Mississippi Valley or not, it is of the first importance that observers confound not the two species. Hence, I have described in detail the two species.* From these details, it is evident that the distinguishing characters, most easily observed by the non-entomologist, are the relative length of wing, and the structure of the terminal joint of the male abdomen, which is turned up like the prow of a ship—this last character being the most important and constant. The Rocky Mountain species has the wings extending, when closed, about one-third their length beyond the tip of the abdomen, and the last or upturned joint of the abdomen narrowing like the prow of a canoe, and notched or produced into two tubercles at top. The wings of the Red-legged Locust extend, on an average, about one-sixth their length beyond the tip of the abdomen, and the last abdominal joint is shorter, broader, more squarely cut off at top, without terminal tubercles, and looking more like the stern of a barge.

E. S. HULL, President of the Illinois State Horticultural Society, spoke upon "How to Grow the Finest Fruit." He found root pruning of special value.

How to Grow the Finest Fruit.

[Owing to the sudden and lamentable death of Dr. Hull, the following synopsis from *The Country Gentleman* is the best report that can be furnished of his remarks.]

"Dr. Hull then discussed the subject of How to Grow the Finest Fruits. He had seen great revolutions in fruit-growing, having been a resident of Illinois twenty-eight years. At first it was declared that no cultivated fruits could be grown in the middle and northern parts of the State. He was determined to grow the finest fruits or none, and

he had succeeded. He commenced root-pruning as an experiment on rapid-growing trees that did not bear, not expecting that it would do to continue it any length of time, but to his surprise the trees that were severely root-pruned not only bore the most and the best fruits, but they continued the most healthy and stood the severe winters the best. From this fact he had studied out the needs of the tree, and found that all trees and plants store up each year a certain amount of food for a specific purpose, which is used for that purpose alone. Now we can so direct the forces of any tree that it will store up food for fruit production, if we wish, and not injure the tree thereby. Some trees on favorable soils will do this, while other varieties and other soils tend to wood-growth production; in such cases they are so taxed to force the sap to the ends of the long roots that they have not time after making root-growth to return the sap to the buds and form fruit buds. In such cases, if a root-pruner be used in July, the roots are shortened, the sap finds its way to the end of the roots, completes the root-growth, the tree then forms fruit buds and ripens up all the growth before the winter sets in, and is thus able to withstand the winter uninjured, and you get a crop of fruit from every tree that you wish. The speaker has never known this to fail when tried in July, and trees of any age may be forced to bear fruit if desired; and a judicious system of thinning the fruit and trimming out all sprouts and diseased branches is equally necessary. By his system he in a great measure prevents the blight, and keeps his trees healthy and thrifty. He asked all to visit him and see his fruit."—J. B. J. in *Country Gentleman*, Oct. 14th, 1875.

Dr. FURNAS, of Indiana, said he had found root pruning as practiced by Dr. Hull, a perfect remedy for cracking of the fruit during the six years he had tried it.

GRAPE GRAFTING.

Mr. RILEY, of Missouri, exhibited some samples of the European methods of grafting the grape by cleft grafting and inarching.

A vote of thanks was given to the speakers, with the request that they put their addresses in written form for publication.

Adjourned to 9 A. M. to-morrow.

* 7th Mo. Ent. Rep., p. 125.

THIRD DAY—MORNING SESSION.

The Centennial Meeting

Was taken from the table for discussion.

Mr. SCHAEFFER, of Pennsylvania, President of the Pennsylvania Society, said: I understand that a motion was made to rescind the vote of the Society to meet at Philadelphia in 1876. Now, next year we celebrate the one hundredth anniversary of the nation and the forty-ninth of our Pennsylvania Horticultural Society. We propose that you do not then hold a business, but a *social* meeting. I would like to see a motion, not to rescind our action of two years ago, but to meet the Pennsylvania Society in a grand social re-union. I invite you there in behalf of the Pennsylvania Horticultural Society.

BARRY, of New York.—Another exhibition going on at the time of our meeting hurts the business character of the Society. My resolution looked to that fact. I have no objection to going socially, and with the understanding that we do so, I withdraw my former motion and move: That the cordial and courteous invitation of the Pennsylvania Horticultural Society be accepted. Carried unanimously.

The date for the grand social meeting is September 14, 1876.

The Meeting for 1877.

Mr. BRACKENRIDGE, President of the Maryland Horticultural Society.—I have been instructed by the Maryland Horticultural Society to invite the American Pomological Society to meet at Baltimore in 1877; and move that we meet there at that time.

PENTLAND, of Maryland.—I second the motion of my colleague. We come instructed to tender an invitation to this organization to meet with us two years hence. Eighteen years ago we had a Society in our State that failed. Two years ago we re-organized, and now have 500 members. We will give you a hearty welcome. We have plenty of fine fruits, fish and oysters. We will be glad to meet you all

from East, West, North and South. We trust especially we shall see gentlemen from the West with their fruits. We are anxious to see the Bostonians, who smothered our people with kindness at the late centennials of Concord and Lexington.

BARRY, of New York.—It is a long time since we had a meeting in New York, and I think it is about time we had another. Baltimore has never had a meeting, however, and I yield to her claims.

BEATTY, of Kentucky.—I am instructed to invite the Society to meet at Louisville. We never had a meeting there and shall be glad to have one.

A vote was then taken which resulted in the adoption of Mr. Brackenridge's resolution to meet at Baltimore in 1877. [The date to be fixed as usual by the President.]

Resolution of Thanks.

BARRY, of New York, offered the following, which was unanimously adopted:

Resolved, That the thanks of this Society be and are hereby tendered to the Illinois State Horticultural Society for its courtesy and hospitality in extending to this Society an invitation to meet here and in making the necessary preparation for its accommodation. Also to the landlords of the Grand Pacific Hotel for their liberality and courtesy in furnishing a fine hall and other facilities for the meetings. Also, to the several railway and express companies which have carried our members and their fruits at reduced rates.

Thanks to the South Park Commissioners.

Judge HENRY F. FRENCH, of Massachusetts, offered the following resolution, which was adopted:

Resolved, That we tender to the Commissioners of the South Park of Chicago the thanks of this Society for their considerate courtesy in affording our members the privilege of visiting their grounds, the reputation of which has already done so much for their city;

AND TO THE CHICAGO UNIVERSITY.

The following preamble and resolutions were also adopted:

Whereas, This Society has received an invitation from Rev. J. C. Burroughs, Chancellor of Chicago University, to visit their institution,

Resolved, That we regret our inability to accept this kind invitation for want of time, and return our sincere thanks therefor.

Contributions to the Centennial Exhibition.

Mr. EDWARDS, of Missouri, took the chair.

Mr. WILDER, of Massachusetts, moved: That the members of this Society unite most cordially in efforts to make such contributions to the International Centennial Exhibition of 1876, as shall be a credit to the various States and honorable to the country. Carried.

Reports of Committees.

Mr. Berckmans, of Georgia, from the Committee on Native Fruits, stated that the Committee found it impossible to complete their report in time to make it to this meeting in proper shape. The Committee was granted leave to report to the Secretary, as were also the Committee on Record of Fruits Exhibited, and other committees that might not complete their reports in season.

Award of Wilder Medals.

The Committee made the following report:

Your Committee beg respectfully to report as follows: The collections of fruits on exhibition are better than we had anticipated meeting at the close of the summer, which has been marked by disastrous frosts, ravages of insects and unpropitious seasons. Some favored sections have escaped these misfortunes and come with the net results of their harvests to ornament the tables of the exhibition.

GENERAL COLLECTIONS.

We award the Silver Wilder Medal as follows:

1. To the Michigan State Horticultural Society, for the splendid display made up by the following associations:

The Horticultural Societies of Monroe County,

"	"	"	"	Allegan	"
"	"	"	"	Kent	"
"	"	"	"	Ingham	"
"	"	"	"	Washtenaw	"
"	"	"	"	G'd Traverse	"
"	"	"	"	Benzie	"
"	"	"	"	Oceana	"
"	"	"	"	Kalamazoo	"

South Haven Pomological Society, and Messrs. Geo. L. Burrows & Co., of Saginaw.

2. To the Iowa State Horticultural Society, for a collection of apples beautifully displayed by Mr. James Smith, of Des Moines.

3. To the Wisconsin State Horticultural Society, for general collections of fruits.

4. To the Nebraska State Horticultural Society, for handsome collection of apples.

To the following Individual Collections:

1. John Saul, Washington, D. C., for pears.

2. Ellwanger & Barry, Rochester, N. Y., for pears.

3. Ellwanger & Barry, Rochester, N. Y., for plums.

4. E. Moody & Son, Lockport, N. Y., for general collection.

5. J. H. Ricketts, Newburg, N. Y., for a large collection of seedling grapes of great promise.

6. Isidor Bush, Son & Meisner, Bushburg, Mo., for a collection of native grapes.

7. D. Redmond, Ocean Springs, Miss., for an interesting collection of semi-tropical fruits, including oranges, lemons, pomegranates, bananas, figs, pine-apples, etc.

8. Edward Daniels, Gunston Hall, Fairfax Co., Va., for well grown pears and grapes.

9. A. Fahnestock, of Toledo, Ohio, for pears.

10. Benjamin G. Smith, Cambridge, Mass., collection of pears.

11. F. & L. Clapp, Dorchester, Mass., for a large collection of seedling pears and a very fine dish of Clapp's Favorite.

12. J. W. Manning, Reading, Mass., for pears.

13. Hovey & Co., Cambridge, Mass., for a large collection of pears.

14. S. E. Chamberlin, Waterford, Va., for a large collection of apples.

15. B. S. Fox, San José, California, for a large collection of very promising seedling pears.

HONORABLE MENTION.

1. W. D. Brackenridge, Germantown, Md., for pears.

2. Dr. Humphries, Galesburg, Ill., for apples.

3. Hillman Troth, Dr. E. L. Howland and others, of Fairfax Co., Va., for general collection of fruits.

4. Warsaw (Ill.) Horticultural Society, for collection of apples.

5. G. H. Baker, South Pass, Ill., for collection of apples.

6. Adams County (Ill.) Horticultural Society, for general collection of fruit.

7. Sedalia (Mo.) Horticultural Society, for general collection of fruit.

8. Wisconsin State Horticultural Society, for

general collection of fruit, including an interesting contribution from G. P. Peller, of Pewaukee.

9. Cambridge (Mass.) Horticultural Society, for collection of pears.

10. Robert Manning, Salem, Mass., for specimens of pears from historical trees collected by him, including the Endicott, planted about 1630, an Orange Pear tree 235 years old, a Warden grafted April 19, 1775, and a tree planted by Anthony Thacher in 1640.

11. B. F. Transow, Humboldt, Tenn., for general collection.

This Committee feels that its report would not be complete without making some formal recognition of the services of those officers to whose unremitting labors the present prosperous condition of the Society is due.

1. To Marshall P. Wilder, President of the Society, for his laborious and indefatigable exertions and sacrifice in founding and building up the Society, and bringing it to a position in advance of any similar Society in the world.

2. To Patrick Barry, Chairman of the General Fruit Committee, for his untiring and valuable services for many years.

3. To Thomas P. James, for twenty-seven years of unremitting and faithful services as Treasurer of the Society from its origin to the present time.

4. To John J. Thomas, for designing the beautiful and appropriate device stamped upon the medal.

They therefore recommend the award of the Wilder medal as an appropriate testimonial.

The Committee cannot pass over the very fine collection of 270 varieties of pears exhibited by the President, which fully deserved the highest honors, but as he desired not to put his collection in competition with others, they are obliged to content themselves with an honorable mention.

JNO. A. WARDER—OHIO.

P. J. BERCKMANS—GEORGIA.

J. H. MASTERS—NEBRASKA.

ROBERT MANNING—MASSACHUSETTS.

W. SCHLEY—GEORGIA.

ISAAC BUCHANAN—NEW YORK.

Report of the Committee on Seedling Fruits.

The Committee on Seedling Fruits have examined the following named varieties:

APPLES.

Morris' Seedling.—Raised by Mr. Cunningham, Lyons, Iowa. Its history is said by Prof. H. H. McAfee, who presented it, to be as follows: Seed

planted about sixteen years ago, and the tree is now growing in the bluff deposits of the upper Mississippi. Spreading, bushy, hardy; very productive, and an annual bearer; season, October to January. From its appearance the Committee judged it to be probably a seedling from *Rawle's Jewel*.

Keige's Early Winter.—From B. F. Transow, Humboldt, Tenn.

Seedling Apple.—From Mr. Grinnell, Fort Calhoun, Washington County, Nebraska; very handsome but poor.

Various other seedlings were exhibited from Nebraska, which were not in season.

Pewaukee.—From G. P. Peller, Pewaukee, Wisconsin, the originator. A seedling from the *Duchess of Oldenburgh*; very unlike the parent. Ripe January to June.

Another *Seedling* from Mr. Peller; medium size, very tart; a good cooking apple. Also a sweet apple of medium size, handsome and good.

A *Seedling* from Charles Gibb, Abbotsford, P. Q. Good to very good. Mr. Gibb also showed specimens of *Montreal Beauty* crab, and of a kind cultivated in the nurseries for that variety, but differing in form and color of fruit and growth of tree.

Delong.—Presented by Suel Foster, Muscatine, Iowa, from the raiser. Large, irregular, oblate conical, distinctly striped, very acid, and a good kitchen apple. Its appearance is in its favor.

George B. Sawyer, Secretary of the Main Pomological Society, presented the *Dean* and *Starkey* apples, which are thus described in the report of that Society:

Dean.—Medium size, shoulder sharp, tapering towards the eye, one side larger than the other; skin smooth, greenish yellow, mostly splashed and striped with red; flesh extremely tender, juicy, lively yet mild, sub-acid flavor; one of the best for dessert, and always in demand in the market where known. Season, last of September and October, but in the northern part of the State frequently keeps well into the winter. Originated with Cyrus Dean, Temple, Franklin County, Maine. Is extremely popular in that County, and is proving well in other sections of the State.

Starkey.—Size medium and above, oblate conical, regular, smooth and fair; yellow, splashed and striped with red and covered with light gray dots; flesh white, firm, crisp, juicy, of a pleasant, lively, sub-acid flavor; quality very good; excellent for dessert and popular in market, being of good color

as well as high quality. In its prime in November, but with care will keep well into winter. Originated in a nursery now owned by Joel Starkey, Vassalboro, Kennebec County, Maine. Tree hardy, a vigorous grower in the nursery, moderate after coming into bearing, a bountiful bearer (better in its native locality than either the *Baldwin* or *Rhode Island Greening*), bears every year but most in even years.

Smith's Favorite.—From L. L. Smith, Brooklyn, Iowa, originated with his father in Ohio, fifty years ago. Large, oblate, slightly conical, irregular; colored like *Maiden's Blush*; promises well for market and culinary purposes. Said by Mr. Smith to be excellent for drying.

PEARS.

Chinese Pear.—From H. H. Sanford, Thomasville, Georgia. Large, obtuse pyriform, one sided, stem long, curved, very fleshy at base and encircled with wrinkles; skin smooth, pale yellow, with greenish gray dots, and a few dark green splashes; flesh white, rather coarse, and lacks flavor; quality hardly good. A showy fruit whose merit seems to consist in its extraordinary fruitfulness; much esteemed for cooking. The tree is remarkably vigorous, leaves deep green, very large and luxuriant, even larger than those of the *Chinese Sand Pear*, which it resembles in growth and appearance of tree, and with which it is probably a hybrid. It is free from blight and remains healthy where every other variety of pear died.

In a letter to the Chairman from L. S. Vamedal, Thomasville, Georgia, it is said to have been introduced into Liberty Co. by Maj. Leconte, of New York, about twenty years ago. Since then it has been propagated extensively by cuttings, which root quite freely. The trees begin to fruit at four years of age, and at ten years old bear from ten to twenty bushels annually.

Eastern Belle.—Raised by Henry McLaughlin, Bangor, Maine. Probably a seedling from *Belle Lucrative*, which it resembles in size, color and quality.

Indian Queen.—From the same source as the last. Partakes of the *Summer Bon Chretien* blood, and is coarse and insipid.

A large collection of seedlings was received from Bernard S. Fox, of San José, California, on which the Committee made the following notes:

No. 181.—Resembles *Seckel* in form and color but somewhat elongated. Very sweet and has the *Seckel* flavor, but not so high as the *Seckels* grown at the East. Quality best.

No. 192.—In shape like *Marie Louise*, but has a stem like *Flemish Beauty*; has the flavor of *Marie Louise*, and rots at the core like *Flemish Beauty*; color pale green; quality best.

No. 157.—Medium size, acute pyriform; pale green; good to very good.

No. 197.—A seedling from *Belle Lucrative*; medium size, acute pyriform, pale brownish red cheek; sweet; good.

No. 185.—Medium size, turbinate, light green; flesh very fine grained with a peculiar flavor.

No. 196.—Appears to be a reproduction of *Belle Lucrative*, with, perhaps, a trace of acid; in quality decidedly best; if anything an improvement on *Belle Lucrative*.

No. 81.—Has a stem like *Belle Lucrative*, but formed like *Marie Louise* at the blossom end; barrel shaped, being largest in the middle; good, but lacks character.

No. 41.—Resembles *Van Mons Lion le Clerc*, in shape, color and flavor; very good.

The Committee tested others, which were either not in season or comparatively inferior, but they confined their notices to such as gave promise of some value for cultivation.

Messrs. F. & L. Clapp, of Dorchester, Mass., also exhibited a large collection of seedling pears, many of which were not in season, and the limited time at the disposal of the Committee did not permit an examination of them.

[Since the meeting of the Society, the Secretary of the Committee, in connection with the President of the Society, has tested several of Messrs. Clapp's seedlings, which give promise of much value, among which are *Nos. 22, 65, 125, 107 and 64.*]

PEACH.

Ausden's Juue.—Medium size, averaging two inches in diameter, slightly oblate, skin white, nearly covered with red, and having a darker red cheek with purple blotches; flesh greenish white, fine grained, juicy, sub-acid; quality very good; free-stone, but slightly adhering to the stone; origin, Jasper County, Mo.; sent by John C. Teas, of that County to the Chairman, July 14, 1874, with samples of *Hale's Early* which measured only one inch in diameter, and would not have arrived at maturity in three weeks.

PLUMS.

Brill.—An improved variety of the *Chickasaw* type; color bright red; quality good to very good; matures ten days earlier than the *Wild Goose*. A very prolific bearer, growth rapid and compact.

Hallie.—Nearly similar to the *Wild Goose* in appearance, but of better quality and ripens immediately after that variety; both varieties are very little affected by the curculio; received by the Chairman from R. R. Hunley, Talladega, Alabama.

CHERRY.

Seedling.—From W. Van Gaasbeck, Hudson, N. Y. Medium size, very firm flesh, sweet. Its main merit is its extraordinary keeping quality. Mr. Van Gaasbeck states that the specimens sent had been kept by simply placing them in fruit cans and screwing the tops down tightly. The previous year they were placed in an open basket in an ice fruit house, where they kept better than in the cans. The tree is said to be a constant bearer.

GRAPES.

Elvira.—Presented by Isidor Bush, of Bushburg, Mo. Said to be a seedling of *Taylor* crossed with pollen of *Martha*, by J. Rommel, Morrison, Mo. Berry and bunch larger than *Taylor*, which it resembles in color, flavor, and season of maturity; said to be much more productive than the *Taylor*, and to resist the coldest winters, and also to be free from rot and mildew. Mr. Bush considers it a very promising white wine grape.

Early Dawn.—From William A. Culbert, Newburgh, N. Y. A hybrid between *Israella* and *Muscat Hamburg*; bunch large, long, compact, slightly shouldered; berry medium size, round, black, with a thin, blue bloom; pulp dissolving, vinous, without any Muscat flavor; quality very good.

Lady.—From George W. Campbell, Delaware, O. A seedling from the *Concord*, neither artificially hybridized nor cross-bred. It has the hardiness of vine and health of foliage of the parent, and ripens about two weeks earlier; not of the highest quality, but better than *Ives*, *Concord* or *Hartford*. These are the statements of Mr. Campbell, which, so far as the Committee can judge, are correct.

Seedling.—From F. W. Loudon, Janesville, Wis. *Delaware* and *Diant*; resembles *Diant* in bunch, berry and flavor. Promises well for earliness.

Gill Wylie.—From Dr. A. P. Wylie, Chester, S. C. Hybrid between *Labrusca* and foreign. Leaf with much red pubescence and much lacinated. Promises well as a wine grape.

The following are also from Dr. Wylie:

No. 8.—Hybrid between *Labrusca* and foreign; has much foreign flavor; very good, approaching *Black Hamburg* in quality.

Hybrid Scuppernon No. 5.—The vine possesses much of the *Scuppernon* character, and will be valuable in the South. Color, white; quality fair, as far as could be judged from the few specimens sent.

Mrs. McClure.—Foliage of the *Cordifolia* type. Bunch and berry of medium size, berry white; of medium quality.

We omit any mention of the fine collection of seedling grapes shown by J. H. Ricketts, of Newburg, N. Y., as a Special Committee was appointed to examine them.

Besides the fruits above noticed, many other varieties were presented to the Committee which are not mentioned here, being either not in season, or not giving promise of value.

P. J. BERCKMANS, *Chairman*.

GEORGE THURBER,

JNO. A. WARDER,

THOMAS MEEHAN,

ROBERT MANNING,

Committee.

Names and Synonyms.

BY CHAS. DOWNING.

Hunt Russet Apple.—From my own experience, and from examination and comparison, I am satisfied that Golden Russet of Mass., Fay's Russet, Russet Pearmain, &c., are identical with *Hunt Russet*, and that the latter is the original name, with synonyms as named below:

Synonyms.—Golden Russet, Golden Russet of Mass., Mass. Golden Russet, Golden Russet of New England, New England Russet, New England Golden Russet, American Golden Russet of New England, Fay's Russet, Russet Pearmain, Bullock's Pippin or Sheepnose of some, incorrectly, American Golden Russet of some, incorrectly.

Hill's Chili Peach.—It is now pretty well ascertained that this peach originated on the farm of Deacon Pitman Wilcox, of Riga, Monroe Co., N. Y., more than sixty years since, and is still healthy and bearing fruit, and was first called Connecticut peach. The tree is hardy, vigorous, and very productive, and is considered a valuable market variety. It is also said to reproduce itself true from seed, and the many names by which it is called in different localities is no doubt the result of its reproduction.

Synonyms.—Connecticut Peach, Madison, Wilcox, Stanley's Late, Cass, Leopard, Seagrove's Smolk, Sugar, Seagrove, Jenny Lind, Smolk, Queen of Sheba, Climax.

Ananas, or *Ananas d'Ete*. Pear.—There is much confusion in regard to the pears, *Ananas*, *Ananas d'Ete*, *Ananas de Courtrai* and *Henry IV.*, the three first having proved identical and the latter distinct. I have received trees and grafts of *Ananas de Courtrai* from many sources, both in Europe and this country, which when in bearing have proved to be *Ananas d'Ete*. From all I can gather of its history it is a very old variety and was first called *De Bouchet*, but was afterward named *Ananas*, which is still retained with the synonyms as follows:

Synonyms—De Bouchet, Ananas d'Ete, Ananas de Courtrai, Bouchet, Comperette, Beurre Ananas, Ananas Français, Summer Pine-Apple, Favori Musque, Favori Musque du Conseiller V. M., Henry IV, erroneously.

The *Henry IV* pear has but two synonyms, viz: Henri Quatre and Jacquin; and as we received it from Europe, and as it is generally known in this country, is a small pear of very good quality, but André Leroy, in his *Dictionnaire de Pomologie*, describes Henry IV as a large pear of second quality; which of the two is correct I am unable to say.

[The small musky pear is the true *Henry IV*.—B.]

May Seek-no-further.—An old variety of unknown origin, and the original name also unknown. It was once valuable as a long keeper and a profitable market variety, but now nearly out of use. It has been grown in various sections of the country under the following

Synonyms—Lopside, Lopside Pearmain, Filliken, May (incorrectly), Hoopes, Hopson, Hopsey, Black Vandevere, Romanite (incorrectly), Big Romanite (incorrectly), Black Pennoek, Gray Romanite, Hoopes' Pearmain, German Spitzenberg, Keystone, Greyhouse (incorrectly), Black Jack, Red Everlasting, Hard Red.

Walbridge.—This apple, of which so much has been said and written during the past few years in the West and Northwest as one of their hardiest and most valuable late-keeping apples for a cold climate, was carefully examined at the meeting of the American Pomological Society, in Chicago, last September, and decided, by those most interested and knowing it best, to be the *Edgar Red Streak*, which originated with Joseph Curtis, of Paris, Illinois, in 1818, and, according to the rules of most pomological and horticultural societies, *Edgar Red Streak* should be the true name.

Striped Gilliflower and *Scollop Gilliflower* Apples. These have generally been considered identical, but

experience and examination have proved them distinct. The *Striped* variety is a vigorous grower, with long shoots, and a good bearer. It is a showy fruit, and in some localities thought highly of for market and culinary uses; the fruit is variable in form and size, generally roundish conical, angular or more or less ribbed; skin white, striped and mottled with bright lively red; the flesh is whitish, crisp, juicy, with a brisk subacid flavor. The *Scollop* variety is a moderate or poor grower, the young shoots much darker colored, and the tree more spreading in form; it is a poor bearer and has nearly gone out of use; the fruit is roundish oblate conic, more ribbed; the color a much darker rather dull red with broader stripes and splashes than the *Striped*; the flesh is more yellow, of a mild subacid, aromatic flavor and richer in quality, and a month or more later in ripening than the *Striped* kind. They are known by the following names and synonyms:

Striped Gilliflower.—*Synonyms*. Striped Bellflower, Red Gilliflower, Scollop Gilliflower of some, incorrectly.

Scollop Gilliflower.—*Synonyms*. Ribbed Gilliflower, Five-Quartered Gilliflower, Red Gilliflower of some, Jellyflower.

ADDITIONAL SYNONYMS—APPLES.

Benjamite, syn. to Fallawater; Donahoe, syn. to Red Canada; Harris' White Hall, syn. to Dyer; Haven Pippin, syn. to Ledge Sweet; Juicy Bite, syn. to Better Than Good; May Flower, syn. to Baltimore; Moore's Shanty, syn. to Moore's Sweet; Mountain Green, syn. to Fallawater; Royal Red of Kentucky, syn. to Winesap; Red Winter Sweet, syn. to Moore's Sweet; Red Gilliflower of some, syn. to Red Winter Pearmain; St. John Strawberry, syn. to Early Strawberry; Yellow Flat, syn. to Winthrop Greening.

PEARS.

Beurre Roberts, syn. to Doyenne du Comice; Beurre Seringe, syn. to Doyenne de Saumur; Baron de Geer, syn. to Henri Van Mons; Ennes of Kentucky, syn. to Windsor; Esturion, syn. to Winter Nelis; Early Bergamot of Wisconsin, syn. to Passans da Portugal; Francis Borgia, syn. to Onondaga; Jackson's Seekel, syn. to Jackson's Elizabeth; Lauren's Summer, syn. to English Jargonelle; Phillip Goes, syn. to Barronne de Mello; Turner's Early of Illinois, syn. to Rousselet Hatif; Wredon, syn. to Delices de Charles. *Ananas*, *Ananas d'Ete*, *Ananas de Courtrai* and *Henry IV* (incorrectly), have all proved identical.

Rust.

HAYDEN, of Illinois.—In my case I had no rust in uncultivated ground, whereas it was very bad in highly cultivated ground.

MERCER, of Illinois.—I had it on all kinds of ground.

Postage on Third-Class Matter.

———, of New York, moved that members of the Society be requested to correspond with the members of Congress from their respective districts, with a view of securing a repeal of the law increasing postage on third-class matter passed last winter. Carried.

FLAGG, of Illinois, moved that it is the sense of this Society that the law of last winter relating to third-class matter should be repealed. Carried.

Miscellaneous.

MR. BARRY, of New York, spoke in praise of the exhibition of fruits, and especially of the seedling pears of Fox and Clapp.

He suggested that State Committees that had not already done so should forward their lists of fruit as soon as possible.

He hoped some way could be devised so as to show upon the catalogue the adaptation of a variety to a part of a State.

FLAGG, of Illinois, suggested that the use of the initials N., S., E., W., &c., to denote the part of a State could be used without much crowding the columns.

MR. BARRY said he had thought of that and believed something of the kind could be done.

MR. TRANSOU, of Tennessee, and MR. BEATTY, of Kentucky, thought some device of the kind necessary.

MR. EDWARDS, of Missouri, moved we adjourn *sine die*.

President WILDER expressed his gratification at the large and distinguished attendance, and congratulated the Society upon the great amount of work it had been able to get through in so brief a period. The Society was then declared adjourned,

and the members proceeded in carriages furnished by the commissioners on

A Visit to the South Park.

By the liberal arrangements of the South Park Commissioners the Society enjoyed the privilege of driving through those magnificent grounds. More than forty carriages were provided, in which, guided by the commissioners and their accomplished landscape gardener, H. W. S. Cleveland, Esq., the members of the Society passed over miles of broad avenues bordered with trees and beds of flowers, the roadways being as perfectly formed as any of those in the New York Central Park. The importance of these drives will be seen when it is stated that five years ago there was not a road in the vicinity of Chicago upon which a pleasure drive was not out of the question at most seasons. More than a thousand acres of land have been purchased, upon which work was commenced in earnest about three years ago. More than fourteen miles of sewers and drains, large and small, have been laid, and more than two hundred and fifty acres of flat, marshy ground converted into the finest lawn. Three hundred bushels of grass seed were sown in the autumn of 1874. The whole amount expended during that year was more than three quarters of a million dollars. The trees planted along the drive-ways are mostly elms, but the cut-leaved weeping birch has been found to succeed admirably and many fine specimens of that beautiful tree were noticed. The plan includes a Botanic Garden, which was commenced in the spring of 1875, and in which, under the care of Prof. H. A. Babcock, more than three thousand species of plants have already been collected. The whole of these extensive parks is, however, but a part of a general plan to surround the city with a system of parks and boulevards, forming a drive of twenty-five miles in extent.

The party are under obligations to the commissioners and to Mr. Cleveland and Prof. Babcock for many courtesies, and also for much information concerning the parks, for which we regret that we have not room here.

BANQUET AT PACIFIC HOTEL, FRIDAY EVENING.



The session of the Association terminated with a banquet tendered the Pomological Society by the Illinois State Horticultural Society on Friday evening. At 7 o'clock the doors of the ladies' ordinary of the Pacific Hotel were thrown open, and the assemblage to the number of about 200 hundred filed into the room. Across the head of the room a long table was laid, flanked on both sides by other tables, all of them profusely decorated with flowers and fruit, and brilliant with polished plate and crystal. As soon as the company had found their places, Dr. Hull called on President Wilder, who asked a blessing, and the *menu* was served.

Welcoming Address.

Dr. Hull, President of the Illinois Horticultural Society, then rose, and, stating that he had just received a telegram calling him hence, said:

MEMBERS OF THE AMERICAN POMOLOGICAL SOCIETY, LADIES AND GENTLEMEN:—I esteem it a great pleasure to welcome you to this festive board. We shall ever cherish a grateful remembrance of your coming among us. We have learned much from you with respect to pomology and horticulture in the near and distant parts of this country which you so ably represent. Your deliberations tend in a good degree to establish a correct nomenclature of fruits, as well as determine what varieties of each species are worthy or unworthy of cultivation, and the regions in which they may be most profitably grown. On all these points, and on many others, your authority is supreme. You have a great deal yet to do. Fruit and fruit-tree insects everywhere appear. These must be better understood and brought under control, that horticulture may become as profitable as other branches of industry. Another and a most invaluable feature of these meetings is, they bring together people from the North, South, East, West, and the British Provinces of America, and friendships are formed

stronger than political ties. It is in view of these amenities that we have invited you to the festivities of the hour, and having done this it is but natural that I turn to one who has done so much for pomology, and who is so well acquainted with you all, and ask him first to respond to a sentiment, and then preside during the remainder of the evening:

“The American Pomological Society—The first national pomological society in the world.”

Thank God, its first President, the Hon. Marshall Pinckney Wilder, still lives, and is here able to speak for himself.

President Wilder

then said:

Mr. President:—I thank you for your kind allusion to me and to the American Pomological Society, and for the courtesy and hospitality which have been extended to us by the Illinois Horticultural Society, over which you so gracefully preside. Especially would we thank you for this grand banquet, which affords us the privilege and pleasure of joining hands and voices with you in the recognition of friendship and good will.

We are happy to be here—here in this great State of Illinois—here in what was considered within our recollection, the far west, but which the progress of civilization has borne on its wings to seek a home on the waters of the Pacific. Truly, sir, we live in an age of remarkable progress and activity. But in nothing is this more evident than in the progress of the science we seek to promote, since the organization of this Society.

The progress of fruit culture in America is indeed surprising. No country possesses such advantages, no nation has made such progress, or has so many societies for its promotion. Some of us remember the time when there was not a horti-

cultural or pomological society on this continent—when not a pomological exhibition had been made in the United States, and not a paper or journal devoted to the advancement of these interests published in our broad land. Now these may be counted by the thousand. How amazing the progress! Look back to the time when this Society was formed, and compare that day of small things with the magnificent display of fruits which we have seen on exhibition in this city during the last few days—not only those from our western States, but fruits from almost every section of our wide-spread land, and those adapted to almost every climate of the world.

But great as this progress has been, it is but as the dim light of the morning to that millennial glory when our vast interior shall be adorned with orchards, gardens and vineyards, and the orange, fig and olive of the Pacific coast and our southern States, rival the fruits of the most favored foreign land.

In conclusion, permit me again to say, we rejoice to be here in this great central State of the west, so renowned for its growth, wealth and power. But, Mr. President, we come not only to advance the objects of our Society, but to foster a cordial and friendly intercourse between the various States and Territories embraced within our organization. And, coming, as we do, from different and distinct sections of our beloved country, to promote an art which is pre-eminently the art of peace, may we not hope also that our intercourse may be among the means which shall bind the people of this continent together in the bonds of perpetual friendship and union.

“A union of lakes and a union of lands,
A union that none may sever;
A union of hearts and a union of hands,”
“ONE AND INSEPARABLE, NOW AND FOREVER!”

First toast:

“The State of Illinois: Fertile in fruits and corn, it ought to produce, as it has, at least one good Beveridge.”

The Governor

said, Illinois ought to produce one good beverage, and he thought she had. It rolls in the waves and surges in the “white caps” of her beautiful lake, flows in her rivers, gurgles in her brooks, bubbles in her springs, falls in her showers, is distilled in dews—God’s own beverage for health and happiness and the healing of the nations, sparkling water. She has corn by the acre, section, township and county;

more corn than the granaries of Pharaoh ever treasured. Her native fruits were the crab, pawpaw and persimmon, but under civilization she has become one of the great fruit-growing States. No State has greater facilities for inland commerce, or a grander outlet to places beyond the sea. Fifty years ago there were no footprints of civilization where Chicago now stands; no spires piercing the heavens, no railroads, no wires resting in mid-air connecting the continents. Within the last third of a century more has been accomplished in the north-west than Methusehah ever dreamt of.

As Executive of the State, the Governor extended a cordial welcome to the guests, reminding them that the animosities of the war had been blotted out and brotherly love substituted, and that the Goddess of Liberty covered the land with her shield and showered blessings around promiscuously.

At this juncture Gov. Beveridge and Dr. Hull had to withdraw from the hall to take the train for home, and the entire assemblage arose and the band played as they retired.

The presiding officer then offered the second toast, as follows:

“The Pennsylvania Horticultural Society—The first horticultural society established on the continent; born, like the nation, in the shadow of Independence Hall. It shall next year, like the City of Brotherly Love, welcome in the old household the younger children of the Republic of Pomology.”

Hon. William L. Schaffer,

President of the Pennsylvania Horticultural Society, responded.

Mr. President, Ladies and Gentlemen:—It affords me very great pleasure to acknowledge the handsome compliment you have just paid to the Pennsylvania Horticultural Society, the oldest on this continent. Forty-eight years ago, when the Society was organized, its meetings and exhibitions were held in a moderate sized room and the fruits and flowers offered for exhibition and competition were very limited in variety and quantity. Gradually, as the public became educated to higher standards of fruits, flowers and vegetables, it was found necessary to increase the accommodations, and we now find with our large exhibition rooms in our hall, containing 15,000 square feet, we have barely room sufficient to display properly all the beautiful and useful offerings of Flora and Pomona.

Mr. President, what it has taken us forty-eight years to accomplish, has been almost rivaled by our

western friends in a comparatively short period. I paid a visit to the markets here and in Detroit, and was surprised to find such choice varieties of fruits and melons for sale at very moderate prices. And at the Inter-State Exhibition, too, there was sufficient evidence to show that the west will soon rival the old sections of the country in fruit productions.

But, Mr. President, if I was surprised at the progress made in fruit culture in the west, I was still more astonished at the rapid and vast increase in material wealth and improvement.

For instance, take the great State of Illinois and its beautiful metropolis, whose hospitalities we are now enjoying. This State has about 7,000 miles of railroad, covering all parts of its territory: this simple statement is sufficient to show the high rank it is entitled to take among its sister commonwealths.

But, Mr. President, what shall I say of Chicago, the beautiful. I came prepared to see something wonderful but my expectations have been more than realized. Its three parks, containing 2,500 acres, its water supply, and its elegant and palatial stores, dwellings, hotels, banks, and other public buildings, far surpassed my fondest imaginings; truly it is well worth a journey from the sea-board to witness.

And now, Mr. President, I desire to return my cordial thanks to the Illinois State Horticultural Society, the Park Commissioners, and the Illinois State Industrial Exposition, for their courtesies and hospitalities during my stay here, and I sincerely trust we shall have the pleasure of meeting you all in the City of Brotherly Love during the Centennial next year.

Mr. A. W. Harrison,

Secretary of the Pennsylvania Society, also responded:

When our honored President announced to me this afternoon that he should call upon me for a speech at the evening banquet, tendered to us by our hospitable friends of Chicago, I plead with him to spare me the task and you the infliction; but he was inexorable, and his word was like to "the law of the Medes and Persians, which altereth not." So I must e'en bow submissively to his fiat, and accept the new version of the old saying, "no song no supper," which we must read "no speech no dinner," on this august occasion. You are all aware that he whose genial face beams proudly upon us to-night

from yonder lofty chair has, for over a quarter of a century, presided over the destinies of the American Pomological Society; but it is, perhaps, not known to many of you here that he is also the honored President of the New England Genealogical Society. It may not, at first, seem that there is any relation or connection between these two sciences of Pomology and Genealogy, that should make it fitting and appropriate for one person to preside over both these interests, but when we call to mind that they are in truth, the most ancient of all human interests; that while the apple was the first fruit of which we have any record, we are, all of us, the fruit of the first "pair" that flourished in the garden of Eden. I trust you will agree with me in the thought that our worthy President is, of all men, the very best to guide and direct us all in their knowledge and study, and in the hope that he may long continue to honor and adorn his twin offices.

My valued friend and superior officer, President Schaffer, has already invited you to a social re-union in Philadelphia in 1876. I cannot add to the sincerity or the warmth of his proffer of our hospitality, but I would ask you to participate in another anniversary which to us Pennsylvanians is inferior in interest only to the great Centennial celebration.

On the 21st of December, 1827, a sprightly, ambitious youth, Horticus Pennsylvanicus by name, whose elder brother, Rusticus, had previously espoused dame Nature's elder daughter, Ceres, not having the fear of the law of bigamy before his eyes, took to wife her *two* younger daughters, Flora and Pomona; the union has been a happy and a fruitful one, the sisters have lived together in peace and concord for nearly half a century and we, their grateful children, in behalf of the many hundreds of brothers and sisters whom we have left at home, now offer you a cordial invitation to join us in celebrating, at the old homestead of Philadelphia, on the 21st day of December, 1877, the Golden Wedding of the "old folks at home." Though the weather may be cold your welcome shall be warm, and we shall esteem it a privilege to renew the pleasant acquaintances we have made, and to reciprocate the hospitalities we have enjoyed during our brief stay in your noble city.

The third toast was as follows:

"New England—First in war and first in peace: she leads the van of rural industry with her Massachusetts Horticultural Society.

Mr. C. M. Hovey, Ex-President of the Massachusetts Horticultural Society, Responded.

Mr. President and Ladies and Gentlemen:—I did not suppose you would call upon the delegates from Massachusetts for any speech this evening. Having sent here a delegation, not only of gentlemen, but of ladies, too, so large as to fill up the Pullman palace cars, we thought this would be ample for our share of the meeting.

However, sir, I am glad and always ready to respond for the Massachusetts Horticultural Society, for I have a pride in her growth and prosperity. She has long labored in the cause of pomological science, and she does not permit her interest or her influence to flag. There has never been a meeting of the American Pomological Society, since its organization, no matter in what part of the country it has been held, however remote, that she has not sent a goodly number of her most enthusiastic members as delegates, sufficient, certainly, on this occasion, to re-assure our Western friends of the same zeal and the same interest she has always manifested in the science which is the specialty of this Association.

Mr. President, it is needless to say that we are delighted with our visit. Many of our delegates have visited the Garden City for the first time, and they have been surprised, not so much at the gardens as they have at the magnificence of your city—the style and grandeur of your buildings—equaling, if not surpassing, our eastern cities. We have been surprised at the extent and beauty of your Industrial Exhibition, as well as the grand display of fruits, the latter probably never excelled, and yet a very large portion of that sent here remains unpacked for want of room. It is not only a credit to the intelligence and industry of the western people, but shows how fertile is your soil, and illustrates how great are the resources which have earned you the name of the Granary of the World.

But, sir, I shall not delay you with my remarks. I repeat, we have been delighted with our visit—delighted with Chicago, its magnificent hotels, of which many of us of the "Hub," about which the universe is supposed to revolve, know little or nothing. Delighted with your parks, commenced on a scale commensurate with the needs of a great and thriving city; with your water works, supplied from a source that no fear need be entertained of a want; with the polite attention of the Illinois Horticultural Society; in short, with everything—and we return home pleased with all we have seen—gratified at the old friendships renewed, and the

new acquaintance formed with the enlightened cultivators throughout the entire west.

President Wilder happily remarked: "As variety is the spice of life, I present you with a 'Granger's Welcome,' and introduce Prof. Rodney Welch."

Prof. Welch, of the *Times*, read the following poem:

"Wise men from the east," we welcome you here,
To our plain backwoods banquet, our rough western cheer;
Though we've few Boston nick-nacks to grace our rough boards,
We have piled on the best this poor shanty affords.

Our food is corn dodger and flesh of the swine,
Our champagne's made of corn; of barley our wine.
We ride in farm wagons, we sleep on "shuck" beds,
And your Boston-made hats are too small for our heads.

We are out on the border, and do not propose
To match you in living or wearing store clothes,
We strive to take comfort, and lightly we prize
Your three-story boot heels or paper neck-ties.

We are all border ruffians, and proud of the name,
We have staked out our lot, and we call it our claim,
We are armed to the teeth, and our teeth are home-made,
We can fight if we must, though it is not our trade.

Daniel Boone was the Trojan who first sought our shore;
The rifle and flask the Penates he bore;
While most of our classics—and they are but few—
Were composed by the Choctaws, the Pawnees and Sioux.

Though awkward our manners, and barbarous our speech;
Though our words pain your ears like the savages' screech;
Before you condemn us with scorn or with sneer,
Think how far 'tis to Boston, and don't be severe.

I know a fond mother, who assures her three boys,
If they grow up in virtue and make no loud noise,
Say "Yes, ma'am" and "No, sir;" be very precise
In blacking their shoes and keeping them nice;

If they learn all their lessons and keep at the head,
And each night say their prayers e'er they jump into bed;
If they never rob birds' nest and never tell lies,
They shall all go to Boston instead of the skies.

Our common you've seen; you can walk there for hours;
You may tread on the grass; you may pluck the wild flowers;
You may smoke there at will, and at every half mile
There's nothing to hinder enjoying a smile.

And now, boys, take our hands; they are hardened by toil,
They are moistened by sweat, they are blackened by soil;
Go with us to our huts; there's no lock on the door,
And we'll make a field-bed on the soft prairie floor.

Though you're Jews, still you're welcome to draw from
our well,

Though to spies, if an hungered, still food we will sell,
And you'll find your corn money, each man in his sack,
And we'll give you our Goshen if you will come back.

The fourth toast of the evening was, upon conclusion of the poem, read as follows:

"Nebraska—The 'Great American Desert,' that blooms and blossoms like the rose under the genial influence of the Nebraska State Horticultural Society."

Mr. J. T. Allen, President, waived the accorded honor of responding, and introduced Hon. J. Sterling Morton, who spoke as follows:

Speech of Hon. J. S. Morton.

There existed a long time ago in France a farmers' society of learned men. The number of this organization was limited to an hundred persons; and one of the cardinal dogmas of the members was to "think much and talk little." Silence and science, reticence and reflection, were esteemed as twin virtues. Therefore when a very learned Abbe made application for admission, and the limited number had been already reached, he was answered by sending him a goblet just even full of pure water, not a single drop could be added without an overflow of the brim. To this delicate symbolism of the fullness of the society, the Abbe quickly responded by placing upon the beaker a single rose-leaf without displacing a particle of the water it contained and sending it back again. And upon its receipt he was admitted to the society with much unanimity and congratulation. So, to-night I, coming from the youngest of the nephews of Uncle Sam, from the Benjamins of States, place from the brief experience of our few years' service in pomology and horticulture, a single rose-leaf of congratulation upon the overflowing cup of festivity which here to-night is warming hearts from all portions of our strong and prosperous country.

Twenty years ago the Indian, the wolf and the buffalo held undisputed possession of interior Nebraska. But the Indian has followed the buffalo, as the other soldiers have followed their commissary stores, and the wolf has tagged at his heels. The rustle of their departing footsteps has hardly expired from among the rank grasses of the prairies, and the smoke of their camp-fires has hardly commingled with the clouds, before fields, farms, hedge-rows and orchards have sprung into being with a magic and perfection of beauty such as mythology attributes to Minerva when born from the brow of Jupiter.

From the "Great American Desert" of our school-boy geography, it is our pride to bring hither and exhibit these rich and luscious fruits. Competing with all the States of the American Union, at Rich-

mond and at Boston, Nebraska has been awarded by competent, honest and unprejudiced committees of the American Pomological Society, the highest honors for apples, pears, peaches and grapes. But it is not becoming in the subaltern to talk of war in the presence of Hannibal, nor is it in good taste for the representative from the youngest State Horticultural Society to discourse of pomology and its triumphs before Wilder and Hovey, Barry, Moody and the other honorable veterans of the American Pomological Society. Some years hence Nebraska will have taken her proper position in public esteem, and then will be known as second to none in horticulture, pomology and forestry.

The fifth toast was the following:

"The Maryland Horticultural Society—Our coming hostess; young in years and fair in features. We ask no better welcome than we know that she, with her seaside fruits and flowers, will give us."

As the representatives from Maryland had left the hall, there was no response, the President remarking: "We will pay them for it in 1877."

The sixth toast was then read:

The Ohio Horticultural Society—We award her a warder who will ward her from all horticultural heresy and lead her in the pleasant ways of pomology.

Dr. J. A. Warder, Vice President,

from Ohio, was introduced as the "Surgeon of the American Pomological Society." He claimed antiquity for the Society of his State, and gave due credit to the eccentric "Johnny Appleseed" for the part he had played in the pomology of the State. Ohio was the first of all the States to be cut out of the northwest wilderness. She looked first to the east, but has since learned to look to this great granary country for instruction in pomology.

Next came the seventh toast, as follows:

The Canadian Dominion, our northern and next-door neighbor—while she boasts a Burnet, a Beadle, and a Hamilton, her northern climate will be more than overcome by the skill and energy of her horticulturists.

Dr. C. C. Hamilton,

Vice President for Nova Scotia, said:

Mr. President, Ladies and Gentlemen:—The honored President of the Pomological Society, in several communications sent to me during the summer, expressed a wish that Nova Scotia should be represented at the meeting of the Society in this place, not only by a large delegation, but in

her fruits. In order to gratify the worthy President, whose soul and energy seem to be devoted to the furthering of the great objects of the fruit-growing interests of this continent, I attempted to bring with me some of our early pears, plums and apples: but the *baggage smashers* were determined that the package should not arrive whole, and out of the wreck we saved but few good specimens fit for exhibition. The President therefore, seeing our failure in this respect, has promulgated a sentiment in reference to the Dominion of Canada, and has called upon me to respond, being determined that something from us should be exhibited, either at the exhibition in the building where the products of the west are now being shown, or in this room before this large and intelligent assembly.

Now, ladies and gentlemen, if I were in the habit of addressing public assemblies, and an American citizen, I might find plenty of material in the vast territory possessed by the United States, her many resources, rapid development, large farms, herds of cattle, extensive orchards, and especially the progress made in the cultivation of fruit, her many new varieties of apples, pears, peaches and plums, to say nothing of the grape, orange, &c., but being simply a Nova Scotian, from a little spot in a geographical point of view, it would be difficult for me to entertain you with anything interesting to this audience, or gratifying to myself; especially after we have had the pleasure of listening to the eloquence of Governors of States, Professors of Universities, Lawyers and Doctors, upon the principles and laws which govern and control the growth and production of fruit, &c.

I feel a pride, however, in being a Nova Scotian, and connected with a country (England) upon which it is said the sun never sets.

As regards Nova Scotia, I may say a few words in reference to some things besides her fruit growing capabilities.

It is said we have more and better fish around the coasts of the Province, Prince Edward Island and Newfoundland, than all the world besides. Some persons may consider this a pretty big fish story, nevertheless I believe it is true. As regards coal, some of our entire counties lie on a coal foundation, while we have grindstones of the best quality, and plenty of building stone, lime, plaster, copper, iron and gold. We are a maritime people, and own nearly five hundred thousand tons of shipping, about one and a quarter tons to each inhabitant (our population is about 400,000); so you will see by these statements that the little spot

represented on the maps, about large enough for a Chicago merchant to ship his grain upon, has something reliable within her borders.

The Province, being pushed out into the Atlantic Ocean, and nearly an Island, is not so cold as some places with a more southern latitude, and receiving, as we do, some benefit from the Gulf Stream passing our coasts, our climate is quite favorable for producing the more hardy kinds of fruit.

While Nova Scotia as a whole is a good farming country, some portions only are well adapted to fruit-growing. The Annapolis and Cornwallis Valley, stretching from the Annapolis Basin on the west, to the Basin of Minas on the east, being over one hundred miles in extent, and consisting of a sandy loam, with occasional spots of a stiffer soil, and protected on the north by the North Mountain, from four to five hundred feet high, is our best fruit district. On the north of this mountain range lies the Bay of Fundy, where the tides rise, at spring tides, to the height of over seventy feet. This constant ebb and flow of the tides in easterly and westerly directions, has an influence on the north winds as they pass from the Upper Provinces to the sea coast. It is in this valley where the apple, pear, plum and cherries are extensively cultivated and succeed so well. Grapes and peaches, with good northern protection, and skilfully cultivated, in some seasons ripen and do well. The apple, however, is our chief crop, and last year the yield must have exceeded, in the whole province, over 200,000 barrels. We cultivate all the most useful and hardy varieties, such as "Gravenstein," the king of apples, "Yellow Bellefleur," "Baldwin," "Ribston Pippin," the "Spitzenburghs," "Russet," &c.; while the "Greening," "Newtown Pippin," "Fall Pippin," and some few of more southern origin, do not succeed so well.

The Fruit-Growers' Association of Nova Scotia has been in operation for about twelve years, and is doing a good work in increasing and developing our fruit-growing capabilities.

Having made these few rambling remarks in response to the sentiment proposed by the worthy Chairman, allow me in conclusion, to thank the President for the allusion to the Dominion of Canada, and the friendly relation existing between the two peoples; and allow me further to express the hope that nothing of a political character shall occur in the future to disturb those relations; and that the Pomological Society of America may go on and prosper, embracing in her meetings and social gatherings the prominent fruit-growers of

both countries bound together in amity and friendship.

Before I take my seat I must not forget, on behalf of the Provinces, to thank the citizens of Chicago, the Queen City of the west, as well as the delegates of this Convention, for the kind manner in which they have received the delegates from Canada, and regret that we numbered so few, and so small in ability to be able to add much to the interest of such an occasion.

The President said he had now come to a State that "never tires," and read the eighth toast:

"Virginia—The ancient mother of our young Illinois. We tender a cordial welcome to our brethren of the old homestead." Col. Chamberlain responded briefly as follows:

Response by Col. S. E. Chamberlain.

Virginia, the mother of States, comes to-day robed in mourning and in widowhood, with heart weighed down with grief of the past. Her arms are laden with fruit from her gardens, bearing them as offerings of love and respect to present to her daughter, Illinois, who stands at her reception arrayed in all the splendor of wealth, beauty and pride, the admiration of all. She greets her old poor mother with open arms, and with fond and close embrace imprints upon her brow a kiss of warm love. Virginia, the proud mother, raises her bowed head, throws back her silvered locks, cuts off her robes of mourning, renewed in strength, vigor and age, and with joyful heart stands forth thrilling with pride for her daughter, and they now stand side by side, hand in hand, to receive with hospitality the whole world.

The ninth toast was:

"The Missouri State Horticultural Society—she has absolutely refuted the old but now obsolete proof, 'that a good wine needs no Bush.'"

The knob of the toast was lost by reason of the absence of Mr. Isidor Bush, who was to have responded. Prof. Tice, better known as "Probs. Jr.," made a characteristic speech, during which he stated that he had predicted the fierce storm of the night previous, and had warned a Chicago editor of its approach. Why he could do this was as much a mystery to him as to others.

Mr. Flagg, the Secretary, was called upon, and responded hurriedly, being about to leave for the train, to meet an engagement with the "grangers," of Hannibal, to-morrow. He said (or would say if he had it to do over again): Secretaries are like children, "to be seen and not heard;" and I had not

expected to be called upon, and would not, except for our President, whose word is law. I only desire as an Illinoisan, in the first place, and as Secretary of the Society, in the next, to express my gratification at the cordial response that has been made from all parts of the country to our efforts to secure a creditable meeting and exhibition at Chicago in this most unfavorable year. I desire, for one, to return thanks to our friends from the extremes of our country who have come so far and brought so much to make this meeting a success.

"Horticulture, the earliest occupation of man—may it be the last!" Mr. Thomas Meehan, of the *Gardener's Monthly*, replied to this toast.

Response by Mr. Thomas Meehan.

Mr. Meehan said: "I feel deeply the honor conferred on me by the invitation to respond to a sentiment like this, and I am sure I may return thanks for those horticulturists, whom, in a measure, I represent, for the honor offered them through me.

But first allow me to respond to the gentlemen who preceded me, Messrs. Schaffer and Harrison, and who requested me to add a few words to theirs in behalf of the forthcoming great American Centennial. They have well set forth to you the advantages which will accrue to us all from that joyous occasion, and I am at a loss what further to say. I do not know that I can do better than recall to your attention an incident which occurred a great many years ago, and which seems to have a special bearing on this case. An old-fashioned clergyman,—a very plain man—was invited to preach a sermon calculated to draw money from the congregation for a charitable purpose. This plain old man ascended the pulpit, and in a plain way read this plain text: "He who giveth to the poor lendeth to the Lord." Then he remarked: "My friends, this is as plain as I can put it. If I were to preach for an hour, it could not be plainer. All of you who believe the Holy Scriptures, and are satisfied with the security, down with the dust!" Now, Ladies and Gentlemen, a distinguished philosopher—one of the greatest the world has ever produced—the immortal Jack Bunby, tells us that the value of an argument lies in the application of it. Therefore, all you who believe in what our friends have told us about the Centennial, have simply to "down with the dust," and Deacon Schaffer may pass around the plate. President Schaffer was entrusted by the Centennial Commissioner with stock for any one who might be willing to sustain the enterprise in this way.

And now, Mr. Chairman, to return to the sentiment offered by you, let me say that I regard the reference to man's early occupation as a particularly suggestive one. Even humanly speaking, it was a happy thought to place our first parents in a garden, for we can see in our day that under no circumstances can man draw nearer to his Maker than when pursuing the arts of gardening. We have been taught that man is made after the image and likeness of God—that we are his children—and I love to believe that this is something more than mere garniture for a Sunday sermon, to be laid aside as so much nonsense during other days of the week. As his children we must possess, though in ever so small a degree, some of his attributes, and we do see, especially in horticulturists, some of that unselfish generosity highly developed, which must be unmeasurable in the Father of us all. We cannot be of any possible use to him, yet he cares for us unceasingly, and in a thousand ways. I could refer you to innumerable instances of how in our humbler human way the horticulturist cares unselfishly for his fellows, as indeed the bountiful banquet of which we are the honored partakers to-night, is an apt illustration. But I will only ask you to go with me to the nearest parlor, where perchance some few window plants may be blessed by the oversight of some good lady, to whom they are in a certain sense all in all. They are of no use to her, as she would understand usefulness. They give her nothing to eat—nothing to wear. They do not even give her that which is so dear to a genuine female heart, their love. Yet she furnishes them with food and drink, her fair fingers search for every decaying leaf and her hand guards it from every harm: and when she sees the blossoms open, she feels a greater pleasure in her unselfish work than though it poured forth gold, ready coined, into her hands.

And this reference to a lady, reminds me of one whom few of you know, but whom I know better and above all, and with whom I was walking about our grounds this spring discussing where walnuts, chestnuts and other similar things should be planted to grow up and bear fruit. "But," she remarked, "it is no use for us to plant these things; we shall never live to eat from them." And then we moved our camp-stools to the shade of some aged apple trees, where, one falling in her lap, she remarked, "Yes," let us plant the walnut trees. Others planted these apples for us; let our hands do a like service for those who come after us? And this is the lesson horticulturists learn. Some merely get so far as to do unto others as they would have others do to

them. We go further and do for others what they have already done for us.

And then may horticulture be man's last occupation. Never, perhaps, as man grows up amid the cares of business and of the world, does he ever have the same pure pleasure as when a child he filled his little bit of garden ground, and saw his beans and "Johnny's" grow. Some few have had the happiness, as age grew on them, to turn to their first loves. May it be the lot of all!

There seems, Mr. Chairman, many more things that I ought to say to you to-night, but somehow to-night I am nearly like the countryman who read Shakspeare, only just the reverse. He had had a poor opinion of the poet, but after reading he thought he was not such a bad fellow after all, for he had read several things in his works he would never himself have thought of. In my case the good thoughts are all on the outside, and there are but few left for me. I fear my remarks may be more serious than the occasion calls for. Something more witty would have been in better taste. Well, sir, as brevity is the essence—the soul—of wit, I will close by again thanking you.

"The Agricultural Press." Responded to by

Mr. Jonathan Periam,

of the Tribune.

In response to this toast Jonathan Periam being called upon, said: I fear, Mr. President, I may get somewhat tangled in the multiplicity of presses connected with this subject. For there is the Hay press to take care of that most important of agricultural products, grass, and those others, cotton, hemp, flax and so many manufactured products. Then there is the Cider press, with its many pleasant boyish associations; the Wine press, sometimes trodden in wrath; the press of Daily Labor, profitable but not always pleasant; and the press of the Grangers and Farmer's Clubs, brought to our railroads and middlemen. In relation to this last, however, I claim an interrogation mark, and a mental reservation.

But, Mr. President, and ladies and gentlemen, I suppose it is of that so-called black art that has enabled mere civilized man to reach the present state of enlightenment: it is of this I am expected to say something: That art which Mercury-like carries intelligence into every homestead in the land: that has rendered it possible for each succeeding generation to far outstrip its preceding one in all that pertains to art and science; without which

high civilization could never have been born; this power for good—yes, and sometimes for evil—this power fostering agriculture and the arts; civilization and commerce; lifting liberty from the shackles of serfdom; making tyrants tremble and good men rejoice; asserting the nobleness of labor, it has cast its ray of light around the earth as a girdle; has crystalized the scintillations of genius; made man potent with an almost god-like power; has brought down to us the history of long past ages, and, which will stretch forward in the far future carrying civilization and enlightenment to the ends of the earth.

It is not necessary for me to say, that upon the newspaper press of a nation rests the well-being of a people; that upon journals devoted to the technology of particular arts, rests the growth of that art; that the general intelligence of communities and people are fostered and fixed by the literature they read. This is well known to all present, as facts fixed and incontrovertible, just as it is patent that nations wax great and powerful in proportion to the extent of their arts, manufactures, and commerce. Yet all these must rest primarily upon the strong foundation of a diversified agriculture. These being admitted, agriculture must stand and grow through the ability of its press, or languish if cordial support be withheld.

Until the art of printing rendered it possible to disseminate intelligence broadcast by means of the press, there could be no real growth in agricultural art. The sons plodded along in the same narrow groove of their fathers. Husbandmen were slaves, serfs, hinds, anything but real freemen. New processes indeed were discovered, but they either died with their discoverers, or else were only disseminated from individual to individual orally, and, of course, locally. When the agricultural press was born; when after many weary years of toil, it began to be recognized for the value of its intelligent handling of subjects connected with agricultural art; when after still farther toil and struggle it reached its present position as the exponent of all that is valuable in agricultural art and the sciences bearing thereon; at last it came to be—as it now truly is—considered as indispensable to every intelligent farmer, just as other industrial journals are to the arts they seek to foster, or the daily journals are to the great laboring hives of humanity everywhere.

So the agricultural press, first in England, Germany, France and the United States, came to be the real exponents of all that pertains to agricul-

ture, the art upon which all other industries must necessarily rest as the sure basis of their prosperity.

It is true, Mr. President, that we have agricultural journals—in fact many of them have in this country become so modified that they have come to embrace light literature and politics, as a part of their material. Some, in fact, are more literary in other departments than in agriculture. They, as every newspaper must, cater to the circle of readers for which they are intended. But the great heart of the agricultural press is sound and steadfast; throbbing in unison with that of the people, giving life and energy to the art it practices; and there are many of our daily journals that now give space to agricultural intelligence, and a few which really contain more agricultural reading each week than some agricultural journals themselves.

All this is cheering, and a sign that we are fast passing out—have passed out—of that era where book farming—as some old fogies called these journals—was despised. We are coming to a higher, broader and brighter level, and time, which brings all things right, will in the end bring every successful farmer to be a reading, and thinking, as well as a practical man.

The true agricultural press must, therefore, be the bulwark of agriculture, just as the general press of the country is the bulwark of a free and enlightened people.

What then is this mighty power that has made the peaceful conquest of continents possible; what has given us a civilization such as no ancient nation ever knew; that has sent the best sons and daughters of the civilized world to rear homes from the Atlantic to the Pacific; that has covered this vast and fertile west with boundless fields of grain, and countless herds of cattle; that has made a wilderness to bud and blossom, and gardens to drop ripe fruits everywhere. What has made it possible to bring together in this city, the horticultural products of thirty States and Territories, covering an area greater than that ever held by ancient Rome in the height of her power and glory. That is even now clothing these great prairies and the vast plains beyond with a wealth of timber for another generation, which shall yet render this mighty west the most glorious country the sun ever shone upon.

It is the agricultural press! Not only of this State; not only of other States; not only of this country, but of the civilized world. So far as we are concerned, Mr. President, it is every journal in the land which, through its daily, weekly or monthly issues simplify processes, or give intelligence that

shall aid agriculturists to feed the toiling millions of our cities and villages, or which shall enable this food to be carried to them more cheaply than before. It is every yearly volume of transactions, collected and sent out to the people by such societies as ours, and kindred ones all over the land. It is the record of our Boards of Agriculture in every State. It is every book, every imprint, which treats practically of or applies science to agriculture.

I use, and I do like to use this grand word in its broad sense as embracing the whole art of soil culture—husbandry, stock-breeding, dairying, etc., horticulture and its best loved child, pomology; floriculture and landscape gardening. It is one of the noblest words in any civilized language, and through its fostering power, the agricultural press, nobly has the art been fostered.

Long centuries ago, while yet Europe was wrapped in barbarism and the gloom of superstition; long before Cæsar had found England, and her people, too embroiled even for slaves; before Rome had reached the zenith of her power and glory, the mere shadow of modern civilization; when letters were known only to a few—and printing was not—our antipodes, an almond-eyed, black-haired and russet visaged people, were printing toilsomely from rude blocks of wood. If they had done no more than crystalize such sayings of their great teacher, Confucius, as "He who planteth a tree watereth the earth," this alone would convey a meaning that western men well understand.

But a few centuries ago, a then obscure German discovered the art of printing from type. Later this discovery made it possible for Evelyn to teach "gardening to speak English." Transplanted here it has enabled a Downing, a Buell, a Kennicott, an Overman, a Miller, a Tucker, and many living compeers—not a few of whom I see present—who are toiling to still farther educate the masses through this greatest of human means, the enginery of the press. This winged Mercury, God-given, gathering its news from the uttermost parts of the earth, born of the Aurora of morn; rolling with the sun on the wings of the morning, urged by the power of lightning, driven by steam, it comes freighted ever with new intelligence: urging forward the halting, convincing the doubting; soothing the weary; comforting each son and daughter of honest toil, and gladdening alike the hearts of all. Archimedes said if he had a point upon which to fix a lever he could move the world. He had the fulcrum, then, weak, it is true—agriculture! The lever he had not. It remained for a nation, rising

from the ruin of a lost civilization, through the long centuries of the dark ages, to discover this lever—The Press!

In conclusion, Mr. President, allow me to give as a sentiment, "the Press, the lever, Agriculture, the fulcrum, it moves and feeds the world."

"The Park Commissioners"—

Response by Mr. H. W. S. Cleveland.

In the absence of Mr. Geo. W. Gage, who was to have answered for the Park Commissioners, President Wilder called upon H. W. S. Cleveland, Landscape Architect of the South Park, and mentioned in introducing him that he was one of the earliest officers of the Pomological Society. Mr. Cleveland replied as follows:

Mr. President and Gentlemen of the Pomological Society—I rejoice on one account that I am called upon to speak for the Commissioners of the South Park, since it enables me to say for them, and of them, some things which modesty would prevent them from saying for themselves, but which I am glad of the opportunity to express.

You have seen to-day in the course of your drive through the park and boulevards that a great deal of costly labor must have been expended in converting so large an area from the condition of wild prairie into one of luxuriant vegetation, and probably most of you are aware of the great temptation which always assails those who have the direction of such works to spend largely for merely meretricious artificial ornaments, in the form of rustic work, bridges, fountains, arbors, statuary, &c., which catch the eye of the people.

From the commencement of the work on the South Park, I have held that no such style of ornamentation was consistent either with taste or economy until the city had grown up around it, so that the architectural surroundings would be in keeping with such decorations, and every available feature of natural beauty had been developed to its utmost capacity. In this opinion I have been fully and firmly upheld by the Park Commissioners. My duty has been simply to furnish the designs for the arrangement and planting of the grounds, which I have done to the best of my ability, but I have enjoyed the satisfaction of feeling that I was backed by the hearty sympathy and coöperation of the commissioners, by whom I was employed, who have enabled me, with the aid of most efficient assistants, to do all the work thoroughly and well, and have never subjected me to the very common annoyance

of urging the adoption of methods of improvement or decoration which good taste could not sanction. It affords me very great pleasure to avail myself of the present opportunity to express my sense of their liberality and judicious management.

And now permit me to say a word upon another subject. Your honored President has alluded to the fact of my connection with this Association in its early days. Twenty-seven years ago I went to New York, as a delegate from the New Jersey Horticultural Society, of which I was then Secretary, to attend the convention which resulted in the organization of the American Pomological Society. You will find my name in the early reports as one of the active participants in all the meetings for some years after its first organization until I adopted the profession of landscape gardening, since which (now some twenty years) I have never attended a meeting till the present year, and now as I look around me and catch here and there a glimpse of features, furrowed and silvered by the hand of time, yet wearing a strangely familiar look, I realize the sensations of Rip Van Winkle on revisiting the once familiar scenes of his youth after his long sleep. Visions rise before me of familiar faces I shall never see again, and the sound of voices fall upon my ear which have long been silent. I recall the form of Walker of Massachusetts, and the quaint humor with which his wisdom was illumined; of A. J. Downing of Newburgh, whose life was that of a public benefactor, and whose death was that of a hero! of W. R. Prince, of Flushing; Thos. Hancock, of New Jersey; Dr. Brinckles, of Philadelphia; Ernst, of Ohio, and Kennicott, of Illinois. All these have gone to their rest.

President Wilder—(Interrupting in a tone of deep feeling) "And I am still left."

Mr. Cleveland—(Resuming) Gentlemen, these are sad reminiscences which I trust you will pardon for they force themselves upon me and "Will not down."

I thank God for the pleasure and gratification it affords me in the midst of all the changes which this occasion calls to mind, that I still am able to see the now venerable form of your distinguished President still occupying the chair, in which I had the honor by my vote of assisting to elect him at the first meeting of the Society.

"Entomology—the younger sister of horticulture, it has its home in Missouri."

Response from Prof. C. V. Riley,

who said:

Ladies and Gentlemen—I appreciate the sentiment in the toast, however unable I may be to do it justice. Glad am I to know that the two important and influential societies represented here tonight, and embracing the leading fruit-growers of the nation, admit entomology even as the younger sister of horticulture. But a few years back and the word entomology was hardly heard in your discussions, and many a fruit-grower would have been puzzled to define its meaning. Thanks to the labors of men like Ratzeburg, Nordlinger, Gerstaecker, Guerin, Burmeister, Meneville, Gerard, Westwood, Curtis, and others in Europe, and of Harris, Fitch, Walsh, Le Baron, Thomas, Trimble, Le Conte, Packard, and others in this country, the economic bearings of the science are to-day more fully appreciated. Though dealing in small things, entomology is a vast science, for the number of insects in the world exceeds ten-fold that of all other animals put together.

In the early history of horticulture in America, when there was more perfect harmony between the plants and animals of the country, the fruit-grower had few insects to contend against; but, as has been so well said by the Presidents of both the societies represented here, just in proportion as you increase and improve your fruits, in like proportion you increase the insect enemies of those fruits, and whether in the rigorous regions of the North, the balmy clime of the South, the moister air of New England, or the sunny Pacific slope, insect pests confront the fruit-grower on every hand, and too often take away his profits. We can only master these enemies by learning their habits and their weak points, and to do so requires much labor in the field and close deliberation in the closet. Proud man is often vanquished by his tiny insect foes. Yet I believe there is no insect that may not be conquered. Achilles, you know, was invulnerable everywhere except in his heel, by which his mother held him when she dipped him into the river Styx, to make him invulnerable. There is a vulnerable point in the life-history of every insect, if we only, by diligence and study, ascertain it. Entomology has long been kept in the background; yet it may be that this—the youngest sister of horticulture—is, like Cinderella, destined to shine even brighter than some of her sisters.

With reference to her flourishing in Missouri, I appreciate the compliment paid to my own State; the central spot in a glorious union, to which all

things converge, with every resource, not only entomology, but every science and every art, is, I hope, destined to flourish within her borders. Her horticultural society, like a good vessel, has weathered many storms, and is to-day under a cloud. She cannot be expected to compare with that of her sister State, Illinois, whose *Hull* is so well freighted with the fruits of experience, and whose *Flagg*—pardon me, I mean banner—reflects so much knowledge and intelligence; but “behind the clouds is the sun still shining,” and the sun of Missouri’s horticulture will, I hope, soon shine all the brighter for having been behind a cloud.

“The Future of Horticulture.”

Response by Prof. H. H. McAfee, of Iowa.

[NOT RECEIVED.]

President Wilder

then expressed his gratitude for the courtesy and hospitality extended him here. When Chicago was in ruins, Boston was the first to come to her aid; and when a little later Boston was swept as with a besom of destruction, Chicago sent \$100,000 to her relief. They were side by side in adversity, and henceforth, like twin sisters, he hoped they would stand side by side forever.

I cannot allow this occasion to close without expressing the great gratification I have experienced in meeting so large an assemblage of the fruit-growers of our widely extended land. With thanks to you for your personal respect, and with the hope that we shall meet next year on the Centennial Celebration of our nation’s birthday, when we are to have a social reunion, I now pronounce the present session closed.

With the singing of “Auld Lang Syne” the banquet, and with it the biennial session of the American Pomological Society, terminated. The banquet was well conducted, and was worthy of the hotel and the distinguished guests.

An Editor’s Thoughts on Pomologists.

CULTURE AND OCCUPATION.

The American Pomological Society held a three days’ session in this city last week. Representatives were present from thirty States of this union and from three British provinces. Any one who attended this meeting, even for a short time, could not fail to see that the persons present were, almost without exception, men and women of fine culture.

This was apparent from their dress, personal appearance, language in conversation, and the ability to make a good off-hand speech on almost any subject that was before the association for consideration and discussion.

They were persons of learning not only on subjects directly connected with their occupations, but on other subjects. Most of them were persons of good scientific as well as of good literary attainments. They were familiar with all the amenities that characterize the most refined society. Though mostly residents of the country, they took kindly to metropolitan ways, and were quite at home in a great city. When speaking in conversation or in discussion they showed a knowledge of recent publications in science and literature as well as a familiarity with current events. In short, they were persons of learning, culture, and refinement.

The meetings of local horticultural societies in this and other States, show that the members are generally persons of good culture and of enlarged general information. They are acquainted not only with the theory and practice of fruit-growing, but with the principles of botany, geology, as far as it pertains to their business, entomology, and climatology. They have also a good knowledge of business. They are men who have read a good deal and have traveled considerably. They are tolerably familiar with banking, transportation, and the laws that apply to business transactions. Their business has brought them in contact with a variety of persons, and they have profited thereby.

The meetings of dairymen’s associations never fail to bring together persons of superior intelligence. The introduction of co-operative dairying added no less to the intelligence than to the pockets of those engaged in it. It is necessary to read a good deal to learn the business, and to continue reading in order to keep up with the improvements that are constantly going on. The manufacturer of cheese and butter on an extensive scale necessarily comes in contact with first-class business men. It is for his interest to travel, to attend conventions, to study chemistry, and to read papers largely devoted to home and foreign commerce.

It must be acknowledged that the average general farmer is not the equal in refinement, culture, and education with the average fruit-raiser and dairyman. As all of them live in the country, and as all of them are engaged in different branches of agriculture, their means of improvement would seem to be equal. Horticulture either attracts superior men or else its pursuit exerts a superior

influence in the matter of culture. So, too, somewhat inferior men engage in general farming, or else the occupation in some way is not favorable to refinement and culture. We are inclined to think that the latter is the true explanation.

Let us look at some of the influences that are unfavorable to a farmer's progress in the matter of culture and refinement. He is in quite an isolated condition, especially if he lives on a large farm. His associates are, almost without exception, engaged in the same business he is employed in. As a consequence, conversation with them generally turns to farm matters, or neighborhood affairs. He travels very little because he thinks he cannot afford it. Quite likely the only papers he takes are those devoted almost exclusively to religious and agricultural matters. As far as furnishing news is concerned, he might as well read a spelling-book or a last year's almanac.

Of late years there has been an increasing disposition among farmers to shun the society of other people, and to build up organizations exclusively

among themselves. The Order of Patrons of Husbandry has doubtless done much good in bringing farmers and their families together, and causing them to have a good time. It would doubtlessly have accomplished much more good if it had allowed others than farmers to become members of the organization. Farmers do not want a Chinese wall built around them. They want, on the contrary, all barriers broken down that prevent the fullest exchange of thought, association, and hospitality.

The farmer will not be the equal of the members of many other callings in the matter of culture and general intelligence till he becomes a man of the world. To do this he must travel more, and form associations with people outside of his own profession. He must also read on other subjects than those that pertain to his own calling, his own party, or his own church. As a rule, the greatest culture, refinement, and intelligence are found in those persons who are brought in contact with people engaged in a great variety of pursuits.

—*Chicago Weekly Times.*

POMOLOGICAL SOCIETY ESSAYS.

Culture of Orchards.

By JOHN J. THOMAS, of Union Springs, N. Y.

The proper management of fruit trees depends greatly on the supply of food to the roots: and to understand the best mode of applying this food, it is necessary to know the extent, depth and character of the roots: otherwise, it is like attempting to feed an animal in the dark: the food may be all placed where it is inaccessible. Having given special attention to this subject for more than twenty years, and frequently presented its importance to the public, the writer naturally feels much interest in having it well understood by fruit culturists generally.

The extent to which trees throw out their roots in all directions is becoming better understood. It was formerly scarcely appreciated. The rule, that the roots will be found as far from the base of the trunk, as the entire height of the tree, after many examinations, has invariably been found within bounds. In many cases they extend to a much greater distance. Even young dwarf pears, the quince roots of which are commonly supposed to be quite short and confined in a dense mass of fibres near the base of the tree, I have easily traced to a distance from the tree equal to its height. Prof. Beal, of the Michigan Agricultural College, showed me last year an orchard on the college grounds, which had been fourteen years planted, the trees being about twelve or fourteen feet high. The roots were found on examination to be thickly matted beneath the whole surface, or had extended so as to meet and cross each other, and were traced within six feet of the next rows, which were thirty-three feet apart. In other words, these trees, not over fourteen feet high, had thrown out roots to a distance of twenty-seven feet. The soil was a medium loam, and there is no reason to believe that this extent of roots was an exceptional case. There is no question that the roots of apple trees generally extend to a distance greater than the height. A part of the orchard just referred to, had been plowed over the whole surface, after it had remained many years in grass. The result was a great increase in the vigor

of the trees. Another portion was plowed with the exception of grass circles ten feet in diameter, left at the base of the trunks. There was no apparent difference in the vigor of the trees where the whole surface was plowed, and where the ten feet circles were left in grass. This result is easily explained. The roots extending twenty-seven feet on each side formed a circle of fibres for each tree fifty-four feet in diameter, and this circle had an area more than twenty-four times as great as that of the ten feet circle of grass. The reason is therefore obvious why no apparent difference was observed in the thriftiness of the trees where all the surface was cultivated, and when the circles of grass remained around them.

Another portion of this orchard was left entirely in grass; and still another had ten feet circles cultivated around the base of the trunks. There was no perceptible difference in the appearance of the trees, the foliage in both cases being alike yellowish and unthrifty in appearance, and the shoots of feeble growth. The cultivated circles, ten feet in diameter, constituted but a twenty-fifth part of the area covered by the whole roots, as already explained.

From the experiments it is obvious that but little advantage can result from the common practice of spading circles about fruit trees which stand in grass—unless the circles are very large, and for the first year or two after transplanting, while the roots are comparatively short.

I tried an experiment to determine the distance at which peach trees receive nourishment through their roots. A row of trees was set a few feet distant from each other, and when they were nine or ten feet high, the whole ground was permitted to become covered with a dense growth of grass. The annual shoots were not over eight inches in length. At one end of the row the surface was covered with a quantity of manure. The tree standing nearest to it (about two feet distant) sent out shoots four feet long. The second tree, seven feet off, had shoots two and a half feet long. On the the third tree, fifteen feet distant, the shoots

were fourteen inches long; and on the fourth, twenty-three feet off, and too far for the roots to reach the manure, the shoots were only eight inches long. The striking fact was here presented, that the tree fifteen feet from the manure, although but ten feet high, received nourishment enough through a few roots on one side to double the growth. The circle of roots, therefore, belonging to this ten foot tree, must have been at least thirty feet in diameter.

These, as well as many other experiments which might be cited, prove the error of the common practice of applying manure to the roots in a circumscribed circle. Broadcast culture and broadcast manuring should be given to the whole surface of the orchard, unless to save labor small portions of grass are left at the foot of the trunk in horse cultivation.

There are other questions in the management of orchards which must be answered variously, according to the circumstances of the case. One of the questions refers to the *depth* to which cultivation should be given. Where the subsoil is hard and poor, and nearly all the fertility of the land lies within a few inches of the top, the treatment must be very different from that employed on a deep rich soil. On such a shallow soil, the trees are much more susceptible of the influence of surface culture or top-dressing with manure. The roots extending very near the surface, it becomes more important to cultivate shallow. It often happens that a top-dressing of manure on such land is the very best thing for the trees. And to allow a dense growth of grass without manure, may be the worst treatment for their growth and success.

I have just examined the roots of large trees in an apple orchard standing on land with a comparatively loose and fertile subsoil. The majority of the roots were two feet below the surface; some of them nearly an inch in diameter were found four feet below, and they appeared to run much deeper, probably seven or eight feet. In this orchard, after the trees were twenty years old, the plowing of one part and the grass sod in another made but little difference in the growth. The roots were far below the reach of the plow, and the roots of the grass on the surface drew but little nourishment from two feet below. Cultivating the surface, and top-dressing with manure, had comparatively little effect on the trees when old, although making a great and obvious difference while they were young and the roots nearer the surface.

There are many soils, however, where most of the roots are not a foot below the surface, particularly while the trees are young. For these, two modes of treatment are adopted by cultivators. One is to keep the top mellow and clear of grass and weeds by plowing and harrowing. The other is to allow the ground to become covered with a grass sod. Much discussion has arisen on the comparative merits of the two modes. An examination of the condition of the growing tree will point out the course to pursue. If, as often happens on the rich soils of the south and west, the trees have too much rankness and succulence, rendering them liable to injury from changes of the weather, it would obviously be important to seed the land to grass and thus check the growth. If the trees are feeble, indicated by short and stunted annual shoots, additional vigor must be imparted by cultivation or manuring, or both. The character of the soil and climate will vary the management in different localities and regions, and no rule can be laid down for constant and invariable adoption. Yet, throughout the Northern and Eastern States, and in many portions of the Middle States, very few orchards will possess sufficient vigor unless cultivation or top-dressing is given to the soil. As a general rule for guidance, in determining what treatment to adopt, the annual shoots may be examined; and if in young orchards they are less than two feet in length, or in bearing orchards much less than one foot in length, they should receive additional stimulus by manure or cultivation.

The question often occurs and is frequently discussed, which is the best, to manure a grass surface, or to give clean cultivation without manure. On very shallow soils, manure may be the most effective. But even then, a shallow and thorough cultivation may answer all the desired purpose. The addition of a moderate top-dressing to such a cultivated soil, will accomplish more than heavy manuring on a sod. The question will resolve itself into one of economy. Plowing once and harrowing five times subsequently will not usually cost more than five dollars per acre altogether. An equal effect produced by manure would require at least fifteen two-horse loads. At a dollar per load, and half as much more for drawing and spreading, these would amount to more than four times as much as keeping the ground clean by cultivation. In many instances the cost of manuring would be much greater; in a few possibly less.

In some cases where cultivation is difficult, manuring may be used to advantage; and where valuable

crops of several hundred dollars' worth of fruit per acre are obtained, as for example with the best pears, the annual cost of twenty or thirty dollars for manure would be a small portion of the net profit.

On soils of moderate fertility, the practice of allowing grass to grow with young or newly set fruit trees, is one of the most common causes of failure. All plants when crowded are checked in vigor. Weeds and grass lessen all garden crops. Indian corn thickly sown will not bear ears. For the same reason where trees and grass occupy the same ground, the evils of a crowded growth occur, and the trees cannot flourish so well as where they have the sole occupancy. The exception (partially) is where the roots of the trees, as they become old, run far below the grass in the deep, rich, and porous sub-soil.

I have usually found the shoots of young peach trees which stood in mellow, clean soil, or with well cultivated hoed crops, as corn, potatoes, or beans, to grow two and a half to three feet in a single year. When allowed to stand in grass, I have never seen the shoots a foot long while the trees were young, unless within reach of manure or cultivated ground through their long roots.

Quackery has been defined as the application of the same remedy to all diseases. It should never be adopted in the cultivation of fruit, but the treatment should vary with the condition of the soil and locality. The planter who succeeds well with his trees in grass, in land of great fertility, or with high manuring, should not prescribe grass for orchards in all other soils and places. The man who has a shallow soil, and who has injured his orchard by severely mutilating the roots with the plow, because they are all near the surface, should not object to the thorough plowing of deep soils. I have seen an orchard which was plowed early in the spring, after lying long in grass, and the roots so severely cut that at least one cartload per acre was picked up and drawn off after the operation. Yet, as this was done in spring before growing had begun, and as there were plenty of roots remaining deeper in the soil, a positive benefit was derived from the plowing, the cultivation overbalancing any injury by the mutilation of the roots, and greatly increasing the quantity as well as improving the quality of the crop. But if this deep and thorough plowing had been performed after the trees were in leaf, or if the soil had been so shallow as to throw most of the roots within six inches of the surface, the result would doubtless have been disastrous.

The Adaptation of the Soils and Climate of Michigan to the Production of the Finer Varieties of Fruits.

BY T. T. LYON, *South Haven, Michigan.*

A very cursory examination of the map of our country will be likely to impress upon the mind of a discriminating and critical observer, the idea that Michigan, associated as it is with so many peculiarities of position, must, as a necessary consequence, derive therefrom very decided peculiarities of climate; and when we come to understand that, besides its peculiar geographical associations, it possesses also a geological system almost if not quite as distinct and peculiar: we will doubtless be prepared to entertain the idea that soil, as well as climate, has to do with the existence of some of the characteristics which, in so decided a manner, distinguish it from the States lying south and west of it.

In speaking of Michigan as a fruit growing State, we are reminded of the fact, that beyond the indigenous whortleberries, raspberries and blackberries that annually reach our markets from the upper peninsula and the northern and newer portions of the lower one, little is really known of their capacity for fruit culture; and probably little is to be expected from their development in this respect, except, possibly, in the production of the smaller fruits, or in localities in some respects peculiarly favored. In these remarks, therefore, we wish to be understood as having reference, primarily, to the settled and improved portions of the lower peninsula.

Perhaps, to the passing traveler, Michigan has no more distinguishing peculiarity than its mantle of dense forest, both evergreen and deciduous, which, although doubtless owing their existence mainly to her climate, may be supposed to borrow vigor and persistency from soils adapted to their needs. The constituents of these soils often vary very greatly, even within a narrow compass, a variation which not unfrequently becomes manifest by marked change in the characteristics of the timber growth.

Possessing but a small portion of the rich, deep, prairie soil so prevalent further west, and that are confined almost entirely to the south-westerly portion of the State, its soils are generally less rich in mere carbonaceous matter, and may hence be supposed to contain a higher proportion of the mineral or earthy salts generally considered best qualified to minister to the mysteries of fructification as contradistinguished from mere wood growth. Indeed, some of these soils, which are so light and porous that

even upon the steepest inclines, water from the rain-falls never gutters the surface, are, in their wild state, covered with dense forests of hard or sugar maple and basswood trees of the largest size, and when subdued are found to produce heavy growths of herd's grass: while in defiance of all our preconceived ideas respecting the preferences of the plum, the pear and the apple for heavy soils, these show a vigor of growth, a richness of foliage and an abundant fruitfulness, which leave little to be desired in this respect. It is by no means our purpose in these remarks to claim for the soils of Michigan a superiority over those of adjacent States, but rather to express the idea that they, for the most part, possess qualities adequate to the requirements of fruit-growing in this climate, and especially that they generally contain in adequate proportion the elements necessary for the development of fruit-growth as distinguished from wood-growth.

If, however, Michigan has any superiority as a fruit growing State, it is believed to be largely, if not indeed primarily, due to the favorable character of its climate. It is a well known fact that large bodies of water, especially if at the same time they are very deep, yield but slowly to the varying temperatures of the seasons, holding in store in their depths a portion of the excessive warmth of summer, till wrung from them by the angry, biting blasts of winter: and by a reverse process, to some extent, carrying a portion of the chill of winter over into the spring.

In southern Michigan the prevailing winds are westerly, generally reaching us after having been subjected to the equalizing influences above described, in passing over the waters of the Lake, and affording a partial exemption from the extremes of temperature that often operate so disastrously upon the cultural and especially upon the pomological interests of some of the more western States. In speaking of this subject, when calling attention to his climatological charts of the State, Prof. Winchell, the State geologist of Michigan, remarks:

"The sinuosities of the several (isothermal) lines will demonstrate at a glance the peculiar character of the climate of Michigan, and the fact that, both in summer and winter, it is better adapted to the interests of agriculture and horticulture, and probably also to the comfort and health of its citizens, than the climate of any other north-western State. The marked peculiarity of the climate of Michigan, in these respects, is attributable to the influence of the great lakes, by which the State is nearly surrounded. It has long been known that considerable bodies of water exert a local influence in modifying

climate, and especially in averting frosts; but it has never been suspected that Lake Michigan, for instance, impresses upon the climatic character of a broad region an influence that is truly comparable with that exerted by the great oceans."

An examination of the *isotherms of average summer temperature* will develop the fact that the line of 69 degrees, which crosses Lake Michigan in the latitude of Chicago (about 42 degrees), and which, only seven degrees of longitude further west, is found in the valley of the Red River of the North, at latitude 48 degrees to 50 degrees, at the east of the lake tends northward to latitude 44½ degrees, or a little to the south of Traverse City: while passing eastward it is carried so far to the south by the combined influences of Lakes Huron and Erie, that it crosses the eastern boundary of Michigan very nearly in the latitude of Detroit. Again the summer isotherm of 65 degrees, which, westerly of the lakes, occurs at Duluth, in latitude 47 degrees, is also that of Traverse City, on the east of Lake Michigan, in latitude 45 degrees, while it crosses the lake in the latitude of Milwaukee (43 degrees).

If now we turn our attention to the lines of *equal winter temperature*, we will discover a wonderfully contrasted position of the indicating lines. The winter isotherm of 24 degrees will be found slightly south of Omaha, in latitude 40 degrees, or a little above, and passes just westward of Chicago (latitude 42 degrees), thence it passes almost directly north, reaching the easterly shore of the lake but a few miles southward of Traverse City, in latitude 44½ degrees, tending southward, in the central part of the State below the parallel of 43 degrees: thence again northward, crossing Lake Huron in the latitude of Alpena (45 degrees), while the isotherm of 23 degrees, passing only a few miles north of Omaha, is found easterly and southerly of Milwaukee, and makes the Traverse region considerably northward of Traverse City, passing just eastward of Saginaw and Bay City, and crossing Lake Huron in latitude 45 degrees. On the other hand, the winter isotherm of 26 degrees which occurs south of Omaha, in latitude 40 degrees, or thereabouts, strikes the lake shore nearly a degree of longitude eastward of Chicago, and makes the eastern shore, and at the same time its limit northward, at or near Muskegon, opposite Milwaukee, whose isotherm, as before stated, is 23 degrees. From this point the line of 26 degrees tends southward to near the north line of Indiana and Ohio, and thence again northward near the east line of the State, crossing Lake Huron considerably above latitude 44 degrees.

From the data already given we deduce the conclusion that Michigan (and in a very special sense the easterly shore of Lake Michigan), enjoys a climate compounded of the average temperature of the summer of the Red River country of the North (latitude 48 degrees), and the winter of southern Illinois and Indiana. It is, however, to a great extent, true, that the adaptation of a region to the culture of fruits is fully as dependent upon the *limit* of such temperature, especially downward, as upon the average of the season. With the more tender fruits, such as the apricot, nectarine, peach, and even the Mazzard class of cherries, this is eminently true. If, now, we turn our attention to the isotherms representing this extreme minimum (the figures indicating the range below zero), we discover that the line of 27 degrees representing northern Missouri and southern Nebraska, represents also the minimum of the westerly and northerly shores of Lake Michigan and Green Bay, from Milwaukee to Mackinaw; while the entire east shore of the lake, from St. Joseph to beyond Little Traverse Bay (latitude $45\frac{1}{2}$ degrees), is covered by the minimum of 16 degrees—the same line extending along the east shore of the State via Alpena, Tawas, Detroit, Monroe and Toledo; and thence north-easterly, leaving Ohio to the south, if we except a narrow strip of country in the vicinity of Toledo and Sandusky. The real import of the facts, expressed by this line will be better appreciated when we consider that the minimum of 24 degrees, which includes the central portions of the State of Michigan as far north as latitude 45 degrees, expresses also the minimum at St. Louis, Missouri, in latitude a little north of 38 degrees.

These minima must probably be subjected to some modification if we include the experience of the winter of 1874-5, during which season the minimum of the thermometer was, even in the "Fruit Belt" (as the region along the easterly shore of Lake Michigan is more commonly called), as much as two degrees lower than had previously occurred during the occupancy of the country. This seems to have resulted from the unprecedented circumstance that the paroxysm of cold occurred during the night following the prevalence of a wind from the north-east, thus precluding all benefit from the ameliorating influence of the open waters of Lake Michigan, lying at the west. The result of this unusual depression of the thermometer seems to have been a very serious amount of injury to the peach trees in the peach growing regions, with a total loss of the crop of fruit, except in specially favorable locations, in which partial crops, and in very rare

cases even full crops, seem to have escaped; and it would seem to be a fact strongly indicative of the great potency as well as the extent of this lake influence, that at least one of these frost-proof orchards of the peach will be found in the immediate vicinity of Traverse City, within a little over 20 degrees (of latitude) of the Arctic Circle. With the exception of peaches very little injury seems to have occurred in the fruit belt; although away from the vicinity of the lake, the loss to the crop of fruit of all kinds is believed to be quite general.

That the result of these influences is more favorable upon the eastern shore of Lake Michigan than upon the western, must be attributed to the fact that the prevailing winds (and especially those with which frost or severe cold are to be anticipated), are westerly, reaching the easterly shore only after having traversed at least eighty miles of very deep, open water, to which during the warm season they will have surrendered a very considerable increment of heat, to be retained until it shall be wrestled for and re-absorbed by the colder gales of late autumn and winter, thus quenching their excess of cold by the transfer to them of a portion of the surplus heat of the warm season. The obvious and well-known results of this transfer of warmth, are a comparatively slow increase of temperature with the opening of spring, retarding growth and blooming till danger from spring frosts is mainly past; and also delaying the occurrence of frost in autumn, adding at the end of the growing and ripening season more than sufficient time to compensate for retardation in spring. It may be not improper to add that a further result of this condition of affairs recognized by medical men, and also by even temporary residents near these lakes is, that this equalizing of temperatures renders the climate decidedly a favorable one, especially in the warm season, and to persons of impaired health or vitality.

That the ameliorating influence of Lake Michigan especially, should be potent enough to suffice for the growth, fructification and safe hibernation of such semi-tropical trees as the apricot, nectarine and peach, in as high a latitude as that of Grand Traverse, may well be thought surprising. Of the fact, however, there can be no doubt; and among the apparent reasons for such fact, we may notice that Grand Traverse Bay is very deep, and that it seldom if ever freezes in winter before the month of February, while the deepest waters of Lake Michigan, which are understood to be at no great distance from the mouth of the bay, remain unfrozen during the entire winter.

It is also a fact well-known to nautical men, that a current sets northward along the easterly shore of Lake Michigan, possibly occasioned by the increased influence of the prevalent south-westerly winds upon the waters nearest that shore, or perhaps by other and unexplained causes: and also that there is a reverse current along the westerly shore. It will, therefore, be readily understood that there must be a slow but constant transfer of the warmer waters of the south toward the northerly extremity of the lake, and vice-versa: much in the same manner as we see, on a far grander scale, the tepid waters of the Gulf of Mexico transmitted by the Gulf Stream to soften the climate of north-western Europe.

In some of the more northerly portions of the State, even the severities of winter are, in some respects, found to minister to the success of agricultural and horticultural operations. In the regions alluded to, the snow usually covers the ground before the occurrence of freezing weather, acquiring a very considerable depth, such that the soil remains unfrozen throughout the winter: and even potatoes are left ungathered with entire safety, while apples often remain upon the ground unfrozen; and the depth of snow is such that grape vines and small fruit plants of all kinds are buried out of harms way. In spring, vegetation, from the absence of frost in the soil, frequently pushes through the snow before it disappears, thus endeavoring to make amends, to some extent, for the shortness of the growing season by treading upon the heels of winter.

The region about Grand Traverse Bay enjoys a very flattering prominence as a romantic and health-giving summer resort; a prominence very largely, if not even primarily, due to its desirableness as a fruit-growing region, to which was doubtless due its early settlement by an energetic and thrifty population. When we consider the short period for the development of its capacity for this purpose, and especially its high latitude, the distant or casual observer may well wonder how it could, within so limited a period, have acquired so flattering a reputation in this respect. So far as we are aware, one of the first, if not *the* first public reference to its capacities in this respect will be found in the transactions of this Society for 1860, in a report by the writer, as chairman of the Fruit Committee for Michigan, which report appeared more at length in the volume of the Rural New-Yorker for the ensuing year.

This region possesses a large proportion of the finest lands for this purpose, and with a climate mellowed

by the softening influences of the waters of the bay and lake, its capacities for fruit culture compare favorably with average localities 500 miles farther south. The most tender of the small fruits prove to be quite at home here, even Brinckle's Orange (the type of tender raspberries) coming out from beneath the sheltering snows, even after such trying winters as those of 1873 and 1875, uninjured, and producing bountifully during the succeeding summers. Grapes, also, are wonderfully vigorous and prolific here, the only apparent limit to their success being their ability to mature their fruit within the season. Delaware seems perfectly at home, often showing a vigor of growth and productiveness fully equal to that of Concord, in the most favorable localities. Iona is equally at home, so far as thrift and productiveness are concerned, with a doubt, however, as to its ability to fully mature its fruit in all seasons. These remarks are applied to the Grand Traverse region especially, because of possible doubts which might arise from the fact of its high latitude, although they apply in some cases, even with added force, to the entire fruit belt with the exception, however, that the "snow shelter" becomes less and less effective, and the "lake protection" is more certain and extends over a broader territory as we go southward.

In the severe winters of the last three years, Downing's Everbearing Mulberry, standing unprotected well above the snow, came through generally, at Traverse and at other more southerly points, without loss of wood, producing bountiful crops the following seasons. Peach trees were, in some localities, seriously injured, while in others they have come safely through, ripening in many cases partial crops and in some instances even full crops of fruit the following seasons, specimens of which, from as far north as Grand Traverse Bay, will be found upon the tables of the Society.

The cherry, whether Morello, Duke or Mazzard, is found to be quite at home in our soils and climate, except that in some inland and unsheltered localities, the Mazzards and even in some cases the Dukes, when high-branched or rapidly grown in cultivated ground, are found to suffer from the "bark-burst" in winter, followed by the exudation of gum and final death. Along the "lake shore" we find this malady only in a milder and less fatal form.

Of that growingly popular rival of the cherry, the strawberry, we hardly need speak, but will say that it is eminently at home with us, and is rapidly coming, if indeed it has not already come, to be a staple

fruit, not for market only, but for home consumption as well.

The "Little Turk" has long since nearly driven the plum from the family orchards and gardens of our State; but some of the more clear-sighted of our market growers have discovered this to be a promising field for operations, under thorough culture, combined with vigilant and intelligent warfare against the common enemy, and as a result, many promising and some already productive plantations are in existence, especially in the newer regions of the State where the curculio is not yet found in full force.

The pear is found to be nearly or quite as hardy and even more regularly productive than the apple, and is being extensively planted. Its chief enemy here as elsewhere is the blight, to the attacks of which our State offers no exception, although the "old pear trees" of eastern Michigan, for some unexplained reason, seem never to have suffered from this malady, remaining healthy, vigorous and productive, even when growing in the midst of the blighted and dying younglings of a more modern generation.

We come lastly to the apple, which with us, as indeed everywhere at the north, must be conceded to be the staple fruit. The varieties so common and so generally popular at the east, as a rule are also the favorites in Michigan, as owing to the salutary influence of her lacustrine position heretofore described, her planters are not under the necessity which obtains farther west and south of abandoning their former favorites of the east, and resorting to "iron-clads" as a safe guard against the severe exactions of an arcto-torrid climate, in so doing to a greater or less extent subordinating quality to hardiness. In connection with these remarks we may, with assurance of the fullest endorsement by the more experienced culturists of our State, repeat our recommendation to this Society in the State Fruit Committees report of 1860, placing that once popular but now diseased New England apple, the Red Canada, first and foremost among the profitable market apples for cultivation in Michigan. While the apple may be said to be eminently successful throughout the State, there are some particulars in which the fruit belt may be said to enjoy important advantages even in the growing of this fruit, a claim receiving important confirmation from the circumstance that in so unfortunate a year as the present, while the crop of this fruit is generally a comparative failure, many localities, at least along the shores of our lakes, are carrying full crops.

From some unexplained peculiarity of soil or climate or both, the lake shore apples, and in a very noticeable degree those of the Grand Traverse region, acquire a richness of coloring quite in excess of that usually seen upon specimens from other portions of the State, even in many cases rivaling that acquired by some varieties of southern origin and growth.

Besides the higher coloring spoken of, the effect of the lake influence in the delay of growth in spring, together with the more moderate temperature during summer, is to carry the season of maturity farther into the autumn and quite beyond the occurrence of the "warm spells" which so frequently in some localities hasten the ripening process in advance of the season. The result of such retarded ripening is to add correspondingly to its keeping capacity in the spring. As far north as Grand Traverse, this tendency is found to be so greatly increased, that the ripening of Hale's Early peach is carried well into September; Early Harvest, Red Astrachan, Summer Rose, and apples of similar season, continue without special care well into October; and Maiden's Blush, considered here as a late summer apple, is not unfrequently carried through the winter in fine condition. The effect of this condition of affairs upon winter fruits proper, is that they can be put upon the market from this point in the finest possible condition, very late in the season, even after most good sorts grown elsewhere are quite out of season.

The absence of severe frosts till nearly or quite snowfall, also enables the grower to leave the crop of grapes upon the vines till so late a period that they can be deposited directly in cellars for the winter, and while yet perfectly fresh, the temperature will be readily run down to near the freezing point and maintained there during the entire winter, bringing them out almost or quite unchanged, as late as March or April.

The influence of this combination of favorable circumstances at Grand Traverse is such that the locality has come to be recognized by those most familiar with the entire subject, as in a very special sense the home of profitable winter apple culture.

The Confused Nomenclature of the Apple.

By WM. M. HOWSLEY, Leavenworth, Kansas.

Mr. President: At your request that we should prepare an essay, to be presented at the national meeting, to be held in Chicago, September 8th to 10th, upon some branch of pomology, we herewith furnish one upon the Confused Nomenclature of the Apple.

We are fully aware of the difficulties surrounding this subject, and feel our inability to do that ample justice which its merits demand. But as no one to our knowledge has made this subject a specialty, and as it is one which now presses heavily upon the public mind for earnest attention, we have thought that if we could do no more than to show its great necessity, we would do a public service.

Next to that of the want of some specific rule by which to determine the identity of varieties when exhibited at our fruit shows for this purpose, there is, in our judgment, no other subject connected with scientific pomology surrounded with so many vexatious difficulties. These difficulties are to some extent perpetuated by the want of attention to this particular point at those large displays of fruits made at our national meetings, as at Boston, in 1873, where there were some hundreds of bushels placed on exhibition, and in many instances, bushels of the same variety, duplicated from six to a dozen times. In this instance it would have taken not only the whole time of the session for a half dozen of the most expert pomologists to have corrected the nomenclature, and yet not to exceed an hour was devoted to this branch of the subject. Could six men have been found who would have undertaken to correct the nomenclature on that occasion, there was an ample field before them for profitable labor in this direction. But who, that attends those national meetings, is willing to devote so much time and laborious effort to this subject? Very few, if any. Hence these mammoth shows become in the general detrimental rather than advancing to the great interests of a correct nomenclature.

That the present nomenclature of the apple is woefully defective and confused we need but to turn our attention to the various books on fruits, and to the catalogues of nurserymen now before the American public, to be convinced.

To correct this great evil, the labors of no one man are sufficient to the task. The efforts made in this direction by our venerable co-laborer, Charles Downing, have been truly valuable, and yet the subject is but in its infancy. We shall in our references to works upon fruit-growing rely mainly upon Mr. Downing's large work of 1870. We do this because no other author has seemed to have the courage to grapple with this subject to the extent that he has done. While we expect to show from this work how much needs yet to be done, we are free to say that the American pomological public are under more obligations to him upon this subject than to any other man living or dead. The labor which

he has bestowed upon this subject shows how much yet remains to be done.

As an insight into what we have to do in the direction of a correct nomenclature, we herewith present a few facts in the way of a multitude of names for the same apple:

1. The <i>Ben Davis</i> has.....	17 synonyms.
2. " <i>Buckingham</i> has.....	24 "
3. " <i>Dyer, or Pomme Royal,</i> has..	10 "
4. " <i>Early Harvest</i> has.....	11 "
5. " <i>Ramsdell's Sweet</i> has.....	7 "
6. " <i>Fallowater</i> has.....	21 "
7. " <i>Fall Orange</i> has.....	12 "
8. " <i>Fall Pippin</i> has.....	10 "
9. " <i>Fall Queen</i> has ..	6 "
10. " <i>Fourth of July</i> has.....	5 "
11. " <i>Green Cheese</i> has.....	10 "
12. " <i>Green Newton Pippin</i> has	7 "
13. " <i>Large Sweet Bough</i> has....	6 "
14. " <i>Lowell</i> has.....	8 "
15. " <i>McAfee's Nonesuch</i>	23 "
16. " <i>Mangum</i> has.....	12 "
17. " <i>Newtown Spitzenberg</i> has...	10 "
18. " <i>Nickajack</i> has.....	36 "
19. " <i>Pittsburg Pippin</i> has.....	9 "
20. " <i>Primate</i> has.....	12 "
21. " <i>Rambo</i> has.....	10 "
22. " <i>Rauel's Genet</i> has.....	16 "
23. " <i>Red Winter Learmain</i> has..	14 "
24. " <i>Roxbury Russet</i> has.....	8 "
25. " <i>Summer Pippin</i> has.....	11 "
26. " <i>Twenty-Ounce</i> has.....	9 "
27. " <i>Vanderere</i> has.....	13 "
28. " <i>Yellow Bellflower</i> has.....	6 "
29. " <i>Ortley</i> has.....	27 "

29 varieties having..... 370 names.

Averaging 13 to each.

Thus it will be seen at once, when but 29 varieties are encumbered with 370 different names, how difficult it must be to clean away all the spurious names and to substitute instead the original, the true and the proper one.

We also herewith present another confused and embarrassing feature of a correct nomenclature, and this is found in the almost countless number of times the word *Pippin* is used as being descriptive of distinct varieties. We find this *meaningless* word, when applied to the apple, used no less than 124 times in the work already referred to, as descriptive and distinctive of different varieties, and in 83 instances used as a synonym of other varieties; altogether it is used 207 times as a distinctive name. Well might the venerable president at the

meeting at Philadelphia, in 1869, express the hope that the word *Pippin* might be dropped from our catalogue.

The words, *Bellflower*, *Pearmain*, *Romanite* and *Spitzenberg*, with some others of like import, are calculated to and do frequently mislead and confuse persons seeking to grow fruit. The term *Bellflower*, when applied to the apple, one would be apt to suppose referred to either the shape of the fruit or to the bloom. But neither of these is correct, since almost all of them are either round in shape, or conical with the pointed end down, just the reverse of the bell. It cannot properly apply to the bloom, as almost all fruit blossoms of the apple are more like a basin than a bell; hence this term is likely to confuse. When asked for the reason why you call it bellflower, you are unable to give any other reason than that others have called it so. We apprehend, however, the origin of this name is from the beautiful flowers of the tree bearing the fruit; hence it should be spelled after the manner of the French, *Bellefleur*, which means beautiful flower. The *Yellow Bellflower*, which is presumed to be the type of all the apples bearing this name, when in full bloom, is a sight most beautiful to look upon. Its blossoms are very large and white, presenting an object of special attraction, and yet in most instances a large proportion of these flowers are abortive. The other *Bellflowers* are so named more from their resemblance in shape to the *Yellow Bellflower* than to their bloom—the very point where the name originated; hence the name is embarrassing and confusing. *Pearmain* as used to designate a particular variety of the apple is not satisfactory and tends to confuse the nomenclature. *Pearmain* must mean either pear-shaped or pear-flavored. This point has never, to our knowledge, been settled. Most apples bearing this name are either round or conical, with the large end at the stem, while most pears have the small end at the stem. The terms, *Romanite* and *Spitzenberg* are equally bewildering as a distinctive name when applied to the apple. True, many of these terms, perhaps all of them, are preceded by an adjective, thus converting these terms into family or classified names. But even in this view of the case they fail as signally as when used to designate special varieties.

We have heretofore contended that a correct nomenclature should proceed upon the principle of making the name expressive of something belonging to the specimen: either the place of its origin or the originator, the time of ripening, the size, shape, color or quality of the fruit. Some two or three of

these should be grouped together in such way as to make the name express as much of these characteristics as can conveniently be thrown together without making the name cumbersome.

While all of the foregoing are calculated to and do produce confusion and bewilderment in our nomenclature, there is *one* other phase of this subject that is more confusing than any other, and that is, the using the original name and synonym interchangeably; sometimes using the original for the synonym, and at other times using the synonym for the true name.

A few examples of this incautious use of these terms will show how very embarrassing and confusing this practice is to even many who are well posted, and much more so to those who are novices in fruit culture.

The first example of this kind we will introduce is that applied to the *Early Harvest*. Here the *Tart Bough* is given as a synonym, or as the *same apple* under another name. Then the *Tart Bough* should not be described as a distinct variety; and yet it is so described. The *Tart Bough* is also given as a synonym of *Summer Pippin*. If then the *Tart Bough* is the same as *Early Harvest* and also as *Summer Pippin*, then the *Early Harvest*, *Tart Bough* and *Summer Pippin* are but the same apple, the *Early Harvest*; yet we have them described as three distinct apples. We have the *Early Harvest* and the *Summer Pippin*, and they are quite distinct in size and color and time of ripening. How confusing this to one who is seeking to procure certain varieties to plant an orchard.

2. The *Buckingham* is a leading apple in the South and West, but is sought after and procured under a multiplicity of names. Having been taken from Buckingham county, in Virginia, to North Carolina, and there having received the name of *Buckingham*, from the county from which it was taken, it has become through the South and West pretty well established by this name; yet *Queen* is the original name by which it was known in Virginia during the latter part of the last century. In the extreme South it is known by the name of *Equinettee* as the original name, and *Buckingham* and *Kentucky Queen* as synonyms, together with various other local names. *Fall Queen* is one of the synonyms by which it was known in Kentucky for many years, and if *Fall Queen* and *Buckingham* are the same, as is admitted by the books, then the *Fall Queen* cannot be properly used as a synonym, or as the original for any other variety; and yet there is an apple described as originating in or near St.

Louis some years since, bearing the name of *Fall Queen*. It has for its synonyms, *Gross Pommier*, *Haas*, *Hoss* and *Horse*. Now if the *Fall Queen* is the same as *Buckingham*, then *Gross Pommier*, *Haas*, *Hoss* and *Horse* are the same. But the *Fall Queen* or *Buckingham* is known to have originated in Virginia, and the *Fall Queen*, as described in Downing's Selected Fruits, is known to have originated in St. Louis county, Mo. If these two *Fall Queens* could possibly be the same apple, then the *Gross Pommier*, the *Haas*, the *Hoss*, the *Horse*, and the *Buckingham* would all be the same. The *Fall Queen* truly is a large red apple, ripening in November and December, while the *Horse* is a large yellow apple, ripening in August—as different from the *Queen* as two apples can well be. Any one ordering the *Horse* apple supposing he would get the *Fall Queen* would be quite disappointed.

This also goes to show how important it is not to use original names and synonyms interchangeably.

3. The *Golden Sweet*.—This is given as the original name of a fine summer sweet apple, ripening in the West in July; *Orange Sweet* is given as the synonym, and yet the one ripens in July and the other in September on the same ground; *Northern Sweet* is given as an original name and *Golden Sweet* as a synonym; *Munson Sweet* is given as an original name and *Orange Sweet* as a synonym. Hence *Golden Sweet*, *Orange Sweet*, *Munson Sweet*, and *Northern Sweet*, must be one and the same apple, if the *synonym* and the *original* are the *same*. There would then be the very same apple ripening the one in July, one in September, one in September and October, and the other from October to February. By their synonyms all are made to be the same apple, while they are described as four separate and distinct varieties. This is enough to confuse the most watchful of us all.

4. The *Ortley*.—This fine old apple has for some of its synonyms, the *White Pippin*, *Greasy Pippin*, *Warren Pippin* and *Vandyke*. Now if these are really synonyms, they are each nothing more or less than the *Ortley* itself under different names. But each of these synonyms, excepting the *Greasy Pippin*, is described as an original and distinct variety. The *Greasy Pippin* being a synonym of *Lowell* makes *Lowell* and *Ortley* the same. They are, however, quite distinct, the one ripening on the same ground in September, the other keeping all winter; the one having a close, the other an open core. How embarrassing are these things. Whenever we shall have left off describing synonyms as original names, we will have made a long stride toward having a

much purer nomenclature than we now have. We will give but one other case of this confounding of original names and using them interchangeably with synonyms.

5. The *Primate*.—The *Tart Bough* was given as a synonym of *Early Harvest* and is also given as a synonym of *Primate*, a fruit so distinct in tree and fruit as to cause surprise at being called the same. The *Powers* is also given as a synonym of *Primate*; the one is supposed to have originated in New Jersey, the other in Ohio; the one an old variety, while the other is comparatively new. The *Primate* ripens in August, the *Powers* in October. Here then we have the *Early Harvest* ripening in July, the *Primate* ripening in August and the *Powers* ripening in October and November, described as one and the same apple and also as distinct varieties. This is making confusion doubly confounded. We think no one can but see the great impropriety of thus confounding the use of originals and synonyms.

We will now call attention to a few names of apples which really mean anything or nothing, as you choose to make them. Such, for instance, as *Early Ripe*. There are hundreds of apples that will answer this description; hence it is no guide to the recognizing of any one in distinction from another. *Fourth of July* is another one of those meaningless names. The fourth of July comes at the same time all over the United States, whether the apple is ripe or not, as it surely will not be in Maine, and as it will not be in Florida, because in the latter place it will have been gone for some weeks. Hence both of these apples should have a prefix or an affix to make the name intelligible.

There is another phase of this evil in nomenclature which we wish to present, and that is, that some of the State and local societies assume the right to give new names to old varieties whose names, to them, are not known. We have not space here to notice more than a few of such cases. The first is that of our own State Society in calling a fine winter apple *The Kansas Keeper*, when it was known to be some old variety, but the kind not recognized. This apple was obtained from the Ham Bro's nursery, and of course were grafted trees, consequently could not have originated in Kansas, in 1855.

The next case of this injudicious practice, to which I will now call your attention, is that of the Eastern Iowa Society. The above society has named an apple the *Iowa Blush*, the trees of which are known to have been obtained from Dayton, Ohio, more than twenty years ago, under the name of

Sweet Bellflower. While it is evident that the trees did not produce fruit true to name, it is equally true, that the trees did not *originate* in Iowa. The name *Iowa Blush*, leads to the declaration, that the trees were raised from seed sown in Iowa. This is shown to be delusive. This *Iowa Blush* will no doubt turn out to be some known variety about Dayton, which the nurserymen there would readily recognise under some other name, could they be favored with specimens of the fruit. We know how well posted and cautious our friends in Iowa are generally, yet we cannot but look upon such a course as being a serious drawback upon the progress of a uniform nomenclature.

The next case of this kind we find in Virginia, where the celebrated *Newtown Pippin* is called *Albemarle Pippin*.

While we could multiply the number of cases of this incautious use of originals and synonyms to much greater length, if necessary, and of new naming old varieties, yet it is deemed best now to turn our attention to pointing out what we believe would be a remedy, to a very considerable extent, for existing evils, and would go far towards preventing the recurrence of those evils for the future.

Let the national society appoint a committee of any suitable number, whose duty it shall be to revise and fix upon the proper nomenclature of the leading apples now before the American people, and report their findings to the next session of said society for its adoption or amendment. When this is done, let the society cause a circular to be issued and sent to all the State societies, *requesting* them to conform their several catalogues to the national in regard to its nomenclature: requesting also, that the State societies make the same request of the county and local societies to do the same, and for these last to urge upon the nurserymen in said counties to make the same conformity, and, we think, the work will be done. We cannot conceive that any State, county, or local society or nurseryman would refuse to acquiesce in and willingly adopt all the necessary means to carry such a plan into successful operation. This system once fairly inaugurated will, we think, have a most desirable result, which will be to have a uniform catalogue of original names, with the proper synonyms thereto attached. Thus any person desiring or ordering a certain variety from his nurseryman may rely upon, if honestly dealt by, getting the kind he desires. Whenever each nurseryman shall conform his catalogue to the national catalogue having the original names at the top of his description in capitals, with the proper synonyms

in italics, immediately below the proper name, there can be no difficulty in knowing at a glance whether or not he has the variety called for. On this account nurseries will be patronized to a much greater extent than if their varieties were veiled under suspicion of inaccuracy. It will inspire confidence in the fruit-growing public, so that they will plant more freely, and with this confidence bring largely increased patronage to the nurserymen. Under an arrangement of this sort, fruit-growing will become a general business, and one of fine profits, in those portions of country adapted to fruit culture, in consequence, mainly, of a universal confidence growing out of this general intelligence produced by a uniform nomenclature. The nurseryman who would refuse to lend his aid in bringing about this uniformity of nomenclature would disclose to the world a greater love for self-interest than for science or for the public good.

Allow us now, in conclusion, to offer the following resolutions:

1. *Resolved*, That the chair appoint a committee of thirteen, consisting of the best posted pomologists in the different parts of the United States, whose duty it shall be to revise, correct and establish the nomenclature of the leading varieties of apples now before the American public, and report their findings to the next session of this Society for adoption or correction.

2. *Resolved*, That the President and Secretary be two of the said thirteen, and that the committee have a preliminary meeting during the present session, and agree upon a programme for future action, looking to the accomplishment of the objects contained in the first resolution.

Fruits and Fruit Culture in Nova Scotia.

BY C. C. HAMILTON, M. D., of *Corunallis, Nova Scotia*.

The early history of the cultivation of the apple and other fruits in the Province of Nova Scotia, is enveloped in much obscurity.

Until within a comparatively short period, no organization of a horticultural nature existed, and consequently no record was kept of the efforts of individuals or societies, in the propagation and dissemination of the various fruits now and heretofore cultivated among us.

As early as the middle of the last century, the Acadian French, who then peopled the valley of Kings and Annapolis Counties, cultivated the apple and the pear. On the occupation of these lands by emigrants from Connecticut in the year 1760, apple

and pear trees were found, some of which still exist and bear fruit. The new comers soon began to plant apple trees, and now numerous orchards of the olden times are still in existence, some of which have been grafted to the apples now most popular and useful, while many still remain as "*cider orchards*," disfiguring the locality with their unsightly growth and defective cultivation, and of little profit to their owners or benefit to the community.

The late Honorable Charles R. Prescott, of Starr's Point, Cornwallis, a gentleman of refined taste and a lover of the beautiful in art and nature, removed from Halifax after a successful business career as a merchant, and commenced the cultivation of the apple, pear, plum, cherry, peach and grape, with smaller fruits and flowers, in a beautiful location at Starr's Point, and for over forty years was not only a successful cultivator of all these fruits, but his tastefully laid out and well-kept place, "*Acacia Grove*," was the resort of his friends, and of strangers from all parts of the country, and from abroad. It is to be regretted that this once lovely spot is now cultivated only as a farm, the ornamental having given place to the strictly useful, and the buildings and orchards alone remaining.

The late Benjamin Woodworth, a gentleman residing in the immediate vicinity of Starr's Point, was also a very successful cultivator of the apple, pear and plum, from whose nursery many of our best orchards in Cornwallis were stocked.

No one in particular is known to have taken the lead in fruit culture in the earlier years in Annapolis County, where there are numerous orchards, consisting largely of the *Nonpareil Russet*, *Greenings*, and other old standard varieties. Suffice it to say that in the extensive valleys of Cornwallis and Annapolis, the former, styled the "*Garden of Nova Scotia*," orchards now exist by the thousand, and the demand for fruit-trees continues unabated. The orchards planted within the last quarter of a century are more extensive than formerly, and generally consist of the choicest fruit, well cultivated and in good bearing.

Nova Scotia proper is a peninsula, attached on its north-west extremity to the Province of New Brunswick, and almost surrounded by the Atlantic Ocean and the Bay of Fundy. On the north the Straits of Northumberland separate it from Prince Edward's Island; north-west the Bay of Fundy lies between it and the mainland, and on the north-east the Strait of Canseau, about a mile wide separates it from the Island of Cape Breton, which politically,

forms part of the Province of Nova Scotia. Nova Scotia, including Cape Breton, extends from $43\frac{1}{2}$ to 47 degrees in north latitude, and from 60 to 66 degrees west longitude, and is about 350 miles long from east to west and about 80 broad.

In the Bay of Fundy the tides have a rise and fall of 70 feet at "*Spring tides*," and pass through the "*Gut*," at the contraction of the bay near Parrsborough, at the rate of nine miles an hour; and this extraordinary ebb and flow of tide undoubtedly has a very important influence and effect upon the climate.

The valley of Cornwallis and Annapolis, lies on the south of the North Mountain range, composed of trap rocks, resting upon sandstone, and ranging from four to six hundred feet high, and affording great protection from the cold north and west winds which sweep over New Brunswick and the State of Maine. This valley is over one hundred miles long, and its soil consists of sand, sandy and clayey loam, based on the sandstone formation, sandy loam predominating throughout. At its eastern extremity, the enormous rise and fall of tide, and consequent rush of waters from time immemorial, have worn away soils and rocks and produced those rich and extensive deposits constituting the present marshes and dyked lands; these produce from year to year, hay, grain and pasture, without any renovating substance or manure of any kind, and still continue productive even after the lapse of one hundred and fifty years; and the Grand Pré, made famous by Longfellow's poem, is still covered with abundant crops and, in the autumn months, with numerous herds, as in the days of Gabriel and Evangeline.

On the south side of the valley and distant six to eight miles from the north range, is the South Mountain; the valley between is comparatively level, and throughout its whole extent of one hundred miles, is of good soil easily cultivated, and well intersected with streams and rivers, and is the most fertile and productive belt of land in Nova Scotia. Here the apple, pear, plum, cherry and even grapes and peaches, attain their greatest perfection.

Other parts of Nova Scotia, as Hants County, lying to the south and east of Annapolis and Kings, although more clayey and based on plaster and limestone sub-strata, produce very fine apples and pears. The interior of Queens, Lunenburg and Yarmouth Counties, on the southern coast of Nova Scotia, produce fair apples in certain localities when properly cultivated; so do Pictou, Cumberland and Colchester; but in the last six counties the cultivation of the apple is very limited. It does not suc-

ceed when planted on the seacoast, owing, in all probability, to the cold, damp fogs and winds which are so prevalent in the months of May and June, chilling and blighting the blossoms; but plums and cherries grow and produce large crops near the seacoast where the sea breezes are daily felt.

The apple attains a large size in Nova Scotia, and in favorable seasons is of fine flavor, well-ripened and colored. This is owing largely to our beautiful autumn months of September and October—the heat of the sun and the warm, dry weather being almost peculiar to our climate at this season of the year. The recorded weight of several varieties exhibited at the shows of the Fruit-Growers' Association is as follows:

	Dozen.	Single Specimen
<i>Gravenstein</i>	7 lbs. 9 oz.	13½ oz.
<i>Ribston Pippin</i>	6 lbs. 14 oz.	9½ oz.
<i>Yellow Bellflower</i>	7 lbs. 10 oz.	11 oz.
<i>Baldwin</i>	7 lbs. 10 oz.	12½ oz.
<i>Gloria Mundi</i>	10 lbs. 7 oz.	20 oz.
<i>Chebuco Beauty</i>	9 lbs. 7½ oz.	18½ oz.
<i>Emperor Alexander</i>	9 lbs. 3 oz.	18½ oz.
<i>King of Tompkins County</i> , 6 lbs. 14 oz.		11 oz.
<i>Northern Spy</i>	8 lbs. 6 oz.	12 oz.

The apples for winter use and for commercial purposes are taken from the trees in the month of October, from the 5th to the 25th, and sometimes even later. The early sorts, such as *Red Astrachan*, *Early Harvest*, *Early Joe*, *Early Red*, *Bough*, and *Sutton's Early*, a native of Nova Scotia, ripen in August and September; then come *Porter*, *Williams' Early*, *Munson's Sweet*, and *Gravenstein*, in the month of September and early in October, the *Gravenstein* often attaining its greatest perfection when left on the tree as late as the 5th and 10th of October. The *Baldwin*, *Greening*, *Nonpareil Russet*, *Northern Spy*, *King of Tompkins County*, *Blue Pearmain*, *Yellow Bellefleur*, *Ribston Pippin*, and other varieties do not attain their perfection till the 10th to the 25th of October.

Time and space forbid my entering upon a discussion of the temperature, moisture, and other peculiarities of our climate affecting the growth and cultivation of fruits, especially as I have not at my command the tables prepared, showing the extremes of heat and cold, and the mean temperature of the summer months; I may say, however, that the thermometer frequently reaches 85 to 90 degrees of Fahrenheit in the shade during the months of July and August, and falls as low as 50—the mean of the month of July being about 66 or 67; nor

will I be able for similar reasons to allude more than incidentally to the diseases of fruits and fruit trees in Nova Scotia.

The apple is the most important fruit crop of Nova Scotia, estimated in 1870 at about 150,000 barrels, and now above 200,000, Kings and Annapolis furnishing more than two-thirds of the whole, Hants coming next, followed by Lunenburg and Pictou. Kings, however, produces the largest number of sorts of the most popular and recently introduced kinds, and no doubt excels in fine specimens, not only of the apple but also of pears, plums, cherries, apricots, grapes, &c. In the other counties of the Province not mentioned above, most of the apples are of native sorts, and used as gathered, and for making cider or drying for winter.

The number of sorts grown in Nova Scotia is large, embracing most of the old standard varieties, English and American, as well as a large number of the new and popular kinds.

The following is a list of those for which the Fruit-Growers' Association offers premiums at their annual exhibitions:

Gravenstein, *Yellow Bellefleur*, *Ribston Pippin*, *Baldwin*, *Nonpareil*, *King of Tompkins County*, *Bleuheim Pippin*, *Northern Spy*, *R. I. Greening*, *Hubbardston Nonsuch*, *Blue Pearmain*, *Emperor Alexander*, *Esopus Spitzenburg*, *Westfield Seekonk-further*, *Calkin's Pippin*, *Chenango Strawberry*, *Porter*, *Duchess of Oldenburg*, *Pound Sweet*, *Gloria Mundi*, *Chebuco Beauty*, *Fall Jenneting*, *Cabashea*, or 20 oz. *Pippin*, *Flushing Spitzenburg*, *Canada Reinette*, *Pomme Gris*, *Clyde Beauty*, *Broadwell*, *Fameuse*, or *Snow*, *Golden Russet of Western N.Y.*, *Drap d'Or*, *Colvert*, *Tahman Sweet*, *Munson Sweet*, *Bishopsbourne*, *Keswick Collin*, *Golden Sweet*, *Roxbury Russet*, *Morton's Red*, *St. Lawrence*, *Ear. Bough*, *Golden Pippin* (old English), *King of the Pippins*, *Yellow Newtown Pippin*, *Calkin's Early*, *Mother*, *Delaware Harvey*, *Paradise Pippin*, *Golden Drop*, *Hawley*, *Golden Ball*, *Williams' Favorite*, *Yorkshire Greening*.

CRAB APPLES.

Large Red Siberian, *Transcendent*, *Hyslop*, *Montreal Beauty*.

This list varies from time to time, as new sorts are introduced, and some of the old kinds are rejected. I may also mention that they are not arranged according to their popularity, or market value; yet we consider for all purposes the first eight or ten kinds the best for Nova Scotia.

Of the early sorts of apples we have quite a variety, namely:—*Early Harvest*, *Early Joe*, *Sops*

of *Wine*, *Early Sutton* (a native of Cornwallis), *Early Bough*, *Early Calkins* (also a native), and *Red Astrachan*, which are cultivated more for domestic use than for commercial purposes. Some of these become fit for use about the middle of August, and continue until the *Gravenstein* and others take their place: the later varieties are, however, of most importance.

The *Gravenstein* deservedly stands at the head of the list for dessert, for the market, and for other uses. The trees are vigorous growers, and not more liable to disease than other sorts. They bear early and abundant crops, and in alternate years, as a rule. This apple was introduced into Nova Scotia from England, by the late Hon. C. R. Prescott, as early as the year 1839 or 1840, and from his generosity in distributing scions, it soon spread throughout our country and is now the most profitable and deservedly the most popular apple grown. As a market apple it averages one to two dollars a barrel higher than any other sort.

The *Porter* is cultivated to only a limited extent, as in no respect is it equal to the *Gravenstein* for dessert or market, and the trees are not as vigorous or healthy growers. There is quite a list of other autumn apples which are cultivated in Nova Scotia, such as *Fall Jenneting*, *Autumn Sweet*, *Drap d'Or*, &c., &c., but the limits of my paper will not allow me to enter into their habits of growth, value for market, or domestic use, &c.

Of early winter and long keepers, we have quite a variety; but I must be content with enumerating a few of the most extensively cultivated for home purposes and shipment to England and to domestic ports.

Perhaps there is no more popular apple in this class than the *Yellow Bellefleur*. It seems to flourish best on a rich, sandy loam; the tree is a rapid and vigorous grower, and produces more wood than any other, so that to obtain large and perfect specimens of fruit the tree has to be kept well headed. Apples of this sort thus grown, do not keep so well however, as when the trees are allowed to grow where the ground is not cultivated, nor the trees so closely trimmed.

The old *Ribston Pippin*, one of the best of dessert apples, is cultivated quite extensively in Kings, Annapolis and Hants Counties, and on a clayey loam comes to good perfection. The tree is not a vigorous grower, and is rather a shy bearer, but bears more or less every year. The fruit is often in perfection in February and March. In the English

market they rank equal to the famous *Newtown Pippin* of New York.

The *Greening*, while obtaining a fair growth of tree and bearing well, does not come to the perfection of size and flavor which it has in more southern latitudes. It is not extensively grown, but on rich, loamy soils, where it attains its greatest perfection, it ranks in price with the *Yellow Bellefleur*.

The *Baldwin* is a very popular apple for market purposes, and quite extensively cultivated in all the fruit-growing parts of Nova Scotia. The tree is a vigorous and healthy grower, and bears soon after being planted, and after it attains a fair size produces abundant crops every alternate year. Like the *Yellow Bellefleur*, it requires to be kept well headed to produce large, fine, and highly colored apples. It does not keep as long as the *King of Tompkins County*, *Northern Spy*, or *Nonpareil Russet* and others, often decaying at the core when the outer surface appears sound.

The *King of Tompkins County* is a large, fine apple, which is being pretty freely cultivated in many parts of our Province. It is not many years since it was first introduced among us, but it has been growing in favor with orchardists, and is now quite popular. Some do not like the habit of growth of this tree as it is spreading and straggling; but a watchful care over the trees in the nursery and after they are planted, will remedy this objection. It is said too that the apples are apt to fall from the tree before they are ripe, but this is not my experience. They keep well till February and March, and often bring higher prices than other sorts of the same time of maturing. I think it will be one of our leading and most popular apples.

The *Northern Spy*, like its bearing qualities, comes into favor gradually. Some persons planted them quite extensively, and after waiting for some years for fruit and finding little or none, grafted them to other sorts. Those who had more patience are now rewarded with good crops of fine fruit, and it is considered by some as No. 1 for late use and marketing. The trees are peculiar in their habit of growth, having numerous slim branches and growing nearly upright; but I find that when they begin to bear, they spread and form a fine symmetrical top. They are good bearers after they begin, and the next best keeping apple to the *Nonpareil Russet*, and for late marketing one of the best apples grown.

The *Nonpareil Russet*, an old English variety, somewhat resembling the famous *Roxbury Russet*, is very extensively grown with us, especially in the

county of Annapolis, where probably one-half of the whole quantity produced is of this sort. It seems to require a strong, clayey loam, to bring it to perfection, and in Annapolis county thousands of trees are found growing in stiff soils and among rocks, where the land is seldom cultivated to root or grain crops, but good crops of fine apples are produced. The tree is not a vigorous grower, nor does it form as symmetrical a top as many others, often throwing out twigs and shoots, which, if not regulated at an early stage, will produce straggling branches, which will disfigure the tree. The wood is not strong and is easily broken; the trees bear early, and as a rule every year. This is the best keeping apple known to us. It does not come to perfection till in March and April, and will often keep until early apples are fit for use. For shipping to England or to the West Indies it is very valuable.

The apples I have described are those which are most cultivated in Nova Scotia, and which are considered best for domestic use, and home and foreign market purposes. The following are also quite extensively cultivated, viz: *Esopus Spitzenberg*, *Flushing Spitzenberg*, *Broadwell*, *Talman Sweet*, *Munson Sweet*, *Hubbardston Nonsuch*, *Chenango Strawberry*, *Fall Jenneting*, *Famense*, *Pomme Gris*, &c.

PEARS.—The cultivation of the pear, although limited, when compared with that of the apple, has been practised for many years. It is said that there still exist some trees planted by the Acadian French, and many large trees are found on farms in the former Acadian villages, planted no doubt by the settlers from Connecticut, and which still bear abundant crops of fruit.

The pear seems to flourish best in deep, rich, loamy soils, and often does well in ground not much filled. There are some native sorts grown in Nova Scotia, a few of which will compare favorably in flavor, richness, and other qualities with some of the most popular sorts at present cultivated; of which I may mention the *Curran*, *Barbidge*, *Putsey*, *Burns' New Seedling*, and *Great Britain*. The principal sorts now cultivated are the *Bartlett*, *Flemish Beauty*, *Duchesse d'Angouleme*, *Howell*, *Seckel*, *Onondaga* and *Louise Bonne of Jersey* together with some other sorts introduced more recently by tree agents, but of which little is known yet.

From my own observation and the experience of others, I am of opinion that our seasons are not sufficiently warm, as a general rule, to produce good

and perfect specimens of this fruit; but in Cornwallis, Horton, Windsor, and some other places, the pear often attains fair size, is of good flavor, ripens well, and is free from spots or cracking. The trees are not more subject to winter kill, fire blight, and other diseases, than the apple or plum; and the old centenarians still existing in a vigorous state are a proof of this.

Within a few years some persons have planted the dwarf pear quite extensively; but, while they give earlier returns, I do not think they will be in any other respect equal to the standards, as they are more liable to fire blight and winter kill, an important point in a climate such as ours.

The late Hon. C. R. Prescott cultivated the pear quite extensively, and introduced a large variety of sorts, but few of which, however, did well with him, owing in part, doubtless, to his having selected for a portion of his orchard a piece of ground with a cold, wet, subsoil; consequently many of his trees had but a limited existence; those more favorably situated, however, did well.

The pear with us finds a ready sale, and at remunerative prices; the *Bartlett* taking the lead, and the *Louise Bonne of Jersey* being also very popular. Some very fine specimens of *Clapp's Favorite* were for the first time on exhibition at our annual fruit show last year, and which for size, beauty and flavor, well sustained the character of this new and popular variety.

I may add that the cultivation of the pear is coming rapidly into favor with fruit culturists in our section of Nova Scotia.

GRAPES.—The out-door cultivation of the grape in Nova Scotia can never be successfully practised on a large scale, as the length and warmth of our seasons, as a general rule, are not sufficient to mature it in perfection. With favorable localities, however, intelligent cultivation, the annual renewal system and girdling, large and fine grapes of the earlier kinds, such as *Isabella*, *Hartford Prolific*, *Concord* and *Delaware*, are produced by some cultivators. But little is attempted at out-door culture of the grape except in the valleys of Kings and Annapolis; and even there by but a few, who from experience and observation, adopting the system above mentioned, succeed very well.

I know it is the opinion of very many well-known cultivators of this luscious fruit, that girdling, while it brings the grape to maturity somewhat earlier, yet does so at the expense of the flavor. I cannot coincide with this idea, as it must be admitted that it is through the medium of the leaf, abstracting

oxygen from the air, and the retarded return of the sap, that the berries are perfected. I have vines of the *Hartford Prolific*, with a southern aspect, which ripen in the open air, without either severe summer pruning or girdling, while other vines, not more favorably located, but treated in the manner previously recommended, not only produce larger berries of the same grape, but ripen earlier and are of better flavor.

With the long and warm season of the south and of the Pacific slope of the United States, there is no question but that good grapes can be produced with little attention, and without the aids I have advocated; but such is not the case in Nova Scotia. There, with a southern exposure, and backed by walls or buildings, and protected in winter by a covering of earth or closely packed spruce boughs, with girdling and summer pruning, we can do very well to a limited extent in grape culture; but the question is, Will it pay? I certainly would not advise the cultivation of the grape on a large scale; but a few vines of the earlier sorts can be grown for domestic purposes. But no one should undertake it unless in a favorable locality, with wall protection, and some knowledge of the nature and habits of the vine; otherwise, while he may grow a vigorous, large, healthy, vine, he will in the fruit season gather but "sour grapes."

Mr. William Sutton, of Cornwallis, an Englishman by birth, has for years cultivated the grape with great success, adopting the renewal system and girdling, which I am convinced will alone ensure success with us.

As an experiment, I planted a vine of the *Black Hamburg*, having a northern and western protection (my office and dwelling), which has the full effect of the sun from early morning to the middle of the afternoon; and here, with the girdling and renewal system, I have produced large clusters of pretty well ripened grapes; I do not succeed every year, however. I sent a cluster Boston, to the editor of *Tilton's Journal of Horticulture*, 1871, which was noticed by him in that magazine.

The most common kinds cultivated with us are the *Isabella*, *Concord*, *Hartford Prolific*, *Diana*, *Delaware*, *White Sweetwater*, *Royal Muscadine* and *Black Cluster*. Other and more recently introduced sorts are being grown, but with what result is not yet known. Mr. Sutton has fruited a seedling or two which bid fair to be successful. I have vines of the *Salem*, and the *Champion*, a new sort introduced by J. E. Stone, of Charlotte, N. Y., for which he claims many superior qualities—not yet fruited with me, however.

The *Hartford Prolific* would seem to be the earliest grape grown here; but it does not happen to be as hardy or as vigorous a grower as the *Isabella* or *Diana*, and the clusters are very open, not well shouldered, and fall from the vines unless gathered at ripening. The *Concord* is fast coming into favor, will ripen before the *Isabella*, and is a better grape. The *Isabella* has been so long cultivated with us that it has become acclimated and stands our winter better than almost any other variety; but it requires severe pruning and girdling to produce fine grapes; it is a good bearer.

Hot-house grape culture is engaged in by several gentlemen in Halifax and other parts of the province, and with good success. Besides the graperies of Messrs. George H. Starr, Hamilton, Black, Harris and others, William Cunard, Esq., son of the late Sir Samuel Cunard, erected a large graperie at his former beautiful residence on the Northwest Arm, and upon the most approved plan; and the Hon. P. C. Hill, provincial secretary, who now resides there, produces annually tons of grapes of the best sorts. A cluster raised by Mr. Hill was sent to the Massachusetts Horticultural Society, in the autumn of 1874, in connection with a collection of apples and pears, and was noticed in their last journal.

PLUMS are quite extensively grown throughout the province and the crop generally considered a paying one, especially since steam communication with large cities of the Atlantic seaboard has been perfected and facilities exist for getting the crop to market.

The kinds most generally cultivated are those that will bear transportation best; and many of them—such as *Magnum Bonum* or *Yellow Egg*, *Large Blue*, *Sweet Water* and *Damson*—are largely propagated by sprouts and suckers; they are also reproduced from seed and frequently show variations from the original types—some of which are improvements and have been preserved and propagated.

The list of kinds grown is large, and will embrace nearly all the "Gages" of any note—*Nectarine*, *Washington*, *Jefferson*, *McLaughlin*, *Lombard*, *Braulshaw*, *Goliath*, *Pond's Seedling*, *Smith's Orleans*, *Duane's Purple*, *Coe's Golden Drop*, and many others.

There are, of course, some drawbacks; the worst is the black knot, which has destroyed whole plantations, but it is being better understood, and close pruning and burning of the afflicted branches before the fungus arrives at maturity, has been found the best method of combating the disease.

The Curculio is common in some parts of the Province, but the injury done by them in large plum orchards is not as perceptible as where the trees are but few. In many instances a benefit is experienced from their work in thinning out the over-crowded fruit; but still, I fancy that most persons will prefer to do their own thinning and would banish the little Turk from the premises if possible.

CHERRIES have been grown from the first settling of the country, and usually give good crops. The old "Kentish" used formerly to be grown by the roadside, and in the gardens of many of the farm-houses of the valleys of Kings and Annapolis, but most of those old trees have died out, and their places are filled by the "Dukes," "Hearts," "Bigarreaus" of the present day. A section of country lying between the towns of Annapolis and Digby, on the south side of Digby Basin, seems remarkably adapted to the production of this fruit, large quantities being annually shipped from that locality to the different markets. The kind mostly cultivated seems to be peculiar to the place. It is a medium sized "Black Heart" variety, which is propagated, I am informed, both from seed and from sprout. I am not aware how or where this variety originated, but if it has the property of reproducing itself from seed, as is asserted, it must be valuable, especially as the quality will rank from good to very good. Of the known sorts that are most common, I would mention: *May Duke*, *Early Purple Guigue*, *Black Heart*, *Black Tartarian*, *Waterloo*, *Yellow Spanish*, etc. Many new sorts have been lately introduced with more or less success. Among them is *Belle de Choisy*, which is very much liked by all who have fruited it.

QUINCES are successfully grown throughout the valley, but seem to do best in the vicinity of Annapolis town, many gardens there being fully stocked with trees and yielding good crops. The *Apple-shaped* is mostly grown, but we have both the *Angers* and the *Pear-shaped*.

CURRENTS used to be grown in quantities without much care or cultivation, before the advent of the currant worm. Since then, as it is found impossible to subdue the pests without clean cultivation and close pruning, many of the old bushes have been grubbed up and the quantities at present grown are not nearly as large as formerly. The kinds mostly cultivated are the *Red Dutch*, *White Dutch* and *Black Naples*. Many of the newer sorts, as *Cherry*, *LaVersaillaise*, *Victoria* and *White Grape*, have been tried and approved, but are not widely disseminated.

GOOSEBERRIES were more commonly grown some years ago than now, the mildew and the enrrant-worm having deterred many persons from planting, and the old bushes having died out. On the Atlantic coast of the province mildew is not as common, and most of the large English sorts can be grown to advantage, as the more humid atmosphere of the coast seems to suit the habit of this fruit better than the drier air and hot suns of the interior of the province, where mildew is prevalent and the foliage often falls before the fruit is matured. In those situations, except with careful cultivation, the only sorts reliable are the American varieties, such as *Houghton's Seedling*, which are seldom so troubled.

RASPBERRIES are not much cultivated except in the gardens of the wealthy; large quantities of the wild red raspberry, growing all over the province and yielding abundantly, supply the markets. Many of the cultivated varieties have from time to time been tried, and fully repay the cultivator for his time and trouble in bountiful crops of delicious fruit. The kinds most valued are the *Franconia*, *Fustolff*, *Hudson River*, *Red Antwerp*, *White Antwerp* and *Brinckle's Orange*. The "Caps" have not found favor with our growers as yet, several sorts tried not having succeeded.

BLACKBERRIES are not much cultivated, and but few of the named sorts will stand our changeable winter without being killed to the snow line. Native varieties do best, one of which, called *Green Cane*, is well worthy of cultivation. It was first brought to notice by Mr. Sutton of Cornwallis. The habit of growth is rather feeble, the canes bending over until the points sometimes touch the ground. The color of the cane is light green, with occasional faint lines of red in the sun. Fruit medium size, sweet, juicy, with small core: perfectly hardy and good bearer.

STRAWBERRIES are quite extensively cultivated, and after repeated trials of very many kinds, *Wilson's Albany* is taking the lead of all others, for a reliable crop. The next would be *Triomphe de Gand*, closely followed by *Jucunda*. Some new kinds are promising well, such as *President Wilder*, *Col. Cheney* and *Kentucky*.

Having thus briefly alluded to some of the more important points connected with the history and cultivation of the fruits most generally grown in Nova Scotia, I may be permitted to say further, that within the last fifteen years fruit culture has advanced very rapidly with us, and now occupies a prominent position, mainly through the instrumentality of the Fruit Growers' Association.

While the Association is provincial, its operations are confined chiefly to the counties of Annapolis, Kings and Hants, the three largest fruit-growing districts. The Legislature grants it yearly a small sum, which, together with the contributions of its members and other sources of income, creates a fund by which the Association is enabled to hold an annual exhibition of fruits and vegetables, at which quite a large amount is paid in premiums, besides providing for necessary incidental expenses.

The Association, by its exhibitions and the dissemination of information in various ways, has done much to bring the cultivation of the apple and other fruits into general favor, which are coming to be universally regarded as a necessity for domestic and other purposes.

I cannot close without again alluding to the fact that in Nova Scotia the apple does not attain its greatest perfection unless left on the tree until sometimes as late as the 15th or 20th of October, and this has prevented our province from being represented at this and similar exhibitions held at this early season. Therefore, to see our apples and other fruits in perfection, I would invite persons to visit Nova Scotia in the early part of October, and see our orchards burdened with the choicest fruit; or to attend one of our exhibitions. We hold one this autumn at the old town of Annapolis Royal, commencing on the 13th of October. Annapolis is only half a day's travel by steamer from St. John, N. B. Good judges from England, as well as from the United States, who have attended our exhibitions, have spoken in the highest terms of our apples, as to form, size, color and other qualities.

Nova Scotia apples have on several occasions been exhibited in London, G. B., at the shows of the Royal Horticultural Society; and I have the honor, as President of the Fruit Growers' Association of Nova Scotia, to hold four medals, two silver, one floral gilt and one gold, granted by the Royal Society for exhibits. The gold medal was taken when Nova Scotia competed with all Her Majesty's colonies for the "best collection of fruits and vegetables." I also hold a silver medal granted to our Association by the Massachusetts Horticultural Society for a collection of apples and pears sent to them in the autumn of 1874.

What I have advanced, however imperfectly put together and expressed, owing to my numerous professional and other engagements, will show that although Nova Scotia is pretty well to the north, and very far indeed "down east," we nevertheless have soil and climate adapted to the cultivation of

staple fruits; and I trust also to have left the impression that we are not wanting in the enterprise, taste and intellectual culture necessary to the successful and intelligent cultivation of whatever nature, not so kind to us as to more favored regions, has nevertheless placed within our reach. And I feel that such re-unions as this cannot but exercise a beneficial influence in many ways; among others, in making us better acquainted with each other; and we may flatter ourselves that as horticulturists know each other better, they will have cause to respect one another all the more. It will be *our* aim, Mr. President, to prove ourselves not unworthy of association in the great brotherhood of American horticulturists, so worthily represented in Chicago on the present interesting occasion.

Notes on Ancient Pear Trees.

BY ROBERT MANNING.

"The food was scant, the fruits were few,
A Redstreak glistened here and there;
Perchance in statelier precincts grew
Some stern old Puritanic pear."

—O. W. Holmes.

So much interest was expressed in the "Centennial pears" exhibited at Chicago, that it has been thought that a fuller account of the old trees than has yet been given might be acceptable.

The *Endicott* Pear. The tradition in the Endicott family is that this tree was planted in 1630. It is said that the trees constituting the original orchard came over from England in June, in the *Arabella* with Governor Winthrop, or in one of the other ships of the fleet arriving at Salem in June. The farm on which the tree now stands, not having been granted to Endicott until 1632, it is not probable that the trees were planted there before that time, but they might have been at first set in the Governor's town garden at Salem, where the Rev. Francis Higginson, on his arrival in the summer of 1629, found a vineyard already planted. The tradition further states that the Governor said that the tree was of the same date with a sun-dial which formerly stood near it. This dial, after having passed through the hands of the Rev. William Bentley, D. D., is now in the Essex Institute in Salem, and bears the date 1630, with the Governor's initials. The farm, which early bore the name of "Orchard," was occupied and cultivated by the Governor and his descendants for 184 years, from 1632 to 1816, and was held solely by the original grant until 1828, a period of 196 years. Under these circumstances the history of the tree is more

likely to have been handed down correctly than if the estate had changed hands. It is certain that Governor Endicott was early engaged in propagating trees, for, in a letter to John Winthrop in 1644, he speaks of having at least 500 trees burnt by his children setting fire near them, and, in a letter to John Winthrop, Jr., a year later, of being engaged to pay 1500 trees.

As early as 1763 the tree was very old and decayed. It was very much injured in the gale of 1804. In the gale of 1815 it was so much shattered that its recovery was considered doubtful. It was injured again in a gale about 1843. For the last fifty years it has been protected by a fence around it. In 1837 it was eighteen feet high by measurement and fifty-five feet in the circumference of its branches, and does not probably vary much from these dimensions now. Two suckers have sprung up on opposite sides of the tree, which bear the same fruit as the original, proving it to be ungrafted. It stands near the site of the first mansion of the Governor, on a slope where it is somewhat sheltered from the north and north-west winds. The soil is a light loam, with a substratum of clay. Grafts taken from the old tree grow very vigorously. From a pomological point of view, the fruit is of no value. It is hardly of medium size, roundish, green, with more or less rough russet, very coarse, and soon decays.

It may be of interest to state that the farm on which the old tree stands is again in the Endicott name, having lately been purchased by a descendant of the Governor. The tree stands in the town of Danvers, originally a part of Salem.

For further facts concerning this tree, see the "Transactions of the Massachusetts Horticultural Society" for 1837, and also an article by Charles M. Endicott, a descendant of the Governor, in Hovey's "Magazine of Horticulture," vol. xix, p. 254, June, 1853, from which the above account has been mainly derived. Each of these articles is illustrated with a cut of the tree.

The *Orange Pear*.—The tree which produced the specimens exhibited at Chicago, is owned by Capt. Charles H. Allen, and stands in his yard on Hardy street, Salem. The Rev. Dr. Bentley, who died about 1820, investigated the history of this tree and found it to be then 180 years old, which would make it now 235 years old. The trunk is hollow, nine feet five inches in circumference in the smallest part near the ground; just below the limbs it is several inches more. The tree is more than forty feet high, and the limbs are supported by shores.

It was grafted in the limbs, as a branch fifteen or twenty years old, shooting out several feet higher than a man's head, produces "Button" pears, and a large limb, part of which was "Button," which grew out still higher up, was blown off several years ago. In the very favorable pear season of 1862 it bore thirteen and a half bushels of pears. It bears in alternate years, having produced eight and a half bushels in 1872 and five bushels in 1873. The brittleness of the limbs of old pear trees is well known, yet Capt. Allen, with a care worthy of imitation, gathers every pear, excepting about a dozen specimens, by hand. The fruit shown at Chicago was hardly above half size, owing to the injury of the foliage by the slug.

This variety was, until the introduction of the modern kinds, highly esteemed. It is above medium size, averaging fifty-six pears to the peck, globular obtuse pyriform, covered with thin russet, juicy when gathered early and ripened in the house; of pleasant flavor but rather deficient in this respect. It is ripe about the middle of September. It was considered by my father a native, and was called by him the *American Orange*, and after examination of the descriptions and plates, I cannot think it the same as the *Orange Rouge* or *Orange d'Automne* of Duhamel, Decaisne, and Leroy. The Hon. Paul Dudley, Esq., of Roxbury, in some "Observations on some of the Plants in New England, with Remarkable Instances of the Power of Vegetation," communicated to the Royal Society of London (I quote from the "Philosophical Transactions," abridged, London, 1734, Vol. VI, Part II, p. 341), says: "An *Orange Pear Tree* grows the largest, and yields the fairest fruit. I know one of them near forty Foot high, that measures six Foot and six Inches in Girt, a Yard from the Ground, and has borne thirty Bushels at a Time, and this Year I measured an *Orange Pear*, that grew in my own Orchard, of eleven Inches round the Bulge."

If this is, as believed, of native origin, it is the oldest American fruit in cultivation, unless we except the *Apple pear*, which is probably of about the same date. This is small, oblate, of pale yellow color, ripening in August. It is quite distinct from the *Poire Pomme d'Hiver*, of Leroy, and I think also from the *Poire Pomme d'Été*, of the same author. I had supposed the variety to be extinct, but last year discovered in a garden in Salem the remnant of an old tree with a trunk four feet in diameter, and still producing fruit.

The *Orange pear tree* which produced the specimens exhibited, was inherited by the present owner from his father, to whom it came from his wife. It

had descended to her almost from the first settlement of Salem, but partly in the female line, so that the name of the owner sometimes changed. The house on the estate was built in 1812, having replaced one which was pulled down after standing 150 years. Within the period of a generation there were standing in Salem several trees of the *Orange* pear, some of which were reputed to be more than two centuries old, and all of which were undoubtedly very ancient, but they are all now gone except Capt. Allen's, the last one having been blown down in the winter of 1874-5. I have heard a tradition that this last mentioned tree was one of several imported from England and planted in gardens at intervals on the northerly side of the principal street in Salem. This tradition may or may not be true with regard to these trees, but it would not apply to the Allen tree, for the height at which it was grafted forbids the idea that it was imported from England in a grafted state.

The *Anthony Thacher Pear*.—This tree stands near the meadows about a fourth of a mile north of the Universalist church in Yarmouth, where Anthony Thacher's house formerly stood. It is a large, rotten-hearted old tree. It has lost nearly all its old branches, but has thrown out many new ones. The late Judge George Thacher, who, if now living, would be 120 years old, inquired into its history, and made the matter certain that it was planted by Anthony Thacher about 1640. It is believed to be a grafted tree, as it contracts two or three inches at about a foot and a half from the ground. It is taken good care of and will probably last many years. It is now owned by the heirs of James C. Hallet. There are other trees of the same kind in the vicinity, but their age cannot be proved.

The fruit is of medium size, ovate pyriform, green, changing to yellow at maturity, of tolerable quality, ripening early in September. For the specimens exhibited, as well as the facts above stated, I am indebted to the kindness of Amos Otis, Esq., of Yarmouth Port, who had made the local history of Cape Cod his study for the last fifty years, and who died much lamented on the 19th of October last.

Anthony Thacher came from England in 1635, and after residing in Marshfield, removed to Yarmouth in 1639, being one of the three original grantees of land in that town. The late Dr. James Thacher, of Plymouth, author of the "American Orchardist" (published in 1821), was a descendant of Anthony in the sixth generation. Anthony Thacher accompanied his cousin, Rev. John Avery, in that disastrous voyage of which Whittier has perpetuated

the memory in his ballad, "The Swan Song of Parson Avery." Anthony Thacher got ashore on Thacher's Island, the headland of Cape Ann, and gave name to the island. (See Whittier's "Home Ballads" and Young's "Chronicles of the First Planters of Massachusetts," p 485).

I endeavored, but without success, to obtain fruit from the pear tree planted at least as early as 1650, by Governor Prence, or Prince, at Eastham, on Cape Cod, and now owned by Capt. Ezekiel Doane. It is known as the *Fall* pear. It is about the size of a hen's egg, tapering towards both ends, green, nearly covered with thin russet, of inferior quality, but not as coarse as the *Endicott*. In 1836 it was a flourishing, lofty tree, producing an average of fifteen bushels of fruit. It consisted of two stems, branching from the ground, the larger of which was blown down in the great storm of April, 1851. The portion now remaining is thirty-five feet high. It is a natural tree and has not failed of bearing for twenty years. It stands in low ground.

The *Pickering* or *Warden Pear*.—This tree was grafted on the 19th of April, 1775, the day the battle of Lexington was fought, and must have been at that time a small tree. It is called by the owner the *Uvedale Warden* or *Pickering* pear, which are synonyms of the *Uvedale's St. Germain* or *Pound*, but it is entirely distinct from that variety, being much smaller as well as otherwise different. It resembles, and very probably is identical with, a variety which I have known as the *English Warden*, but which I do not find described in any pomological work, and have not seen for years. It is of medium size, turbinate, light yellow, with a dull brownish cheek, in use in winter, for cooking only. Paul Dudley says, in the paper above quoted, "I have a *Warden Pear Tree* that measures five Foot six Inches round."

The *Pickering* tree contracts suddenly at about a foot from the ground, where it must have been grafted. It shows no sign of being grafted elsewhere. Below the point of grafting, it is full two feet in diameter and is about twenty-five feet high. It stands in a low, moist place. The top was much injured by the great gale of September, 1869, losing several large limbs, but the tree is on the whole in good preservation. In the same garden is a tree probably as old or older, believed to be a *Messire Jean*.

The estate, now much circumscribed from its original extent, on which this tree stands, has been in the same family since 1642, having been purchased in that year by John Pickering, who came from England in 1637, and built the house, now standing and occupied by the owner, in 1651. It is on Broad Street, Salem. The tree

was grafted by John Pickering, of the fifth generation.

The Hon. Timothy Pickering, eminent for his incorruptible integrity and immovable firmness, who successively held the offices of Adjutant-general and Quartermaster-general in the Revolutionary army, and of Postmaster-general, Secretary of War and Secretary of State in the Cabinet of President Washington, and continued to hold the last named office under President Adams, was a brother of John. At the breaking out of the Revolution he was Colonel of the Essex regiment, and on the day when this tree was grafted by John Pickering, who was an invalid, his more vigorous brother mustered his regiment and marched to intercept the retreating British troops. Timothy Pickering was also interested in agriculture, having been Secretary of the Philadelphia Society for Promoting Agriculture, the oldest agricultural society in the United States, and after his return to Massachusetts, was the first President of the Essex County Agricultural Society. The estate on which the old pear tree stands was devised by John Pickering, who died unmarried, to his nephew John, son of Timothy, the most eminent American philologist of his time. On his death it descended to his son John, the present owner, to whom I am indebted for the facts here stated, as well as for the specimens of fruit exhibited at Chicago last September.

The old Stuyvesant (*Summer Bonchretien*) pear tree, planted in 1647, which was one of the notabilities of New York city until broken down in 1866, will be remembered by many, and the old pear trees planted by the French settlers at Detroit and elsewhere in the west, deserve to have their history more fully recorded than has yet been done.

We know of only a single apple tree which can lay claim to any historical interest, that planted at Marshfield, about 1648, by Peregrine White, who was born on board the *Mayflower*, in Plymouth harbor in 1620, the first Englishman born in New England. This tree was one of an orchard planted by him, and, with the land, passed by inheritance to his descendants until a few years ago, when the land was sold and the tree was cut down by the purchaser. It bore fruit as late as 1846. Doubtless there were many more apple trees than pear trees planted, and the fact that so many more of the latter than of the former have come down to our day would seem to favor the generally received opinion that the pear is longer lived than the apple.

The Production of New Varieties of Fruit From Seed, to Insure Hardiness, &c.

BY GEORGE P. PEFFER, *Pocahontas, Wisconsin.*

Mr. President, and Gentlemen:—Before speaking on this subject, you must be aware that I am a stranger, personally, to nearly all of you, and my experiences in fruit culture are exclusively in Wisconsin, for 34 years past; although a foreigner by birth, I never visited the east since I came to this country; hardly ever been out of our State, and not a professional nurseryman nor botanist, only a scholar in the books of Nature, and hardly able to express myself in the English language; you must excuse mistakes, if such should occur in my narrative, and may ask for explanations of any part, I shall have to say, after we get through.

Nature brings forth its fruits, flowers and grains, according to its climate, soils and localities; therefore, as these differ very much in the United States, many varieties of fruits and trees are collected and grown in many sections of this country, which do very well for a time, but as soon as our seasons change (which is in some localities very often), and occasionally, at least in the north-west, the climate will change from tropical to frigid zone in 24 hours, a week, month, or a year, and especially in seven years.

As we have plenty of examples, look at western Michigan, for instance. They had raised for the last seven years with perfect success, peaches, quinces and other fruits, and much money has been made and more expended in putting out new orchards. But some of them are failures on account of a change in the climate, which was brought about by the prevailing north and north-east winds last winter, so that the west lake shore did not have the water or fog protection it had for former seasons, hence, many trees were frozen to death on account of it, while the Wisconsin shore has raised all kinds of fruit of the sorts of which there were trees left, at least as far as the fog reached, say a dozen or more miles west from the lake shore.

If our prevailing winds should be from the east, north, north-east, for the next six or seven years to come, the Wisconsin lake shore will be as favorable as it had been in former years, to raise peaches, plums, and all such fruits as has been raised on the Michigan shore. As my memory serves me, peaches were very plenty in 1842 and '43, and other fruit trees grew well; but 1844 killed the trees. Peaches were plenty again from 1849 to 1854—55 and '56 all were killed again, and everybody discouraged

about raising fruit of any kind; but trees were set again and more or less peaches raised from 1864 to 1872, since then all fruit trees suffered away from the lake shore, more or less, which accounts for so many varieties in cultivation from nearly all over the globe, in the west, and many will do well when they find the right locality or climate that is natural for them, but unfortunately many varieties do not find it, hence so many disappointments. There are localities west however, where eastern sorts do as well as at their natural home, because our western lakes ameliorate the climate to a great extent in winter; especially is it the case on peninsulas or necks that run out into deep water on the inland lakes; but when our prevailing winds change so as to not come over the water, all tender varieties will receive a shock and are injured more or less, according to the length of time it continues to blow, except from the south and south-east. Therefore varieties that will do well in one place are failures in others. Wherever a moderate climate is had for a given time, fruit trees of some sorts will be profitable for at least as long as the changes are not too great to injure the trees or buds. There are varieties that will stand more heat and cold and grow in a wider range of climate than others, as has been demonstrated within the last few years in the west. For instance Russian varieties have gone through from 38 to 44 degrees of cold, *Duchesse of Oldenburg* lives at 44 degrees, dead at 46 degrees; *Alexander*, 40 degrees, dead at 44 degrees; *Red Astrachan*, 38 degrees, dead at 44 degrees below zero. *Tetofski* is the only variety of the apple that lives at 53 degrees below zero, while some of the Siberians have been killed with 50 degrees below zero, and some of the hybrids did not hold out at 45 degrees below zero; but of this class our north-west will have their fruit yet; as there is a great improvement in the latter, and when well understood as to the nature of its fertilizing itself with the apple whenever there is a chance, very good and desirable sorts will be obtained.

There are limits to all our varieties of fruit trees as well as other vegetation, in heat as well as cold; try, also, wet, poor, also rich soils, and in order to raise varieties of fruit that are desirable and lack hardiness, or quality, size, or color, they must be raised from the seed, and those again from the seed, generation after generation, of some sort that has perfected its seeds in a climate similar to it. Each generation will get more used to the changes in the climate and locality, and when well established any desired improvement can be made if the prin-

ciple is understood first. How they are naturally produced, also their nature, where grown and in what climate they are at home, also male and female organs, how they connect, under what circumstances, when and where, or at what time.

Also varieties where the male or the female predominates most; what influence the male, also the female, has on the fruit, seed or stock, constitution and hardiness of tree. If we understand all these points, we can, almost to a certainty, obtain the desired improvement, either in the fruit or tree, or both. In the apple, most varieties have male and female, or in other words, stamens and pistils, in one flower, and when isolated so there is no possible chance for any insects, bees or wind, to carry pollen, must and will reproduce themselves. As it has been frequently done in our State when a few fruit trees have been set out on a new clearing miles away from any trees of its species, and the first fruit-seeds invariably bore fruit identical with the parent. By covering a bunch of flower buds with a glass jar or light colored paper sack until the flowers or blossoms are well opened and the petals commence to wilt, they can be removed and the identity of the variety will be preserved in the trees from those seeds taken from the fruit (or flower) thus grown.

In crossing, or to improve the variety, we must select for the female, the hardiest and best style of the tree and size of fruit; for the male, the earliness or lateness, quality of flavor and productiveness. This can be easily done if we go to work in the right way. For instance, in fruits where stamens and pistils are in one blossom, and we have an early variety that is perfectly hardy, but we wish to improve it and make a late keeper, we must select the tree that is strongest and hardiest of the two varieties we like to cross, for the female; and when just commencing to blossom, cut off the stamens below the anthers or pollen sacks, just before the flower leaves are opening in the morning, upon a branch, or spur, or a limb, that can be covered with a glass jar, or light paper bag, which should have been used the evening before over some perfect open blossoms where the pollen sacks had not yet bursted, of the variety that is wanted, for the male; the limb or spur cut off with the knife or shears (without taking off the the jar or bag), will contain the pollen; at once close it with the hand and carry it to the place where the pollen sacks had been removed from the flowers or blossoms and the jar or bag put over the spur or limb at once. But if the trees or blossoms so treated are quite a distance apart, two jars or bags

have to be used, to keep the pistils undisturbed until the stamens with the pollen in the other jar are ready. Then remove the first jar or bag and put the pollen jar or bag over it; close the mouth of either with paper, moss, or string, anything to keep it closed until the sun has dried up the dew or wet inside, give the jar or bag a stirring or shaking, and it is done.

Now here are the fine points where the mystery lies, of the influence of either variety on the new growing seed. If the operator will observe on shaking the jar, he will see the fine dust fly all over inside, and settle on the tips of the pistils or stigma, which have had a little shiny liquid on the tips, and this dust or pollen adhering to it soon dries up, and the seeds (of which each has a stigma or open tube, that reach from the pistil to the forming seed in the core and form it, thus impregnated, and seeds ripened contain the mixture of both varieties. Now we have selected the early variety for the female, a late variety of the best quality, for the male. If the impregnation has been equal, or in other words, if the stigma or the liquid on the pistils had all been equally supplied with pollen, or fertilized, the result would be that all the seeds (if grown to trees), would bear fruit alike, and the female control the constitutionality and habits of the new variety, while the male controls the quality and texture of the fruit. But, as that is seldom the case, each individual seed will have more or less the predominance of either parent in a greater or less degree. An apple blossom has generally five pistils, each of these has from two to five stigmas, according to the propensity or vigor of the tree. Each stigma is formed from an embryo seed, and, if fertilized, will produce a live seed or germ. A germ has in itself the power to expand and grow and reproduce again; each seed is an independant individual, and capable of varying from every other one, when they are left in the open orchard and fertilized in a natural way; and when the blossoming of an orchard nearly all occur at the same time, and there are a large variety of different sorts, there will not be probably one in ten thousand that will be exactly like the fruit the seed is taken from. And why? Nature has provided in fruit trees (especially to those not natural to the location and soil), a law, that man as well as animals, should observe; and that is, *avoid breeding in and in*. If it were best to do so, nature would not have such a provision made.

Now any close observer has noticed that in any blossom or flower, where male and female are in one,

the pistils have the shiny liquid ready, and protrude from the flower leaf sometime before the stamens have straightened out, and the pollen sacks are ready to distribute the pollen from the same flower; if in cool or wet weather, it may be a whole day, but generally it is an hour or more. If, as said before, there are more varieties of the same species in the vicinity, the pistils will uniformly all be fertilized from the adjoining trees, especially when more early blooming varieties are in the vicinity; also one speck of pollen is enough to fertilize any stigma or embryo seed-tube, so that before the males on that tree (or flower) are ready, the females are all fertilized from the pollen of adjoining trees, especially when there is considerable air stirring, which explains why apples (and other fruits) differ in flavor and sometimes in form on the same tree and from the same variety. We have on exhibition three *Alexander* apples, fertilized with *Tolman Sweet*, also five more from the same limb; all look alike, but the fertilized ones are firmer, and on cutting one of each, find the firmer one sweeter and finer grained than the other one not so fertilized. Whether the male had that influence on this apple I cannot positively say, but cannot account for it otherwise; but certain am I that fruit grown on trees from the seeds of those apples, will be later, and sweeter, and finer grained, than *Alexander* (its mother), and will probably have good size and color. If it should prove too sweet and too large, then smaller hardy varieties can be fertilized with it, and so on until the desired end is accomplished. We also have two seedling apples from *Tetajski* (male *Perry Russet*); not satisfactory, as they are lacking in size and flavor, although better than the mother; will make a hardy tree to work on. Seeds of such varieties, and, in fact, any variety that fruited well this year, where they were exposed to 40 degrees below zero last winter, will answer to use for stocks for grafting, or using as parents to get new and hardier varieties from.

All kinds of fruit can be so improved—pears, plums, cherries, peaches, in fact every kind of fruit-trees, and grain and plants, where the distinction of male and female can be recognized.

“Rotten Root.”

At the meeting of the American Pomological Society at Richmond, in 1877, the following resolution was submitted by our late fellow member, J. S. Downer, of Kentucky, and passed.

“Whereas, a large per centage of the apple trees planted on rich lime-stone soils, south of the thirty-

eight degree of north latitude, die prematurely, or from the ages of two or three to some ten years, and from a cause or causes not well understood; therefore,

Resolved, That a committee of three be appointed to examine into this disease and its cause, and report at the next biennial session of the Society."

W. C. Flagg, Thomas Meenan and Robert Manning, were appointed under the resolution.

From a conversation had with Mr. Downer at the time, it was understood that the so-called "Rotten Root" was the disease referred to in the resolution. Owing to its rare occurrence in the east and north, as compared with the west and south, the two members of the committee from the Atlantic States have pretty much turned over the investigation into the hands of the chairman, who was not present at the Boston meeting, and accordingly would now report so far as he has been able to get possession of facts.

"Rotten Root," or "Root Rot," is a condition of certain fruit trees that has been noticed in our horticultural regions of southern Illinois for many years, and the name is applied to at least two and perhaps more different diseases.

Judge A. M. Brown, of Villa Ridge, Pulaski Co., Illinois, says: "There are two kinds, I think; one caused by fungi from dead wood, and the other by Woolly Aphis. The first we find on the apple and the pear; the last on apple alone. The fungus is white, embracing and surrounding the roots, which shortly rot. In several cases where a rotten root or piece of wood lay near a root of a young and healthy apple or pear tree the fungus attacked the tree. In one case a half-dozen young seedling apple trees died, and a dead root—of the tulip-tree I think—was found lying along the row. In another case, the pear trees in a circle around a large white oak stump were found to all die. This rot is worse in newly cleared land and disappears as fields grow older."

Mr. A. M. Lawver, of Cobden, Illinois, in 1873, after stating that most theories had been proved incorrect, said: "It is my *opinion now* that the tree is injured by sudden and repeated changes of temperature in this latitude, during February and March, causing a sudden flow and check of the sap."

Mr. C. V. Riley, State Entomologist of Missouri, perhaps adds a third theory in his first report when he says that one kind of "rotten root" "seems to be a simple decomposition of the vegetable tissue, analogous to the rotting of the root of cabbage,

for instance. Its cause is not clearly understood, though it seems to be in consequence of certain conditions of the soil."

In reference to the causes assigned by Mr. Lawver and Mr. Riley, I have not found sufficient facts to justify an opinion, but the other two are well defined and active destructive forces attacking the roots of the tree.

Other correspondents, without assigning a cause, bear witness to the evil results of Rotten Root.

W. H. Ragan, Secretary of the Indiana Horticultural Society, says: "We have had the 'Root Rot' for several years. It has always been a mystery to me. As suggested by your letter, it is generally worse on lime-stone soils, though I have met with it in other and different soils. I am convinced that it is contagious, being communicated from tree to tree in some invisible manner. With us it has not entirely respected age, although it has been most frequently met with in orchards of from 7 to 12 years of age. I know of no remedy. The future success of orcharding here depends very much upon the extent to which the disease is to prevail."

A correspondent of the Department of Agriculture, writing from Pulaski County, Illinois, says: "The Root Rot seems to increase with time in spots, after it once makes its appearance. If it kills one tree in a locality, other trees near it die out, and it is almost impossible to get trees set out in the vacancy to grow."

In addition to what we have quoted from Judge Brown as to the fungoid origin of one form of rotten root, I add the following from a late letter of Parker Earle, of Cobden, Illinois: "It seems absolutely certain from the multitude of examinations I have made, that it is communicated to the roots of the living tree from decaying wood substances, root or otherwise, with which they come in contact in the soil. But the fungus is not found on all pieces of roots, limbs or chips, that may be decaying in the soil; only a small portion seeming to be enveloped in this peculiar manner. What the peculiar conditions of its origin and growth are, I cannot say; and whether it prefers particular kinds of wood, or whether any kind is exempt from attack in our soil, are questions I am unable to answer. That it never originates in land entirely free from tree-roots I cannot absolutely say, but I think it will very rarely be found in such land. Most of my planting has been done in new or newish land; but there were three or four acres in the large pear orchard so long cleared that the stumps were all gone, and on this ground

I think I lost no trees from the fungus; I think that is the uniform experience of planters in this region."

Rotten Root caused by this fungus was first observed, we believe, by Dr. Hull, in an *ad interim* visit to Cobden in 1868, and afterwards in southern Missouri, on both the pear and cherry. His observations and conclusions are given in the Report of the Illinois State Horticultural Society, for 1868. The most obvious and probably a complete preventive is suggested by Mr. Earle—"plant in old fields."

But a large part of "Rotten Root" seems traceable to the Woolly Aphis, or American Blight. I assume the identity of the Apple Root Plant Louse (*Pemphigus pyri* of Fitch), and of the Woolly Aphis (*Eriosoma lanigera* of Husmann), leaving the question to be authoritatively settled by the entomologists. I shall leave to the same authority to decide whether the insect is of an European or Cis-Atlantic origin or both.

The Woolly Aphis is probably the cause of the decline alluded to in Mr. Downer's resolution, as I gather from the following statement received from his son, Robert W. Downer: "We have noticed such decline of trees pretty closely, and the result of our observations is about this: that the roots of declining trees are always warty, made so by the Aphis. I don't think any varieties are exempt, but it is worse on some than others. *Northern Spy* (concerning which I had inquired) is not planted much here, but we had two trees well situated, and both have died. The only orchards free from decay are those planted in wet land; river bottom, I believe, is most free; flat, black, gravel wet land next; and higher, freestone white clay, is not injured much. Kentuckians have a way of making great banks of dirt around their trees, by a succession of mould-board plowings. Such trees, if out of a sag, or bottom, die worst. In heavy, wet land, you find the roots smooth and free from Aphis; in dry land with a bank around you find roots knotty, covered with the white Woolly Aphis. These trees put out a great number of feeders up above the original roots, and the hill protecting the louse, he soon sucks the roots below until they die, and the trees often feed off the small roots until the lower ones are rotten and it blows over. Deeper planting, with a basin of four or five inches deep, I think would benefit young apple trees. Compact and wet soil banishes the Aphis.

"Notwithstanding all this, we have some good orchards in almost all kinds of situations and soils. A few persons attribute the loss to mode of grafting (as was also the belief, to some extent, in southern

Illinois). This is guessed at; it is not so with us. We planted a row of stocks along one side of an orchard, stock-grafted them at the ground, and have never moved them. They have died fully as bad as any other trees we have.

"Lime water poured into a little basin around the foot of the tree, is said by some to clear the Aphis off a diseased tree and restore it to health; but I have not experimented with this sufficiently to know."

From evidence like this, we may assume that the cause of decline referred to by Mr. Downer, was generally, if not altogether, the Woolly Aphis, an insect whose history and habits have been traced in this country by Fitch, Harris, Walsh, Verrill, Riley and others, and whose ravages, under the name of American Blight and White Mealey Insect, and under a different habit of life, in some cases have been felt in England, France, Belgium, and other continental countries, and last, and by no means least, in Australia, where the insect appears to have been more practically studied than in any other country.

The first of our horticultural writers who gives us an account of the habits of this insect, I believe is Lindley, who published the "Guide to the Fruit and Kitchen Garden," in 1831. He says (in England), "This insect penetrates the ground, fixing itself upon the bottom of the stem and large roots immediately connected with it." He recommends paring and scraping the infested parts, removing the earth when necessary, and applying a wash made of "half a peck of quick lime, half a pound of flour of sulphur, and a quarter of a pound of lamp-black, mixed with boiling water into a thick paint."

McIntosh, 1839, adds the following:

"Salisbury, who has described this insect pretty accurately, and given figures of it in various states, believes it to be a native of a warmer climate than ours, from the circumstance that the living insects as well as the eggs remaining on the branches of the trees, are frequently killed by the action of the frost," which was the case, he says, in the winter of 1813-14. * * "It unfortunately happens, however, that the roots of the trees are also attacked by them, and from thence a yearly stock proceeds, as the warmth of spring advances, for it is found that both eggs and insects remain under ground in safety."

Kenrick, in his "New American Orchardist," 1844, speaks of the insect on hearsay from Lindley. Downing, in his "Fruit and Fruit Trees," in 1845, mentions it as only found on imported trees.

Thomas, in his "Fruit Culturist," 1846, speaks of it as found on young trees and of no great interest in the United States. In the *Horticulturist*, for February, 1849, is a letter from J. Fulton, Jr., of Chester County, Pa., evidently describing and believing it to be the Woolly Aphis, which he says is unfortunately not rarely seen and has been found most frequently "on trees which grow in a gravelly or slaty soil, and seldom on trees growing in a mellow loam." Mr. Downing in his comments pronounces the insect not the Woolly Aphis, but does not say what it is, and recommends wood-ashes in the preparation of the rows for stocks, as a preventive. He was, perhaps, misled by the subterranean character of the insect. Cole, in his "Fruit Book" (1850), speaks of the insect as very destructive in England, but much less so here. Elliott in his "Western Fruit Book" (1855), gives a description, drawn apparently from preceding authors. All of these American authors, with the exception named, speak of the insect as preying on the parts of the tree above ground, although Lindley and McIntosh had given them a clue.

Our lately deceased fellow member, M. L. Dunlap, of this State, is credited by Mr. Walsh with observing the Woolly Aphis in immense numbers infesting the roots of Dr. Long's orchard, near Alton, as early as 1858. I am not sure but this date should be 1868. In 1859, however, without doubt it had been extensively observed in Ohio, as in the report for that year, page 29, of the Ohio Pomological Society, we find the following:

"Messrs. Storrs & Harrison, of Painesville, requested the Society to make known if there was any remedy for the insect which infests the roots of the young apple trees in the nursery, causing knotty protuberances on the roots and injuring their growth. Young seedling trees are often injured by this cause.

"All the nurserymen present at the meeting, were more or less familiar with the evil, but none could suggest a practicable remedy. Some soils and locations are much worse than others, but no definite rule or cause could be assigned respecting it."

In 1867, special attention was called to this insect by the examinations made by the *ad interim* committee of the Illinois State Horticultural Society, and by Mr. Benj. D. Walsh, then just appointed State Entomologist, at South Pass, where its ravages were very destructive; and by individuals at various points in this State, Missouri, &c. Mr. Walsh, in his report for the year, treated of the insect at considerable length, making it distinct from

the Woolly Aphis, under the name of Apple Root Aphis. Mr. C. V. Riley, now State Entomologist of Missouri, but then connected with the *Prairie Farmer*, took similar ground. Mr. Walsh regarded the Woolly Aphis as of European origin, as confined to northern climates and as inhabiting exclusively the limbs and trunks of trees, and having one venation of the wings; while the Apple Root Aphis had a different venation of the wings, was generally found on the roots, belonged to warmer climates, and was of native origin. He found, however, that the Apple Root Aphis occurred as far north as the northern line of Illinois; that it was found in cool weather and rainy seasons on the trunks and limbs of trees; and Mr. Riley, I believe, has discovered that in all probability, the alleged difference in the venation of the wings was founded on an error of Mr. Fitch. So many differences have disappeared, that the probabilities are that the two supposed species are identical, or at most, varieties under different conditions.

Mr. Riley in his "First Missouri Entomological Report" for 1868, gave drawings of the insect and his depredations, and an article in the *American Entomologist*, for January, 1869, repeats Mr. Walsh's opinion that there are two differing species. Mr. Riley is silent on this point in his first report, but in the "Kansas Agricultural Report," 1872, he says "there is now every reason to believe that the two insects are identical; or that at furthest, they can only be considered as varieties of one species. I last Summer took especial pains to examine the Woolly Louse on the apple trees in Europe, for it is quite common in the orchards around London. I could find no difference between them and our American type, though they seem to thrive better and perhaps secrete more cottony down in the more moist and cool climate. Yet while our root louse is very injurious in the west, and only exceptionally found on the limbs above ground (though more often so found in the eastern States), all authors that I am acquainted with have spoken of it as occurring solely on the limbs in Europe; though several friends both in France and England, have informed me that they have found it on the roots also, and that in these cases it caused just such swellings as our root louse does here." Mr. Riley had not seen Lindley's or Salisbury's statement that they occurred both on stem and roots, it will be noticed, yet the evidence furnished him confirms that statement. In addition, the editor of the English *Journal of Horticulture* says, August 8th, 1872, that the insect descends to the ground in winter, in Great Britain.

Meanwhile, a special interest in this insect has grown up in Australia, and the adjacent regions that are settled by the English. The English *Journal of Horticulture* for January 8, 1874, contains a paper read before the Nelson, New Zealand, Association for the Promotion of Science and Industry, by T. Mackay, C. E. This paper, after giving a short account of the insect, and a quotation from Patterson's Science Gossip on its extraordinary profligency, adds some facts that, perhaps, bear upon our own conditions. The author says the insect "is evidently more destructive in semi-tropical climates, such as Australia and New Zealand, than in Britain, owing in a great measure to the effect which the frequent hot, sunny days, succeeded by the cold, frosty nights of early spring, have upon the circulation of the juices of the tree, unduly stimulating their flow in the day-time, and abruptly checking their current at night," &c. The author adds, that "in Tasmania, seedlings of the *Siberian Bitter Sweet* had been found, with the exception of barely one per cent., to resist the blight, and grafted upon diseased trees, so as to make trees bearing two kinds of fruit, they cleared the diseased parts of the insects." As a preventive of blight the writer recommends using the same variety as a stock. The *Siberian Bitter Sweet* is described by Mr. Hogg, as an apple raised by Mr. Knight from the *Yellow Siberian Crab*, fertilized by the pollen of the *Golden Harvey*. The *California Horticulturist*, for 1872, contains a paper, running through several numbers, in which are given the results of a long series of experiments in Australia, I believe, looking to the comparative exemption of different varieties of the apple in that climate. The *Winter Majetin* was found to be blight-proof, as it is in England, and next to it came the *Northern Spy*. Among apples nearly blight-proof, were the *Duchess of Oldenburg*, *Gravenstein*, *Hawley*, *Irish Peach*, and *Maiden's Blush*. In a second grade were *Reinette de Canada* and *Yellow Bellefleur*. In a third, *Red Astrachan*, *Emperor Alexander*, *Early Strawberry*, *Holland Pippin*, *Melon*, *Newtown Pippin*, &c.

In a fourth list of those badly attacked, were *Early Harvest* (mentioned also by Mr. Walsh as specially affected), *Fall Pippin*, *Gloria Mundi*, *Large Yellow Bough*, *Snaw*, *Siberian Bitter Sweet*, &c. In a fifth list liable to severe attacks, were *Boston Russet*, *Baldwin*, *Broadwell*, *Esopus Spitzenburg*, *Early Joe*, *Jonathan*, *Yellow Siberian Crab*, &c. The *Siberian Bitter Sweet* in this case seems not to have given the same results as in New Zealand and in England. I do not see it stated whether the aphid in those antipodal regions is found generally on

the body or roots; but I presume from what is said, it is upon the parts above ground.

Thus far goes the evidence I have been able to collect in regard to this insect. Its effect on the roots, the exemption of roots standing in wet land, its above ground and subterraneous habits, remind one of the Phylloxera of the vine of which, Packard says, it is a near ally. Its experience in different climates, seems to me to account for its differing habits. Where the climate is sufficiently warm throughout the year, it appears to remain upon the stem and branches of the tree; but even in a climate as mild as that of Great Britain, it is not confined to the upper parts, descends to the ground at the approach of winter, and in severe winters is destroyed by cold on the parts above ground. In Australia and New Zealand, which are semi-tropical in their character and have mild winters, it probably finds no difficulty in living on the parts above ground throughout the winter. In the United States it no doubt finds a very congenial summer temperature, but our ordinary winters, even, must be too cold for its existence, and usually destroys all except the underground insects, and possibly, more or less even of them. This would account for the insect being more injurious in our southern regions than in the northern, and for the formation of an almost permanent habit of living under ground. In wet seasons it seems to leave the roots for the trunks on account of the too great degree of wet about the roots. In wet soils situated in a cold winter climate, the insect should do but little mischief. It cannot probably there live on the trunk in winter, nor on the roots at any time. We have no facts, perhaps, beyond our own country to prove it, but I believe the insect also seeks the roots in our climate on account of its occasional intense heat and dryness, and should expect that to be the case in Australia.

The remedies and preventives of Woolly Aphis are numerous. Lindley's Fruit-Free Wash, I have already mentioned. The use of the *Winter Majetin* and *Siberian Bitter Sweet* as stocks, is also mentioned by Lindley. Forsyth says that Sir Joseph Banks used spirits of tar laid over the parts affected. He adds that Salisbury recommends "that the roots of trees affected, be laid bare in the winter season, well washed, and left to the action of frost and the application of such things as urine, night soil, hog's dung, &c., laid around them in a moist state." The *Journal of Horticulture* pronounces paraffine oil, laid on with a brush, a complete remedy. It adds that the large roots must be uncovered, and also receive an application. The same

journal recommends petroleum as valuable for the same purpose.

Hot water, soap, and the like, are recommended by our American entomologists, but, like Captain Cuttle's proverbs, the difficulty lies in the application. Six or seven years since, I received a large number of specimen apple trees from a southern Illinois nurseryman, all more or less affected with the Aphid. As they were taken out of the boxes, before heeling them in, I dipped them in hot water as hot as it could be kept in the open air. When I planted the trees I dipped them in water which was made strongly alkaline by wood ashes. I think the cure was nearly or quite complete and should not much fear nursery trees affected where I could have the handling before transplanting. But to apply these remedies to orchard trees would be more difficult.

The *Horticulturist*, for April, 1875, says that "Von Hulle, a Belgian horticulturist, states that they grow nasturtions in their apple orchards and let them climb the trees to keep off the American Blight."

Having brought such data together as I found attainable, I trust that the matter may be farther examined into by our members in the future.

Respectfully submitted,

W. C. FLAGG,

Of the Committee.

Phylloxera Vastatrix, or Grape Gall-Louse.

The committee appointed at the last meeting of this Society to investigate the "mooted question" as to the nativity of the *Phylloxera vastatrix* of Planchon, have had no opportunity of studying the insect, except in our own vineyards and upon the wild grapes of the forests. Prof. Chas. V. Riley, of St. Louis, and a majority of his co-laborers in France, still hold to their original opinion, that this great pest of the vineyards of Europe is a native of America, and identical with the grape-leaf gall-louse, briefly referred to by Dr. Asa Fitch in his first report as State Entomologist of New York; also in subsequent volumes under the name of *Pemphigus vitifoliae*.

Those who have made the study of this and closely allied species a specialty, assure us that the leaf-inhabiting gall-louse, which does but very little injury to vines while confining itself to the foliage, is the same species as the one producing galls upon the small roots, causing the destruction of millions of vines in Europe, and more or less injury to the feeble growing varieties in this country.

It has been claimed of late that the insect under consideration is found upon our wild vines, far removed from cultivated vineyards, and if this be true, it tends to confirm the claims made that it is a native pest. However, it may be that the *Phylloxera Vastatrix*, like many other minute parasitic insects, is common to both continents, and only becomes numerous and destructive under certain favorable conditions.

While we do not desire to ignore the careful investigations of our specialists who have studied the habits of this insect, still we are inclined to think that there has been far too great willingness to accense America of sending a terrible scourge into the vineyards of Europe. If investigators in America are divided in their opinions in regard to the native habitat of this pest, they are certainly no worse than their co-laborers in Europe, because we find committees of scientists in France reporting that they find no evidence of its American origin.

Another claim which has been of late put forth that the failure of foreign varieties in this country is due to the prevalence of the *Phylloxera* is, we think, without foundation. Every horticulturist in the Northern States is probably aware of the fact, that the foreign varieties can be successfully grown, if a slight protection is given to the foliage and fruit in the shape of glazed sash or even sized muslin screens; the object being to prevent extremes of temperature, which cause mildew. If failures of the foreign varieties in America were really due to *Phylloxera* on the roots, then so slight a protection of the vine above ground would not save them.

The chairman fully endorses the opinions of his associates on this point, as the results appear to be nearly the same with foreign varieties whether cultivated in cold or warm climates, or whether the grape-louse is present or otherwise.

The results of the investigation of my associates south are herewith appended, as I have thought it best that each member of the committee should speak independently, their fields of operation and observation being somewhat remote and distinct.

A. S. FULLER, *Chairman.*

Results of Two Years' Examination of Grape Vines,

At Aiken, S. C., and at Fruitland, in Augusta, Ga., on the "Grape Phylloxera," by H. W. RAVENEL.

1874.

June 15th—Examined to-day, 4 Isabella, 1 Black July and 1 Warren (Herbemont Madeira) in my garden: all old vines. I could find no trace of in-

sect life, neither eggs nor young lice upon the rootlets, nor any effects of former ravages on the older roots.

June 17th—Examined the following in vineyard of Rev. J. H. Cornish, and with his assistance, viz: 5 Chasselas, 1 Muscat of Alexandria, 2 Catawba, 1 Pauline and 1 Isabella. These vines are from 12 to 15 years old, generally quite healthy, and the fruit, until a few days past, free of rot. The Warrens have been rotting lately. No trace of insect life on the young or old roots.

July 24th—Examined 2 Isabellas and 1 Warren in my own garden, and 1 Chasselas, 1 Muscat Alexandria, 1 Catawba and 3 Warrens in Mr. Cornish's vineyard; found nothing.

August 22d—Examined 2 Isabellas in my own garden; found nothing.

September 9th—Went over to Mr. Berekman's "Fruitland Nursery," near Augusta, Georgia, and made an examination of vines in various parts of his grounds, of several different varieties and under different modes of treatment. I had the benefit of Mr. Le Hardy's assistance and experience in all my examinations here. He had been in France the previous year and had seen the Phylloxera, and was familiar with its appearance and the effects of its ravages on the grape roots. In each case the whole vine was dug up carefully and the roots subjected to a close and scrutinizing examination. We could find no trace whatever of the insect, either in the egg or living state, nor the effect of their ravages in previous years upon the older roots. We took specimens from 7 different vineyards, some under cultivation and others thrown out for a year or two, as follows:

- 1 Israella, 7 years old, uncultivated for one year.
 - 1 Clinton, 12 years old, uncultivated for one year.
 - 1 Clinton, 3 years old, under cultivation.
 - 1 Catawba, 15 years old, thrown out of cultivation two years.
 - 1 Golden Clinton, 4 years old.
 - 1 Concord, 3 " "
 - 1 Wilder, 3 " "
 - 1 Nor'n Muscadine, 3 " "
 - 1 White Riesling, 3 " "
- } under cultivation.
- 1 Taylor, 4 years old, under cultivation.
 - 1 Alvey, 6 years old, not cultivated one year.

1875.

June 5th—Made an examination to-day of 2 Isabellas, 1 Warren, and 1 Black July vines, for Grape Phylloxera; found nothing.

June 11th—Examined at Mr. Cornish's vineyard, 1 Muscat of Alexandria, 1 Chasselas, 1 Catawba, 1

Isabella, 1 Black July, and 1 Warren; could find no traces of insect life; roots both young and old perfectly healthy.

June 15th—Examined the following grape vines at Mr. Schweiren's vineyard, situated in the lower part of Aiken:—1 Isabella, 1 Catawba, 1 Delaware, 1 Clinton, 1 Concord, 1 Riesling, and 1 Chasselas. These vines are about 8 years old (except the last which were only 2), healthy and vigorous, and in fine fruit; we could find no traces of insect life. The young and older roots were clean and healthy, and showed no ravages in previous years.

July 8th—Went over to Mr. Berekman's Fruitland Nursery, near Augusta, Georgia, and made examination of the following vines:

- 1 Clinton, 2 years old, under cultivation.
- 1 Clinton, 3 " " " "
- 1 Ives, 4 " " " "
- 1 Concord, 4 " " " "
- 1 Taylor, 5 " " not cultivated one year.

I could find no trace whatever of insect life. The roots of young and old are healthy, and exhibit no effects of former ravages.

The above are transcripts from my notes taken at the time the examinations were made. In the two seasons I have examined 50 specimens, comprised in 18 different varieties of grapes and in four separate localities. The soils of these four localities vary from a light and loose sandy soil (my own, on the borders of the "sandhill" region), to a firmer and more compact (Schweiren's in the lower part of Aiken), and a clay loam (Dr. Berekman's in Georgia).

I present the above facts as they have come under my own observation. I used in all these examinations a pocket glass of highly magnifying power, and saw nothing which I considered necessary to be put under the microscope. Had the insect been present in any form, either as egg or living animal, I could not have failed to detect it.

H. W. RAVENEL.

In addition to Mr. Ravenel's notes, I would submit the following:

Atlanta, October 27th, 1874.—Examined Goethe, Wilder, Lindley, Maxatawney, Concord, Ives, Delaware, Diana, Salem. Clinton—vines from 2 to 5 years old; in most vigorous growth and healthy; no trace of the insect. Soil a strong clay, deeply trenched and terraced, kept in perfect order.

October 27th—In a locality two miles from above, Norton's Virginia, Warren, Concord, Ives, Hartford Prolific, 6 to 8 years old, perfectly sound; Senasqua,

Croton, 3 years; very healthy and had produced a fine crop of fruit during the past summer. Soil clay, but deeply and carefully worked.

June 5th, 1875—At Redcliffe, S. C., the residence of Harry Hammond, Esq., examined Pauline, Black July, Warren, White Chasselas, several varieties of Muscat and Malvoisia: soil a very stiff red clay, very compact; vines planted in 1859-60; cultivated three or four years, then abandoned, no culture for eight years, during which time vines were much injured by wagons running over them; ground plowed and vines received a working in the winter of 1874-75, the first in ten years. Growth luxuriant and most healthy, some of the foreign vines having canes of the new growth from four to seven feet; fruit scattering, but healthy; no trace of Phylloxera. N. B.—The foreign vines are on their own roots.

August 12th—Received to-day from Mr. Hammond, thoroughly ripe and perfect bunches of Chasselas from above vines. Wood and foliage perfect, notwithstanding a most unusually dry and hot month of July.

June 7th, 1875—Examined at Sandhills, Augusta, Concord, Ives, Gothe, Wilder, Lindley, Maxatawney, Eunelan, Cynthia, Brant, Cornucopia, Canada, Senasqua, Croton, Catawba, Warren: vines from two to seven years old; soil almost pure sand, kept well cultivated and fertilized with annual top dressings of bone-dust and leaf-mould; growth moderate in most varieties owing to vines being closely planted and defective pruning; not a trace of insects. This vineyard is now yielding a heavy crop of perfect fruit.

July 30th—Examined a vineyard of a little more than one acre; vines trellised and kept in cultivation annually; vines four, six and eight years old. Catawba, Concord, Delaware, Diana, Wilder, Lindley; soil a compact whitish clay subsoil, commonly termed here crawfish land, top soil sandy, situation very low, and soil retentive of humidity but well drained; vines very luxuriant, fruit abundant, sound and not a trace of Phylloxera.

August 10th—Dug up to-day a vine of White Chasselas, planted in 1858; vine was injured several times and repeatedly broken; first growth of the year was broken off when it had attained six feet; grew off vigorously and set fruit on second growth; canes of latter six feet; very vigorous and healthy, and after submitting the rootlets to close investigation, failed to find a trace of insect; soil a rich, gravelly loam, two feet deep and subsoil stiff red clay.

From these notes it is evident that the presence of the Phylloxera is still unknown here; the vines examined at Sandhills had been received from various sources, north and west. Mr. Hammond's foreign vines were brought by him from the garden of the Luxembourg, Paris, in 1859. My foreign vines, of which I cultivated in 1860-61 nearly 400 varieties, came from various sources, some from Paris, Angers, Nice, Hungary, Crimea, and a large portion from Algeria. Not a trace of Phylloxera has ever been discovered on any of them; the failure of the fruit is due only to mildew, the vines remaining in full vigor even after years of neglected culture. The fact then remains well established, that the failure in the cultivation of foreign vines in the Southern States is not due to the attacks of the Phylloxera.

In the report of the committee of investigation upon the origin of the Phylloxera, published in 1874, it is stated that the introduction of the insect into France is not due to American vines, and in substantiating this, voluminous testimony of eminent grape growers is given.

P. J. BERCKMANS.

Augusta, Ga., August 13th, '75.

Report on the Seedling Grapes of Jas. H. Ricketts, of Newburgh, N. Y.

In accordance with the appointment at Chicago, by the President of the American Pomological Society, of a committee to visit and examine the new varieties of the grape originated by J. H. Ricketts, at Newburgh, N. Y., the committee, consisting of P. Barry of Rochester, Charles Downing of Newburgh, and J. J. Thomas of Union Springs, visited the grounds of Mr. Ricketts, on the 30th of September, and gave several hours attention to the collection, which consists of about one hundred sorts in bearing, and three hundred more which have not yet fruited. He has given his attention for about twelve years to raising new varieties by crossing, occupying all his spare moments from business to this object. Some of his new grapes are crosses wholly of native sorts, but most of them have been obtained by fertilizing the strongest and hardiest natives with the pollen of exotics. His object has been to secure the vigor and healthiness of native vines and on these to place the most delicious of foreign sorts. In this attempt he has certainly succeeded in a number of instances, so far as we could judge by a careful examination; although years of trial will be required to fix their permanent character and value. Mr. Ricketts regards the mode of obtaining new sorts by cross-fertilization, as the best and most certain way,

whether it be between those wholly native, or between natives and exotics; and to attempt the work in any other way would, in his opinion, be no better than for breeders of cattle to hope for success when working in the dark or entirely at random, and with no intelligent system for operation; and he thinks as much skill and judgment required in originating new grapes as in the successful breeding of animals.

The soil of his vineyard is a medium loam, possessing a moderate degree of fertility, facing the east and sheltered by hills on the west. All the vines are laid down without covering for winter, although most of them are regarded as quite hardy. But in common with others he finds the vigor of the vine better preserved by this partial protection.

The committee examined about twenty-five sorts with attention and care, as including the best and samples of the remainder, with the following results:

CROSSES WHOLLY WITH NATIVE SORTS.

Rose.—A cross of the Delaware with the pollen of the Iona; bunch four inches long, compact; berries three fourths of an inch in diameter, reddish purple; skin thick; pulp very tender; sprightly, very good; one of the earliest; fruited two years.

No. 214.—A cross of Concord with Iona; bunch six inches long, shouldered, rather compact; berries three-fourths of an inch in diameter, reddish, with some pulp; very good; rather late; handsome and promising; fruited the first this year.

No. 217.—Concord with Iona; bunch small; berries oval, black; skin thick; no pulp; very good in quality; season medium; first fruiting this year.

No. 218.—Clinton with Iona; bunch small, loose; berries medium, purple, sprightly, juicy and promising; this its first year.

No. 240.—A cross of Delaware with the Iona; bunch small; berries five-eighths of an inch in diameter, reddish; skin thick; flesh very tender and juicy, good; the vine with good, well-ripened wood.

No. 245 B.—Clinton with Delaware; bunch small, compact; berries medium, black, firm (not pulpy); skin very thick; high flavored; rather late. Bore the first time this year.

No. 245 A.—Clinton with Delaware; bunch small; berries half an inch in diameter, amber yellow, sweet, aromatic; promising in quality; early; the first year.

HYBRIDS OF AMERICAN AND FOREIGN SORTS.

Rickell's No. 1.—Isabella and Muscat Hamburg; bunch large, seven inches long, shouldered; berries

seven-eighths of an inch in diameter; skin rather thick but not tough; pulp tender; quality very good, not perfectly hardy; rather late. Although not of the highest flavor, promises to be a valuable sort.

Concord No. 1.—Concord fertilized with Black Muscat of Alexandria; bunch broad, loose; berries medium, purplish black; pulp tender, sprightly, vinous and aromatic, very good; season medium; has borne six or seven years.

Clinton No. 6.—Clinton with Muscat Hamburg; bunch six inches long, oblong, shouldered; berries medium, black; skin rather thin; pulp soft, high flavored and excellent; very strong wood and foliage; has fruited six or seven years; a fine grape.

No. 13.—Clinton with Muscat Hamburg; bunch six inches long, loose, shouldered; berries nearly medium, greenish white, juicy, melting; medium in quality.

No. 12 A.—Hartford with Muscat Hamburg; bunch shouldered, loose; berries oval, an inch long, black; skin thick and firm; flesh with some pulp; sprightly, very good. Has fruited some years.

No. 14.—Isabella and White Tokay; bunch seven inches long, moderately compact, shouldered; berries white, medium in size; skin thick; flesh with some pulp; hardly ripe; late; promises to be valuable, the vine being of strong growth and good foliage.

No. 22.—A cross of Clinton with Muscat of Alexandria; bunch heavily shouldered, over six inches long; berries white, nearly seven-eighths of an inch in diameter; skin thick; pulp tender; excellent in quality; rather late; a good keeper; altogether a valuable sort.

No. 71.—Hartford and Royal Muscadine; bunch moderate, loose; berries over three-fourths of an inch in diameter, white; skin rather thick; tender, melting, with a musky aroma, excellent; season medium; has borne four years.

No. 72 B.—Hartford Prolific and Rytan Muscat; bunch seven inches long, shouldered, rather loose; berries medium in size, black with conspicuous bloom; flesh with some pulp, vinous, good or very good; showy; vine strong, like Hartford Prolific.

No. 84 A.—Iona and Silver Frontignan; bunch six inches long, shouldered, rather loose; berries seven-eighths of an inch diameter, violet purple, with a solid but not tough flesh, melting; skin very brittle; very good in quality; good wood and foliage. One of the best, and worthy of special attention.

No. 96.—Concord and Golden Hamburg; bunch small and very compact; berries medium, black; skin thin; pulp tender; flesh sweet, not rich but pleasant; the first year of its bearing.

No. 157 D.—Concord and Golden Hamburg; bunch rather loose; berry medium, exceedingly tender; very early; past ripe; promising.

No. 207 A.—Concord and Allen's Hybrid; bunch compact; berries white, medium quite pulpy, good; a great grower.

No. 207 H.—Concord and Allen's Hybrid; bunch seven inches long, five wide, compact, somewhat shouldered; berries three-fourths of an inch in diameter, amber touched with pink; skin tender; pulp rather tough; flesh sweet, somewhat vinous; very good, handsome. The vine appears to be a good, healthy grower; second year of bearing.

Adelaide.—Concord and Muscat Hamburg; bunch shouldered, loose; berries oval, black, one inch long; skin thick, firm; flesh with some pulp; sprightly; very good; has borne several years.

Don Juan.—Iona and Gen. Marmora; bunch eight inches long; berries reddish purple, seven-eighths of an inch in diameter; skin thick; flesh with a soft melting pulp, sweet and vinous, very good; showy; rather late; has borne four years.

Imperial.—Iona and Sarbell Muscat; bunch six inches long, rather compact; berries three-fourths of an inch in diameter, greenish white; flesh very tender, juicy, vinous; sprightly; not very high flavored, but pleasant and agreeable. Vine with strong foliage and well ripened wood.

Medora.—Putnam and Duchess of Buccleugh; bunch oblong, not shouldered, five inches long, rather compact; berries five-eighths of an inch in diameter, dark purple, very sweet, melting, excellent; early.

Quassar.—Clinton and Muscat Hamburg; bunch five inches long, rather loose, shouldered; berries less than three-fourths of an inch in diameter, black; skin thick; flesh tender, sprightly, vinous, with a good but not high flavor; bears well and has many good qualities.

In closing this report, the committee desire to express their conviction that the experimental labors of Mr. Ricketts, so carefully, skilfully and successfully conducted, promise contributions to American Pomology of the most important character. Respectfully submitted,

J. J. THOMAS,

CHAS. DOWNING,

P. BARRY,

Committee.

REPORTS OF STATE FRUIT COMMITTEES.



Report of the General Fruit Committee.

To the President and Members of the American Pomological Society:

Gentlemen—On behalf of the General Fruit Committee of your society, I beg leave respectfully to report, that, on the first of April last, I addressed a circular letter (a copy of which is annexed) to the chairmen of the several State and Territorial Committees, requesting them to organize and take the necessary steps to have their reports prepared for this meeting. Later in the season I addressed the same circular to them again, to keep the matter before them. In the States of Iowa and Texas the chairmen died shortly after the meeting of 1873; in some other cases the chairmen declined to act on account of ill health, absence or other causes. In all these cases substitutes were appointed, and I hoped to present to you on this occasion a more comprehensive report than any of its predecessors. In this my hopes are not fully realized, yet I think the report will be found of great value.

Twenty-five or twenty-six States or Territories have reported, and their reports are herewith submitted. Many of the States which do not report at this time made extended reports two years ago. The changes in the Catalogue, recommended in these reports, will all be duly made.

It affords me great pleasure to state that from all parts of the country, where fruit culture has been attempted, a hopeful progress is reported, notwithstanding all the drawbacks of climates, seasons, insects, diseases, &c. In some cases the progress is slow but steady, in others rapid. State and local societies have been organized very generally, and these are doing a good work. They are the most valuable aids to this Society in perfecting the great work it has in hand. Several of the Western States, Michigan, Indiana, and others, appreciating the importance of fruit culture and pomology among their industries, make annual appropriations to enable them more effectually to carry out their plan of usefulness. Michigan merits special mention in this respect. Her Pomological Society is one of the most energetic and intelligent in the country. The State shows that she appreciates the importance of its labors, and she promises to be one of the foremost fruit-growing States in the Union.

Nebraska, one of our young States, says: "Our State is rapidly developing its resources for fruit culture, and we hope the time is not far distant when it will be one of the best fruit-growing States in the Union."

Texas is making great progress. Exhibitions held there this past Summer show an extraordinary interest in fruit culture. Florida too, that we have hitherto not heard

from, has organized a Fruit Growers' Society, and shows a disposition to develop her peculiar fruit-growing resources. All over the Southern States fruit culture is attracting unusual attention.

It is needless however to particularize, for the progress is general over our entire country wherever soil and climate give any promise of success.

Respectfully submitted,
P. BARRY, *Chairman.*

AMERICAN POMOLOGICAL SOCIETY.

To
Chairman Fruit Committee for State of

Dear Sir—At the last meeting of the American Pomological Society, held in the City of Boston, September, 1873, you were elected Chairman of the Fruit Committee of your State. The duties of this committee are thus defined in the By-Laws of the Society:

"State Fruit Committees, consisting of five members each, for every State, Territory and Province represented, and a general chairman over all, shall be appointed biennially; it shall be the duty of the several State Fruit Committees to forward to the general chairman, one month before every biennial meeting, State Pomological Reports, to be condensed by him for publication."

It has been customary for the State Fruit Committees to appoint their associates, and you are now respectfully requested to organize your committee at the earliest moment practicable, by selecting the most competent and trustworthy persons, in different sections of your State, to aid you in collecting the information desired by the Society. This information you will arrange in the form of a report, and transmit to me as early as the 20th of August next, if possible, that I may be able to present the Report of the General Fruit Committee on the opening of the session, which is announced to be held in Chicago, Ill., on September 8th, 9th, and 10th, 1875.

The nature of the information sought for in your report can be ascertained by reference to the published Transactions of the Society, and may be stated briefly as follows:

1. What *species* of fruit, as Apple, Pear, Peach, Plum, Cherry, &c., &c., are grown in your State successfully?
2. What *varieties* of these fruits have proved to be the best adapted to your State, and of the greatest value? The degrees of merit should be stated according to the scale adopted in arranging the Society's Catalogue, viz: Those worthy of cultivation designated by one *; those of great superiority and value, two **; those recently introduced and promising, a dagger, †. In your report under this

head you will note the changes, if any, that should be made in the catalogue, as it now stands for your State.

3. Synonyms, or the various names under which the same variety is known or is cultivated in your State.

4. What Insects and Diseases are injurious to fruits and fruit trees, and what remedies or preventives have been successfully applied?

5. The kinds of soil and situation best adapted to the different species of fruits. The best system of pruning and training; cultivation or treatment of the soil among fruit trees; gathering, packing, keeping, and marketing fruits, and any interesting particulars on the subject within your reach.

The Society does not wish to impose great burthens on its committees, and therefore answers to the 4th and 5th series of questions may be omitted where circumstances may render it difficult or impossible to give them.

Answers to 1, 2, and 3, are necessary to enable the Society to extend and perfect its work.

If you find that you will be unable to discharge the duties of Chairman of your State Fruit Committee, you will please notify the President as soon as possible after the receipt of this circular, and mention the name of the person, in your judgment, best qualified to perform the service.

Asking your kind coöperation in this important work,

I am, truly yours,

P. BARRY,

Chairman General Fruit Committee Am. Pomological Society.

Rochester, New York, April 1, 1875.

Report from Nova Scotia.

This report consisted of a revision of the catalogue of fruits for that province, signed by the following standing Fruit Committee:

C. C. HAMILTON, M.D., Port William Station P. O.,

President Fruit Growers' Association.

A. H. JOHNSTON, Falmouth.

C. E. BROWN, Yarmouth.

R. W. STARR, Port William Station.

AVARD LANGLEY, Paradise.

Report from Quebec, Canada.

The Fruit Growers' Association, of Abbotsford, issued in January, 1875, two hundred and ninety circular letters of inquiry to gather the varied experiences of the different parts of the Province. Replies were received from, or correspondence entered into with, or (which is better) discussions held with over one hundred persons exclusive of the residents of Abbotsford, and from the report published upon information obtained—information mostly from that part lying between 45 and 45½ degrees North latitude—we venture to report as follows:

APPLES.

SUMMER—Two best varieties:

1. *Duchess of Oldenburg*.—Most satisfactory.

2. *Red Astrachan*.—Pretty generally satisfactory.

Of others, *Tetofsky*.—Promising to be valuable where *Red Astrachan* does not thrive.

White Astrachan.—Valued for its hardiness.

Peach, so called (not the *Peach*, *Irish Peach*, nor *American Peach* of Downing), hardy and productive, and, though second rate in quality, valuable for near market.

Early Harvest.—Usually quite short-lived.

FALL.—Two best varieties:

1. *St. Lawrence*.

2. *Alexander*.

King of the Pippins, *Keswick Collin*, *Harthornden*, and *Kentish Fill-basket* also valuable.

EARLY WINTER:

Fineuse.—First, without a rival.

Bourassa.—Tree not always healthy; variable as to productiveness; fruit no longer salable at extra prices.

Late Strawberry.—Though short-lived, valuable.

LATE WINTER.—The best two varieties we are unable to name.

Golden Russet of Western New York.—Pretty hardy and rather productive.

White Catalpa.—Possibly a seedling. Hardy and productive. Fruit medium, good; its fault being its color; keeps till March.

Canada Babin.—Probably a seedling. Tree vigorous and a good bearer. Fruit medium, red, good and salable; keeps till May.

Blue Pearmain.—Not generally productive.

Ben Davis.—Promising to be very valuable.

Jonathan.—Promising to be hardy and productive.

Northern Spy.—Accounts most contradictory, being planted for profit on exposed Northern slopes, and in other and more sheltered localities. Thoroughly condemned by nurserymen and orchardists.

Pomme Grise.—Generally reported as a poor bearer, and fruit not salable at such prices as to warrant its being planted for profit.

Talman's Sweet.—Fruit not salable.

Ribston Pippin.—Only sometimes favorably reported.

Yellow Bellefleur.—Often satisfactory.

Babin, *Rhode Island Greening* and *Spitzenburg* have in many scattered instances done well in sheltered spots, yet on the whole are most thoroughly condemned.

PROFIT.—Of nine districts into which we divided our answers, *Fineuse* was placed first on the list by four, *Red Astrachan* first by three, and in the remaining two, *Fineuse* and *Red Astrachan* are a tie. Next to these come *Duchess* or *St. Lawrence*, then *Alexander*, followed by some Winter variety.

CRABS.

Our statistics give us in order of preference, *Montreal Beauty*, *Transcendent*, *Queen's Choice* (even more reliable than the above in unfavorable places), *Red Siberian*, *Montreal Warren* (this variety is grown in the United States and in Province of Ontario under name of *Montreal Beauty*), and *Hyslop*.

PEARS.

This differs from our report on Apples as being a digest of the experience of but a few, and therefore to be received with caution.

We premise that shelter by hedges, &c., is most desirable, if not necessary; trees must not be forced in nursery nor in orchard, until in bearing; mulching in the Fall necessary. Only upon these conditions can the following be recommended, and that not for profit.

Five best varieties: *Flemish Beauty*, s.*; *Belle Lorraine*, s. and perhaps d.; *Glut Moreau*, d. and s.; *Lawrence*, s. and d.; *White Doyenne*, s. and d. The last four are not named in order of preference.

The following also deserve special mention: *Beurre Diel*, s. and perhaps d., reliable; *Bouchretien*, s. and d., perhaps not as good as formerly; *Bartlett*, s. and d., sometimes tender; *St. Ghislain*, s. and d., very hardy; *Napoleon*, d.; *Onondaga*, *Gansol's Bergamot*, s. and d.; *Louise Bonne de Jersey*, d.; *Houell*, *Oseroy Beurre*, s., very hardy; *Osbund's Summer*, *Rostizer*, *Knyssing*, *Clapp's Favorite*, promising to be very hardy and valuable.

PLUMS.

Best twelve varieties not in order of preference: *Lombard*, perhaps the most satisfactory, *Pond's Seedling*, *Washington*, *Imperial Gage*, *Becker's Gage*, *Brabshaw*, *Cox's Golden Drop*, *Prince's Yellow Gage*, *Green Gage*, *Nota Bene* (raised by the late Henry Corse, of Montreal), *Dictator* (Corse's) and *Admiral* (Corse's).

The following are also favorably reported: *Dunson*, *Reine Claude de Baray*, *Yellow Egg*, *McLaughlin*, *Jefferson*, *B'n. Gage*, and *Purple Favorite*; also *Blaue Orleans*, *Yellow Orleans*, and *Prairie*, of which thousands of trees are grown from suckers near Quebec.

The above varieties live twelve or fifteen years, usually not longer, and bear more or less frequently according to variety and favorableness of position, showing that we have not the species adapted to our climate.

CHERRIES.

The common kind under the names of *Early Richmond*, *Kentish*, &c., is usually grown. *English Morello* and *May Duke* have done well in a number of instances.

GRAPES.

Winter covering necessary.

Best four kinds for general cultivation: *Hartford Prolific*, *Adirondac*, *Creeching*, *Delaware*.

The following also deserve attention: *Concord*, in warm situations only; *Eumelan*, well spoken of after a two years limited trial; *Rebera*, fine under special care; *Massasoit*, *Salem*, *Allen's Hybrid*, *Sweetwater*, *Agaram*, *Lindley*, *Rogers' No. 33*, so valuable with one cultivator as to deserve mention. Also *Isabella*, *Diana*, *Union Village*, *Diana Hamburg*, *Buck Cluster*, and most probably *Chasselas de Fontainebleau*, have ripened regularly in the hands of a few skillful cultivators.

CURRANTS.

In the Province of Quebec as elsewhere.

GOOSEBERRIES.

Near Montreal, both on heavy clay and on gravel by no means clayey, there are places where the English varieties do not mildew. We have seen *Whitesmiths*, thirty years planted, which have never mildewed, still bearing good crops, the lower branches lying upon the gravelly ground. On heavy clay, we find *Crown Bobs* and *Whitesmiths* yielding fine crops on bushes both trimmed and untrimmed. *Houghton* flourishes everywhere, and though not salable in Montreal

is elsewhere. *Downing* proved less productive than *Houghton*, and its cultivation was given up on that account.

RASPBERRIES.

Red.

Red Antwerp is most grown, though some prefer *Franconia*, *Festloff* or *Knecht's Giant*.

Clark.—Hardy and productive and becoming a favorite.

White.

Brinkh's Orange.—Perfectly hardy on soils not over rich

White Antwerp.—Not esteemed as highly as the above.

Golden Thornless.—Hardy and productive, and may prove profitable.

Black.

DeLittle.—Perfectly hardy.

Manmoth Cluster.—Hardy enough in soils not over rich.

BLACKBERRIES.

Kittling, *Dorchester* and *Lorton* kill almost to the ground, even when covered by a snow-drift. *Early Wilson*, hardier than the above, but most unsatisfactory. *Sable Queen*, from limited trial, seems at least as hardy as *Early Wilson*.

STRAWBERRIES.

For market, *Wilson*, one opinion to the contrary—one who has five acres on bituminous shale prefers *Jacunda* and *Burr's New Pine*. For home use, *Wilson* and *Triomphe de Gand*.

N. COTTON FISK, }
JOHN M. FISK, } Committee.
JOSEPH ROACH, }

CHARLES GIBB, *Corresponding Secretary*

Report from New Hampshire.

P. BARRY, Esq.: Dear Sir—I can say but little in this report that is not contained in the one submitted to you two years ago. From the reports received this season I hardly know how to make any change, and have but little to add to it.

APPLES.

For Central and Northern New Hampshire I would give two stars to the following apples: *Red Astrachan*, *Williams' Favorite*, *Bonomi*, *Duchess of Oldenburg*, *Porter*, *Foundling*, *Fameuse*, *Mother*, *Milding*, *Maiden's Blush*, *Jewett's Fine Red*, *Talman Sweet*, and *Jonathan*. To the following varieties one star: *Early Sweet Bough*, *Primate*, *Gravenstein*, *Huebut*, *Granite Beauty*, *Coyseell*, *Ramsdell's Sweet*, *Minister*, *King of Tompkins County*.

The *Baldwin* has been, and will continue to be, more cultivated for a market apple than any other, perhaps than all others together; still I would let it remain in the Catalogue with one star for New Hampshire, as it is. Young trees are tender; older trees soon decay from excessive bearing. As the cultivation of this apple is so much desired, I would suggest the continual planting out for orchards of hardy native stocks, to be grafted in the limbs when some twelve or more years old.

I have received favorable reports of the *Westfield Seek-no-further*. In some sections it is preferred to the *Baldwin* for a market apple.

The *Sopatrinc*, as it is called here, has been more cultivated for a summer apple than the *Williams*. The latter

* s. standard; d. dwarf.

requires a rich, deep, and moist soil, and then it is magnificent. The *Sopsarine* will often do well in soils where the *Williams* fails. In several reports sent me the *Sops of Wine* is highly recommended; I think the *Sopsarine* is meant. The *Sops of Wine* I have cultivated corresponds with that in Downing's (A. J.) "Fruits of America," a small apple, with red stained flesh, that will do for an amateur's collection, but otherwise of not much account. Is this (the *Sops of Wine*) the apple in the Society's Catalogue? [*] The description there given, except its season, resembles more the apple I have always called the *Sopsarine*.

PEARS.

Of Pears I would give the following varieties two stars: *Doyenne d'Été*, *Rostiezer*, *Flemish Beauty*, *Paradis d'Automne* and *Laurence*. If I were planting an orchard of Pears nine-tenths should be *Laurence*.

It is much to be regretted that the *Flemish Beauty* pear is liable some years to grow scabby and crack. This is its only defect. Aside from this it possesses more good qualities than any with which I am acquainted. I am very unwilling to discard it. It blighted somewhat last year. This year, thus far, they are fine in my locality. Here in New Hampshire on land recently cleared of wood, I think it will yet do well.

The *Bourc d'Amanlis*, though generally discarded and only occasionally starred in the Catalogue, is very valuable here.

Chapp's Favorite is but little known, as yet. It is very hardy and makes a handsome, rich looking tree. The fruit is large and good and will supply the place of the *Bartlett*, which is too tender for this climate.

GRAPES.

Of Grapes I would give two stars to the *Concord*, *Delaware* and *Hartford Prolific*. *Creeling* has been reported to me as very valuable.

These three species of fruits, the Apple, Pear and Grape, together with the Strawberry, are the only fruits that can be cultivated in this cold climate with reasonable promise of success.

Respectfully submitted,

JOHN COPP.

P. S.—I wish here to correct an error. The fault is probably my own. I am reported as saying, while the *Flemish Beauty* Pear was up for discussion at the last session: "It does well in Southern and Central New Hampshire, further South it occasionally cracks." What I intended to say was just the reverse. It does well in Central and Northern New Hampshire—further South it occasionally cracks.

Report from Massachusetts.

No report having been made from this State for some years previous to 1873, the report published in the Proceedings of the Society for that year was made quite full, with the hope of giving in a very condensed form a general view of the pomology of the State. The two years which have since elapsed have not shown any reason for changing any of the opinions expressed in that report, but have, on the contrary, confirmed them. The Committee do not think it worth while to repeat those statements on the present occasion, however correct they may be, but would simply place on record some of the more important points ascertained

[* Yes.—Committee.]

during the last two years, referring for further information to the report above mentioned. A large addition to the list of varieties desirable for general cultivation must not be anticipated, for the standard here is now so high that few new varieties can meet it.

STRAWBERRIES.

The *Charles Downing* grows in estimation on account of the ease with which it is cultivated, and its fair quality. It succeeds best on light soils. *President Wilder*, on the contrary, is best adapted to heavy soils, and is increasing in cultivation, especially where a fruit of fine appearance and quality is wanted for family use. Of Mr. Moore's Seedlings referred to in our last report, No. 20, or *Caroline*, is believed to be the best. Large, roundish, irregular, the largest specimens cockscumbed but not wrinkled; color, crimson, polished; flesh scarlet next the outside, paler at the centre, a little open at the heart; flavor rich and sprightly; foliage large and robust; footstalks long and stout; medium season or a little later. *Grace*, another of Mr. Moore's Seedlings, is large but not quite as large as *Caroline*; very irregular in form, furrowed, often with a projecting point on one side; seeds considerably sunken; color rich, polished crimson, paler towards the summit; flesh white, except next the outside, solid, rich, juicy, and fine flavored; foliage dark green; season same as that of *Caroline*. Mr. Moore also exhibited the *Belle*—very large, of dark color and good quality.

CHERRIES.

We have had two more good crops of this fruit. The seedlings mentioned in the last report as resembling *Dourner*, though of fine quality, not showing any decided superiority to that variety, are not recommended for introduction.

RASPBERRIES.

Besides the kinds named in our last reports the *Herstine* and *Standers* have been fruited and promise well, though not exhibiting any marked superiority over the *Kuerell's Giant* and other older varieties.

PEACHES.

The last two seasons the peach buds have been uninjured and consequently there have been good crops of this fruit. Many new seedlings have been exhibited, but as usual they are not sufficiently distinct from the older varieties. Mr. J. T. Foster, who originated the Foster's Seedling, showed another seedling, the *Laura*, which fruited for the first time this season. It is in the way of *Hale's Early*, and if it proves less liable to rot than that variety may become valuable.

PLUMS.

The season of 1874 was very favorable to this fruit, but that of 1875 much less so. We may add to the varieties recommended in the last report that old favorite, *Smith's Orleans*.

APPLES.

As usual we have had a good crop in the "even year," 1874, and a small crop in the present "odd year." The canker worm has been very destructive, but the old preventives of a band of tar or printer's ink, or a trough of oil, are effective if faithfully applied. We may add to the kinds mentioned in the last report as desirable, the *Leicester Sweet*, which is esteemed one of the best winter sweet apples in Worcester County, where the culture of the apple

succeeds better on the whole than in the Eastern part of the State. By the *Washington* of the last report is meant the *Washington Strawberry*. We may add to the varieties there recommended the *Mother*, especially as an apple of high quality for family use.

PEARS.

The crop of Pears has been excellent this year and last. The present season many fine specimens have been shown, and it has been particularly favorable to the *Seckel* and *Beurre Hardy*. The *Clapp's Favorite* in the grounds of the originators has shown increasing proofs of value, two hundred and fifty bushels having been produced from one hundred young trees. When picked in season it brings a higher price in the market than the *Barthlett*, and no difficulty whatever is found on account of rotting at the core, but its beauty is a great temptation to leave it too long on the tree, when, like most early pears, it goes first at the heart. *Beurre d'Anjou* also continues to increase in popularity. In our last report we spoke of the inferior quality of *Beurre Clairgeau*, but we would now add that this is most noticeable on strong, moist soils, and that on a warm rich soil its color and quality will be far superior. *Goodale* has been tested by several growers, and though it cannot be classed above "very good," is of large size and the tree is vigorous and productive.

Among the many seedling Pears raised by the Messrs. Clapp several give promise of much value. No. 22, which we have spoken of before, maintains its excellent character. It is decidedly best in quality, and with its beautiful, clear lemon yellow color, without a stain of red or russet, were it not sometimes irregular in form, would be one of the most beautiful of all Pears. Ripe in October and November, keeping a long time. No. 107 is very large, in form and color like *Barthlett*, tolerably melting, sweet and good flavored. It has been pronounced by the Fruit Committee of the Massachusetts Horticultural Society very good in quality; ripe November 1st. The tree is a thrifty, erect, vigorous grower. No. 64 is also similar in form, size, and color to *Barthlett*. It was shown in April, having kept well and sound at the core. Though not melting it was juicy and was thought to promise well as a very late kind. No. 65 is above medium size, broad obtuse turbinate; dull yellowish green with a brownish red cheek, flesh greenish white, fine grained, melting, buttery, sprightly and rich. In texture and aroma it resembles *Beurre d'Anjou*, and is supposed to be from a seed of that variety; ripe early in October. No. 125 is above medium size, roundish turbinate, skin clear yellow, without blush, dotted and traced with thin russet; flesh white, very sugary, moderately juicy. Very good. First of October. Another, to which the name of *Harris* has been given, is in shape and color very much like *Beurre Hardy*. It is not quite so large but is superior in quality and ripens at the same time.

Mr. Asahel Foote, of Williamstown, who has been diligently engaged in raising seedling fruits, exhibited at the Boston meeting of the Society in 1873, several varieties which have been further tested since. The *Foote's Seckel* has been highly commended by eminent pomologists to whom specimens have been sent. It strongly resembles the old *Seckel* from which it was raised, but is rounder and more flattened. Mr. Foote states that it is an abundant bearer and has a great advantage over the parent in its re-

markable uniformity of size. The *Fall d'Arcumberg* is of medium size, roundish, flattened; dull yellow, with thin russet and a brownish red cheek. It has much of the spirited flavor of the *Beurre d'Arcumberg*, but is not handsome enough to take a place in the list for general cultivation. Mr. Foote has also raised a seedling apple from the *Northern Spy* which resembles the parent in form, but in color and flavor is more like the *Hubbardston Nonsuch*.

The President of the Society has also raised numerous seedling pears, some of which we have had the opportunity to taste. Among these may be mentioned *Eddie Wilder*, of full medium size, yellow, ripening in October, and in quality rated from very good to best. *Mina Wilder*, ripening at the same season, is also very promising.

GRAPES.

The last two seasons have both been very unfavorable for native grapes, that of 1875 particularly, being cold and wet, with early frosts in Autumn. *Moore's Early*, one of the seedlings raised by John B. Moore, mentioned in the last report, has taken the first prize in both years as the best early grape. It is much like the *Concord*, which is probably the parent, but decidedly earlier, and promises well for the Northern limits of grape culture. The berry is larger than *Concord* and the quality fully equal. The skin is of about the same thickness. *Rogers' No. 39*, as tested by President Wilder, is considered by him the most valuable of all the Rogers grapes. It is a black grape, ripens early, and though entirely unprotected has never received the slightest injury from the winter. Mr. Wilder has also fruited the *Champion*, which proves an abundant bearer and earlier and hardier than any other grape cultivated by him. The pulp is softer than that in the average of native grapes, and it is of fair quality. We alluded two years ago to the seedling grapes of Mr. E. W. Bull, the originator of the *Concord*, as giving promise of value, particularly some of the white varieties. These have continued to maintain their promise, though none have yet been put upon the market. Mr. George Haskell, of Ipswich, has for several years been engaged in hybridizing the grape, and has produced a large number of varieties, among which are several of excellent quality. Of six varieties presented by him the present season, five were entirely free from the peculiar foxy flavor of the native grape.

We have much pleasure in appending the following valuable notes on apples, by O. B. HADWEX, President of the Worcester County Horticultural Society.

ROBERT MANNING,
For the Committee.

REPORT ON APPLES IN CENTRAL MASSACHUSETTS.

Worcester County, occupying the central portion of the State, and lying within the borders of the great fruit growing belt stretching from the Atlantic toward the Pacific slope, is, both in soil and climate, especially adapted to the growth of the apple, which was cultivated here at the beginning of the reign of George III, many trees which were growing at that time being still in existence. Many sorts of apples have had their origin here that are approved wherever grown. Among these the *Hubbardston Nonsuch* had its origin in the town of Hubbardston; the original tree is still in existence. Few apples rank higher in its season,

or thrive in a wider range of country, bearing large crops of very merchantable fruit.

The *Mother* apple, which originated in the town of Bolton, is one of the high aromatic flavored apples, so much sought as dessert fruits; the tree is but moderately vigorous but bears abundant crops in the even years.

The *Holden Pippin* (or *Fall Orange* of Downing) originated on the farm of Capt. Samuel Hubbard, in the town of Holden. The tree at the present time is about one hundred and twenty years old, and although the trunk is somewhat decayed, bore the present year (1875) six to eight bushels. It is a strong, vigorous, upright grower, and bears abundant crops in alternate years, of apples which have proved by long continued use to be among the best for the dessert, and especially excellent for culinary purposes. Its season is from September to December.

The *Washington Royal*, or *Palmer Greening*, has as many desirable qualities as any apple, not excepting the once famous *Newtown Pippin*. It originated on the farm of Joseph P. Hayward, in Sterling. This apple is regarded in the neighborhood where it is grown, as of the highest excellence, both for the table and for cooking, and commands a much higher price in market than other sorts. The tree is of vigorous growth and good habit, and bears annual crops. This variety is extensively grown in the immediate neighborhood of its place of origin, but has not been widely disseminated. It is recommended by the Worcester County Horticultural Society as worthy of cultivation.

The *Sutton Beauty*, *Worcester Spy*, *Fannulling*, *Washington Strawberry*, *McClellan*, as well as the *Tetofsky* and *Duchess of Oldenburg*, are often exhibited at the rooms of the Worcester County Horticultural Society, and are regarded with great favor.

The crop of apples for the year 1874 was one of almost unprecedented abundance; it being the "even year," and every tree bearing full, the supply was greatly in excess of the demand, and thousands of bushels were fed to stock, which relish apples as well as do the human race.

The crop the present season (1875) is but a partial one, the odd year Baldwins coming to the rescue from an almost entire failure.

The varieties which are very generally approved by cultivators hereabouts are, for Summer, the *Red Astrachan*, *Williams' Early Red*, *Duchess of Oldenburg* and *Sweet Bough*. For Autumn, the *Gravenstein*, *Porter*, *Troody Queen*, *Hubbardston Nonsuch*, *Coyseell*, *Maiden's Blush*, *Pumpkin Sweet*, *Island's Spice*. For Winter, the *Baldwin*, *Rhode Island Greening*, *Yellow Bellefleur*, *Ladies' Sweet*, *Loicester Winter Sweet*, *Roxbury Russet*. Almost every town has some apples of decided merit, which have not been brought into general cultivation or notice, but seem to thrive well and bear abundant crops, and often, if more generally cultivated, would prove valuable acquisitions to the general list.

The depredations of insects are a serious discouragement to the orchardist, and appear to be on the increase. No very effectual means are used to prevent their ravages. Some growers successfully contend with the tent caterpillar and the canker worm and keep them in check, but the curculio and codling moth have almost undisputed sway, and annually render worthless thousands of barrels of fruit. It may be well to state that where orchards have formerly been stripped of their foliage for a number of consecutive years, consequently bearing no fruit, since the disappear-

ance of the canker worm these orchards have borne large crops of fair and sound fruit, the other insects seeming to have been starved out, or abandoning the orchards, and we may conclude that insect can sometimes contend with insect more effectually than man can do.

O. B. HADWEN.

Worcester, Mass.

Report from Connecticut.

P. BARRY, Esq.: Dear Sir—Please receive the following list of fruits for Connecticut. All species common to temperate climates are grown successfully in Connecticut, many of them with marked success.

They embrace the Apple, Pear, Peach, Plum, Cherry, Quince, Gooseberry, Grape, Currant, Blackberry, Raspberry, Strawberry and Cranberry.

LIST OF FRUITS.

APPLES.

Apples for general culture in the order of ripening:
One Star.—*Gravenstein*, *Fall Pippin* or *Golden Pippin*, *Roxbury Russet*.

Two Stars.—*Red Astrachan*, *Early Harvest*, *Sweet Bough*, *Golden Sweet*, *Porter*, *Fumuse*, *Hubbardston Nonsuch*, *R. I. Greening*, *Baldwin*.

Dagger.—*Hartford*, *Ladies' Sweeting*.

Local, or partially tested for special purposes:

One Star.—*American Golden Russet*.

Dagger.—*Chenango Strawberry*, *Primate*, *Coyseell's Pearmain*, *Baker*, *Evel*, *Yellow Bellefleur*, *Pack's Pleasant*, *Burnham Sweet*, *Green Sweet*, *Belden Sweet*.

PEARS.

One Star.—*Doyenne d'Été*, *Osband's Summer*, *Rostiezer*, *Darborn's Scilling*, *Sevan's Orange*, *Louise Bonne de Jersey*, *Burn Rose*, *Beurre Clairgeau*, *Winter Nelis*, *Vicar of Winkfield*.

Two Stars.—*Clapp's Favorite*, *Barlett*, *Belle Luerative*, *Sokol*, *Sheldon*, *Beurre d'Anjou*, *Lawrence*.

PEACHES.

One Star.—*Croftford's Late*.

Two Stars.—*Trout's Early*, *Large E. York*, *Old Miron*, *Croftford's Early*.

Dagger.—*Hee's Early*, *Snow Peach*, *Yellow Rareripe*.

CHERRIES.

One Star.—*Early Purple Gaigne*, *Early Richmond*, *Black Eagle*, *Ellou*, *Gor. Wool*, *Belle de Choisy*, *Rockport Bigarreau*, *Black Bigarreau*.

Two Stars.—*Coe's Transparent*, *Black Tartarian*, *Dorner's Late Red*.

PLUMS.

One Star.—*Lombard*.

Two Stars.—*Green Gage*, *Imperial Gage*, *Smith's Orleans*, *McLaughlin*, *Coe's Golden Drop*.

QUINCES.

Apple, *Pear*.

GRAPES.

One Star.—*Delaware*.

Two Stars.—*Hartford Prolific*, *Concord*.

Dagger.—*Lee's Scilling*.

CURRENTS.

La Versailles, Cherry, White Grape.

RASPBERRIES.

Naomi (true), Clark, Brinkley's Orange, Mammoth Cluster.

STRAWBERRIES.

Two Stars.—Wilson, Chas. Downing.

Dagger.—Col. Cheney, Russel, Monarch of the West, Triumphe de Gaul.

T. S. GOLD,
P. M. AUGUR,
T. B. WAKEMAN,
E. HOYT.

Committee.

Report from New York.

The following changes in the Catalogue have been recommended for New York. The varieties named below to have two stars instead of one.

APPLES.

Hubbardston Nonsuch, Jefferis, Mother, Wagener.

PEARS.

Beurre Giffard, Clapp's Favorite.

PLUMS.

Bradshair, Coc's Golden Drop, Prince Englebert

CHERRIES.

Bigtree de Mezel, Black Tartarian, Gar. Wood

PEACHES.

Crofton's Favorite, Crawford's Early, Crawford's Late, Early York, Hale's Early.

GRAPES.

Coward, Delaware, Hartford Prolific, Wilder.

CURRENTS.

Cherry, Versailles, White Grape.

QUINCE.

Red's Seedling, or Mammoth.

STRAWBERRIES.

Triumphe de Gaul, Wilson's Albany.

RASPBERRIES.

Orange.

To be added as promising well.

PEARS.

Sourcrair du Congres.

PEACHES.

Beatrice, Louise, Rivers.

Fruit culture is making fair progress throughout the State, especially as regards the Apple. In the Western counties bordering on Lake Ontario the planting of Apple orchards is more active than it has ever been. Grape culture is hardly holding its own.

Pear blight has been more destructive during the summer of 1875 than for many years past, and may somewhat retard Pear planting.

Plum culture is receiving increased attention in the Hudson River counties. There is a marked improvement in the management of orchards, but it is still very defective. More care is given to packing and preparing fruits for market and all the details of the business are become better understood. Fruit growing, as a special branch of industry, is attracting more attention than ever.

NEW VARIETIES.

There are none known to the Committee sufficiently tested to be admitted into the catalogue. The Seedling Grapes of James H. Ricketts, of Newburgh, promise to yield some valuable sorts. A special report on them will be found in the proper place in this volume.

Respectfully submitted for the Committee,

P. BARRY.

Report from Michigan.

WHITEHALL, Mich., Aug. 28, 1875.

P. BARRY, Esq., *Chair'm Gen'l Fruit Committee American Pomological Society, Rochester, N. Y.:*

Dear Sir—The seasons of 1873 and 1875 in Michigan have been of more or less discouragement to her fruit growers in proportion to the hardness of the sorts in cultivation, the care and judgment used in mulching, cultivation, &c., and the locality of the plantation as regards protection from cold and winds. It is to be feared that the causes which have created disaster in many cases will not be investigated sufficiently to prevent a general discouragement of the pursuit, thereby losing much of the benefit which so severe a lesson might be to future operations, and yet there is enough of the Yankee in our make-up as a people to furnish groundwork for the belief that in a few short years we shall forget that "we were ever whipped" by either "Jack Frost," drought, or both combined, and go on and plant again too tender sorts only to see them mown down in their prime. It is partially with this view of the case that I suggest changes (marked in green pencil) in the rating of some of the sorts in the enclosed report of the Michigan State Pomological Society's Committee, which, with the communication, explains itself.

The Horticultural interests in our State are rapidly progressing to a front rank in the valuable industries.

Legislation to prevent the spread of the "yellows" has been furnished; also, to provide for printing the transactions of the State Pomological Society, besides a liberal appropriation towards paying the expenses of an exhibition of our fruits at the current meeting of the American Pomological Society. All in all *we feel encouraged.*

In concluding, there is one thing not in your catalogue for general cultivation in which there should be an interest taken in every fruit section, to grow to a high state of excellence—the fruit of which is more valuable than any other grown, and is worthy of unlimited starrng (for neighborhood cultivation), and that thing is, "Horticultural Clubs," with *evening* meetings not more than *two weeks apart.*

Yours respectfully,

A. T. LINDERMAN.

KALAMAZOO, Mich., Aug. 18th, 1874.

To the Michigan State Pomological Society:

The undersigned a Committee, by you appointed for the purpose, respectfully represent, that, at a meeting held at this place for the purpose, they agreed upon a system of recommendations for the starring of the Michigan column of the catalogue of the American Pomological Society, which recommendations are indicated in the accompanying copy of the lists of varieties included in such catalogue, in the manner therein employed, by means of the * and †.

We omit from our list only the classes of fruits unadapted to our Northern climate, or only grown under glass.

Your Committee also suggest the insertion in said catalogue of the following varieties, and the insertion of the accompanying recommendations for the State of Michigan, viz.:

Apples.—* *Colvert*, * *Harcley*, * *Shiawassee Beauty*.
Blackberries.—† *Ancient Briton*, † *Barnard*, † *Snyder*.
Cherry.—† *Duchess de Pallau*.
Crab.—† *Byers' Beauty*.
Peaches.—* *Keyport White*, * *Sumner's Orange*, * *Wheeler's Early*, * *Beatrice*.

Strawberries.—† *America*, * *Seneca Chief*.

All which is respectfully submitted,

T. T. LYON,
GEO. PARMELEE,
H. DALE ADAMS,

Committee.

The changes recommended have been made.

Committee.

APPLES.

The following varieties to have two **:

Baldwin, *Ben*, *Davis*, *Duchess of Oldenburg*, *Early Harvest*, *Golden Russet of Western New York*, *Maiden's Blush*, *Northern Spy*, *Park's Pleasant*, *Primate*, *Red Astrachan*, *Red Cavalier*, *Rhode Island Greening*, *Summer Queen*, *Twenty Ounce*.

The following varieties one *:

Alexander, *American Summer Pearmain*, *Autumn Bough*, *Bailey Sweet*, *Belmont*, *Bevoni*, *Blue Pearmain*, *Buffington's Early*, *Canada Reinette*, *Carolina Red June*, *Crenanga Strawberry*, *Cooper*, *Cupsell*, *Cole's Quince*, *Cornell's Fancy*, *Dancer's Winter Sweet*, *Dominic*, *Drap d'Or*, *Dutch Mignonne*, *Dyer* or *Pomme Royal*, *Early Joe*, *Early Strawberry*, *English Russet (Poughkeepsie)*, *Esopus Spitzenberg*, *Evening Party*, *Fallwater*, *Fall Jewetting*, *Fall Orange*, *Fall Pippin*, *Fall Wine*, *Famense*, *Foundling*, *Garden Royal*, *Garretson's Early*, *Golden Sweet*, *Gravenstein*, *Green Sweet*, *Grim's Golden Pippin*, *Hall*, *Haskell Sweet*, *Hawthornden*, *Hightop Sweet*, *Holland Pippin*, *Hubbardston Nonsuch*, *Hurlburt*, *Jefferson County*, *Jeffers*, *Jersey Sweet*, *Jonathan*, *Keswick Collin*, *King of Tompkins County*, *Lady Apple*, *Leclis' Sweet*, *Large Yellow Bough*, *Limber Twig*, *Luell*, *Manomet*, *McAfee's Nonsuch*, *McLellan*, *Melon*, *Minister*, *Moumouthe Pippin*, *Mansu Sweet*, *Newtown Pippin*, *Northern Spitzenberg*, *Ohio Nonpareil*, *Peach*, *Pond Sweet*, *Perry Russet*, *Pittsburg Pippin*, *Pomme Grise*, *Porter*, *Progress*, *Ramsdell's Sweet*, *Rambo*, *Road's Genet*, *Ribston Pippin*, *Roman Stem*, *Rome Beauty*, *Robury Russet*, *Saint Lawrence*, *Saxton*, *Smith's Cider*, *Smokehouse*,

Summer Haglow, *Summer Pound Royal*, *Summer Pippin*, *Summer Rambo*, *Summer Rose*, *Summer Sweet Paradise*, *Seear*, *Tolofsky*, *Tarksbury Winter Blush*, *Talman's Sweet*, *Townsend*, *Treaton Early*, *Vanderer*, *Wagner*, *Washington*, *Westfield Sack-wo-farther*, *William's Favorite*, *Willow Twig*, *Winsap*, *Yellow Bellefleur*.

The following varieties, promising well, to have †:

Broutsell, *Klaproth*, *Lyscom*, *Stark*, *Washington Royal*, *White Doctor*.

CRAB APPLES—to have one *.

Hyslop, *Montreal Beauty*, *Transcendent*.

APRICOTS—to have one *.

Breda, *Early Golden*, *Moorpark*.

BLACKBERRIES—to have one *.

Dorchester, *Kittanning*, *Wilson's Early*.

CHERRIES—to have two **.

Black Tartarian, *Early Richmond*, *Governor Wood*, *May Duke*.

CHERRIES—to have one *.

Belle Mequignac, *Belle de Choisy*, *Belle d'Orleans*, *Bigarreau*, *Black Eagle*, *Black Heart*, *Butner's Yellow*, *Carleton*, *Coe's Transparent*, *Donna Maria*, *Dancer's Late*, *Early Purple Guigue*, *Elton*, *Knight's Early Black*, *Late Duke*, *Louis Phillippe*, *Morello*, *Napoleon*, *Plumstone Morello*, *Reine Hortense*, *Rockport*, *Royal Duke*, *Tradesman's Black Heart*.

CURRANTS—to have one *.

Black Naples, *Cherry*, *Fertile de Paluan*, *La Versailles*, *Prince Albert*, *Red Dutch*, *Red Grape*, *White Dutch*, *White Grape*, *Victoria*.

GOOSEBERRIES—to have one *.

Downing, *Houghton*, *Mountain*, *Pale Red*, *Smith's Improved*.

GRAPES—to have two **.

Concord, *Delaware*.

GRAPES—to have one *.

Adirondac, *Agarum*, *Avery*, *Catawba*, *Clinton*, *Croceland*, *Diana*, *Emanuel*, *Hartford Prolific*, *Iona*, *Isabella*, *Isabella*, *Lee's*, *Massasoit*, *Merrimack*, *Norton's Virginia*, *Perkins*, *Rebecca*, *Salem*, *Walter*, *Wilder*.

GRAPES—to have †.

Croton, *Martha*, *Peter Wyllie*, *Telegraph*.

NECTARINES—to have one *.

Boston, *Darnton*, *Early Newington*, *Early Violet*, *Etruge*, *Sturwick*.

PEACHES—to have two **.

Barnard, *Crawford's Early*, *Hale's Early*, *Hill's Child*, *Jacques*, *Old Mixon Free*, *Stamp the World*.

PEACHES—to have one *.

Bellegarde Cole's Early Red, *Columbia*, *Coolidge's Favorite*, *Crawford's Late*, *Druid Hill*, *Early Newington Free*, *Early York*, *George the Fourth*, *Grosse Mignonne*, *Hain's Early Red*, *Indian Blood Freestone*, *Large Early York*, *Large White Cling*, *Late Red Raveripe*, *Late Admirable*, *Lemon Cling*, *Morris White*, *Mountain Rose*, *Old Mixon*

Cling, Red Check Melocoton, Snook, Snor, Suspuhanaun, Tippecanoe, Trotter's Early, Van Zandt's Superb, White Imperial, Yellow Alberge, Yellow Riverripe.

The *Easter Peach* to have †.

The following

PEARS—to have two **.

Bartlett, Beurre d'Anjou, Clapp's Favorite, Duchesse d'Angoulême, Flemish Beauty, Winter Nelis.

PEARS—to have one *.

Belle Lucratie, Beurre Rose, Beurre Clairgou, Beurre Diel, Beurre Giffard, Beurre Goubauld, Beurre Langlier, Beurre Superfin, Bloodgood, Brandywine, Buffum, Columbia, Dearborn's Seedling, Doyenne Boussock, Doyenne d'Alençon, Doyenne d'Été, Easter Beurre, Glout Moreau, Howell, Jubousie de Fontenay, Jamineth, Josephine de Malines, Kirtland, Lawrence, Louise Beurre de Jersey, Madeline, Napoleon, Onondaga, Osband's Summer, Paradise d'Autouin, Pound, Rostiezer, Sckel, Shebban, Sterling, Steen's Genesee, Tyson, Vicar of Winkfield, Washington, White Doyenne, Windsor.

PEARS—to have †.

Dana's Honey, Doyenne du Comice, Mount Vernon.

PLUMS—to have two **.

Coe's Golden Drop, Lombard, Washington

PLUMS—to have one *.

Bray's Green Gage, Bleeker's Gage, Bradshaw, Columbia, Dawson, Dana's Purple, German Prune, General Hand, Green Gage, Halling's Superb, Imperial Gage, Italian Prune, Jefferson, Lawrence's Favorite, McLaughlin, Maurice, Orleans, Peach, Paet's Seedling, Prince's Yellow Gage, Quackeboss, Smith's Orleans, Yellow Egg.

PLUMS—to have †.

Wild Goose.

QUINCES—to have one *.

Angers, Apple or Orange.

QUINCES—to have †.

Red's Seedling.

RASPBERRIES—to have two **.

Clark, Herstine, Philadelphia.

RASPBERRIES—to have one *.

American Black, Davison's Thornless, Fastoff, Franconia, Golden Cap, McCormick, Miami, Orange, Ohio Everbearing.

STRAWBERRIES—to have two **.

Jucunda, Triomphe de Gaud, Wilson's Albany.

STRAWBERRIES—to have one *.

Agriculturist, Charles Downing, Downer's Prolific, Green Prolific, Harvey's Seedling, Ida, Kentucky, Large Early Scarlet, Lanning's White, Longworth's Prolific, Nieuport, Russell's Prolific, Seth Boyden, Victoria.

STRAWBERRIES—to have †.

President Wilder.

Report from Wisconsin.

WAUWATOSA, Sept. 20, 1875

P. BARRY, Esq.: Dear Sir—A State which on her poorest lands produces annually 20,000 bushels and upwards of Huckleberries worth \$60,000 to \$80,000, and 15,000 to 20,000 barrels of Cranberries worth \$150,000 and upwards, is worthy of some consideration as a fruit producing State. This Wisconsin is constantly doing, and with a little care and enterprise her Cranberry crop may readily be quadrupled. All the cultivated "small fruits" also do well, and our cities and larger villages are well supplied with each in their season. Of the many varieties of Strawberries tested, *Wilson, Green Prolific* and *Boylan's No. 30* have done most for us. For Raspberries *Miami* and *Philadelphia* are most reliable.

No Blackberry has yet proved worthy of general cultivation. *Snyder, Western Triumph* and *Ancient Briton* are the most promising. The last named has been considerably disseminated, and in skillful hands has produced good crops of fine fruit. Rather soft for market but excellent for home use.

Houghton and *American* Gooseberries are most cultivated; *Mountain* and *Downing* are being disseminated and the latter is growing rapidly in favor, because of its upright habit and the size and quality of its fruit. *Smith's Seedling* seems from our limited trial to be desirable.

Red Dutch and *White Grape* Currants will do the most for us. *Long Branch Red* seems to be the most profitable late Currant.

Rogers' Grapes Nos. 9 and *15*, are giving good satisfaction, but *Delaware, Concord* and *Jamsville* are "the grapes for the million." The last, though of very common quality, has points of excellence which render it very valuable, viz: Great hardiness (equal to any wild variety), earliness (two weeks earlier than *Concord*), luxuriant growth, freedom from mildew, and uniformly heavy crops of fruit. These qualities render it successful one or two degrees further North and in unfavorable localities where nothing else will do.

In making this list of small fruits so brief, I have only named those that are successful and profitable under almost any circumstances. There are many others which are valuable to the amateur cultivator.

Early Richmond, English Marcella and *Kentish* are the only Cherries that have done anything for us. These are about equal in value, except that *Kentish* is perhaps more enduring and will stand one or two degrees further North than the others.

Lombard is our most profitable Plum. *Washington, Yellow Egg, Dana's Purple* and others are grown, but only in favorable locations. Considerable interest is shown in our best native kinds, and we have some that seem worthy of cultivation. Among these are *Harrison's Peach* and *Harrison's Large Red* from Minnesota, *De Soto* and *Winnebago* in Wisconsin, *Waver* from Iowa. *Minor* proves valuable in some localities, in others worthless. The attention now turned in this direction can hardly fail to give us a collection that will cover the full capabilities of this class as to season and quality.

We can say very little that is encouraging for Pear culture. Of the many kinds planted *Flemish Beauty, Bartlett*

and *Sckel* have done best. *Ananas d'Ete*, *Orange*, *Winter Nelis* and *Early Bergamot* have also given us some fruit. Here as elsewhere blight is the great enemy.

Apples are with good management generally successful, but much care is needed in choice of soil and location, in treatment, and especially in choice of varieties. On this last point there is so much difference of opinion that I cannot do better than to give the list recommended by our State Horticultural Society, viz: Five varieties, hardiness the only test—*Tetofsky*, *Duchess of Oldenburg*, *Haas*, *Plumb's Cider*, *Fameuse*. For general cultivation add *Walbridge*, *Red Astrachan*, *Utter*, *Sck-no-further*, *Talman Street*, *St. Lawrence*, *Willow Twig*, *Peraunke*.

I think this list might be largely increased with kinds that would prove valuable to the general planter and to the market grower. This opinion is strengthened by the fact that every year's exhibition brings out numerous collections numbering fifty to eighty kinds, most of them fine, well grown specimens.

A word as to the present standing of some kinds recently brought to notice may be of interest:

Walbridge fully maintains its standing as to thrift and hardiness and heavy crops. Small size, made smaller by over bearing—seems to be its only fault.

Peraunke is a vigorous grower, an early and constant bearer, and will probably rank in hardiness with *Fameuse*, but its reputation for extra hardiness suffered somewhat in the Winter of '73 and '74.

Wealthy is gaining rapidly in favor in Minnesota where it is best known, and so far as tried here seems valuable.

Plumb's Cider is being freely planted for market, and profit by those who have seen most of it.

Haas has gone uninjured through the past trying Winters and will doubtless prove a valuable market sort.

The demand for "improved Siberians" is bringing out many good things. Among these may be mentioned *Brian's Sweet*, *Whitney's No. 20*, *Golden Sweet*, *Orange* and *Minnesota*, which with *Hyslop* and *Transcendent* will perhaps as well represent the class and cover the whole ground needed, as to season and quality, as would a larger collection.

Our State Horticultural Society is working earnestly to test what is old and develop what is new, that from all we may place in the hands of planters a list which they may plant with more confidence than heretofore.

Wiser and more thoughtful management is also needed on the part of our planters in planting and culture, and especially in the proper care and marketing of the fruit. In years of plenty thousands of bushels of apples are allowed to waste for want of attention and proper facilities for marketing.

With these objects and improvements attained we hope to make our fruit interests, as a State, *thoroughly comfortable*, if not *remunerative*.

LIST OF APPLES FOR WISCONSIN.

One Star.—*Alexander*, *Early Harvest*, *Early Red Margaret*, *Jonathan*, *Keswick Coddin* (tree a little tender), *Lowell*, *Northern Spy*, *Perry Russet*, *Golden Russet*, *Pomme Grise*, *Price's Sweet*, *Rambo*, *Utter*, *Saxton*, *St. Lawrence*, *Tetofsky*, *Twenty Ounce*, *Westfield Sck-no-further*.

Two Stars.—*Duchess of Oldenburg*, *Fall Orange*, *Fameuse*, *Golden Russet*, *Red Astrachan*, *Sops of Wine*, *Talman Street*.

Dagger.—*Haas*, *Plumb's Cider*, *Peraunke*, *Wealthy*, *Walbridge*.

Respectfully submitted,

J. S. STICKNEY.

Report from Minnesota.

P. BARRY, ESQ., *Chairman General Fruit Committee American Pomological Society*:

The Winter of '74 and '75 will ever be held memorable among Horticulturists as one of the coldest since the settlement of the State. The Winter of '72 and '73 shortened our bright prospects of fruit raising materially, yet there are still many trees and orchards that show little signs of failing. Blight is by many thought to be the cause of more failures than the severe cold of winter. Large trees that have stood ten or fifteen years and borne fruit for several seasons have been killed or so injured that they will die, and as yet there has been found no remedy. It has been a struggle alternating between hopes and fears with many of our fruit raisers for the past twenty years, and at times the balance sheet stood on the debtor side. But since we have more carefully selected hardy home grown varieties our success has grown brighter year by year, and many, even after past experiences, look forward with bright anticipation to raising fruit in abundance. Location and soil has much to do with the success or failure of certain varieties. All grow best on high clay or limestone soils well underdrained with gravel. Cultivation that does not stimulate overgrowth is well adapted to our climate, for the slower the tree grows the first few years the better it succeeds when coming into bearing, also giving a tendency to longevity.

Trees should be trained in nursery, avoiding forks or large crotches, to one upright center with evenly balanced heads. Pruning should be indulged in sparingly after trees are set in orchard, as lopping off large branches is very injurious, in many instances causing decay and ultimate death. Planting in this climate should always be done in the Spring, soon after the frost leaves the ground. Mulch or cultivate the soil well the first few years, then seed down. Always protect roots by mulching in the Fall with straw, leaves, or refuse vegetable matter, but if manure is used take only old or that which is finely rotted. When the thermometer indicates 33 degrees below zero and continues weeks in succession from 20 to 30 degrees we have but little hopes of a large yield of fruit in Minnesota.

According to the record of William Cheney, Vol. Observer United States Signal Service, Minneapolis, Minnesota, the past eight months has been the coldest for several years. January 8th 33 degrees below zero; January and February the coldest on record here; March, 3 degrees colder than average for last ten years; April, 5 degrees colder than average for last ten years, and 5 degrees colder than last year. Coldest June on record here, 7 degrees below average for past ten years; July, 2 degrees colder than average for past ten years and 4½ degrees colder than last year; August, 2½ degrees colder than average for last ten years and coldest since 1870. Notwithstanding this small fruits have been very abundant. Strawberries were very plenty; Currants yielded us well, or better, than for several

years; Raspberries were somewhat injured in winter but the uninjured ones were loaded well.

Native plums are very plenty and of unusually fine size and quality. Crab apples have been a fair crop, being so plenty that in market sell for 1.00 to \$1.25 per bushel, usually selling from \$1.50 to \$2.00.

The *Pyrus Malus* has been a very poor crop, many large trees not bearing a single specimen.

The following list was adopted by our State Horticultural Society for general cultivation: *Duchess of Oldenburg*, hardy and productive; *Tetofsky*, early and hardy; *Wealthy*, native of Minnesota—good quality for table and kitchen use—season, Winter.

For favorable localities—*Haus*, *Price's Winter Sweet*, *Saratou* and *Utter's Red*.

For most favorable localities—*Famouse*, *Plumb's Cider*, *Walbridge*, *St. Lawrence* and *Talman Sweet*.

SIBERIAN APPLES OR CRAB

Since many of the old varieties of apples have proved too tender for our climate, there has sprung up new varieties, mostly seedlings of our State. Small apples, crab in form and growth, much better flavored than the crabs denominated by our fruit growers, *Leon Clads*. Among these we find a few good eating apples, while others are well adapted to culinary purposes, mostly Fall varieties, but a few keeping well into Winter.

Our strong hope at the present time is by hybridizing the *Pyrus Malus* with the *Pyrus*, forming new hardy varieties adapted to our climate. Many of these new varieties are profuse bearers and are being rapidly distributed through the great Northwest.

We have divided this list for convenience into four classes in the order of their hardness.

CLASS FIRST.

Early Strawberry.—Tree strong and handsome grower, bearing heavy crops alternate years. Fruit size and appearance of *Transcendent*, excellent for eating. Season, August.

Orange.—Tree moderate grower, annual and abundant bearer. Fruit larger than *Transcendent*. Flesh firm, crisp, juicy and delicious. October to December.

Becher's Sweet.—Tree vigorous and erect, biennial and abundant bearer. Fruit resembles in appearance *Transcendent* but larger, very pleasant eating. September.

Minnesota.—A medium grower, with pale green leaves of unusual size, often becoming highly colored in Autumn like foliage of Sugar Maple. Fruit larger than *Golden Russet*. Skin thin, nearly white, with blush on sunny side. Quality excellent. December to February.

CLASS SECOND.

Conical.—Tree vigorous and handsome, good bearer. Fruit as large as *Transcendent*, resembling in appearance and flavor the *Black Gilliflower*. October.

Maiden's Blush.—Tree medium grower, of slender, graceful habit. Fruit not as large as *Transcendent*, pearl white, with beautiful red cheek, peculiar pleasant flavor. December to January.

Meader's Winter.—Handsome, strong growing, productive tree. Fruit size of the last; excellent for eating. April and May.

Hutchinson's Sweet.—Tree good grower with slender twigs; moderate bearer. Fruit size of last, superior quality. Keeps till April and May.

Quaker Beauty.—A stronger grower than *Transcendent*, a biennial bearer. Fruit large, handsome and of excellent quality. April to May.

CLASS THIRD.

General Grant.—Tree vigorous and erect, an annual and profuse bearer. Fruiting in dense clusters. Fruit large, dark red, nearly black when ripe, much like the *Duchess* in quality. October and November.

Hesper Blush.—Tree among the handsomest. A good bearer. Fruit a little smaller than *General Grant*; quality good. Season, November to January.

Aiken's Striped Winter.—Tree fine but the least hardy of the class; an annual and free bearer. Fruit good sized and valuable for eating or cooking. Season, mid-winter.

CLASS FOURTH.

Aiken's Green Winter, *Hyslop* and *Transcendent*.

Respectfully submitted,

Minneapolis, Minn.

WYMAN ELLIOT

REPORT FROM HOUSTON COUNTY, MINN.

APPLES.

The older apple orchards in this section, ten or more years planted, are looking badly, many of them are past hope. One cause of this is that they were composed largely of the more tender varieties; another that many of the trees in the winter of '72 and '73 suffered from root killing. Orchards planted within the last six years with hardy varieties, except where blight prevails extensively, are doing well. The varieties succeeding best are *Duchess of Oldenburg*, *Tetofsky*, *Red Astrachan*, *Sops of Wine*, *Autumn Strawberry*, *Haus*, *Plumb's Cider*, *Famouse*, *Price's Sweet*, *Talman Sweet*, *St. Lawrence*, and a newly introduced variety, *Walbridge*, promises well after four years trial.

The Siberian species have been quite extensively planted and hopes entertained that some of the newer varieties would fill the place of the *Pyrus Malus*, also prove more hardy. But as yet none of them have proved as valuable as the *Transcendent* and *Hyslop Crab*, and on account of the blight these are more uncertain for orchard culture than the common apple.

The Siberian crop this year will be very light. Common apples almost a total failure.

PEARS.

Pear trees two years old and upwards were nearly all destroyed by the cold winter of '72 and '73, and the prevailing opinion being that they are not sufficiently hardy for our climate no trees are being planted.

The *Plumish Beauty* succeeded best previous to the hard Winter, and I think it safe to plant again when the blight disappears.

PLUMS.

The European species is not extensively cultivated, always having proved uncertain and seldom living to produce a crop. Some attention is paid to the cultivation of the better varieties of our native plum, which are very abundant in most localities. Some very fine varieties have been obtained. The plum crop will be lighter than usual this season.

CHERRIES.

The common *Morrello* is the only variety sufficiently hardy for general cultivation. The yield this year was very good.

GRAPES.

Grape culture is attracting considerable attention and there are some fine vineyards in this county.

We have received no serious drawbacks except the winter of '72 and '73. The varieties most extensively cultivated are *Cuicard*, *Clinton* and *Delaware*. The *Isabella* and *Catawba* are generally discarded, as they are tender and late in ripening.

The prospect of a good crop this season is very promising.

BLACKBERRIES.

No improved variety has yet proved sufficiently hardy to warrant general cultivation, and our wild berry is an inferior fruit and uncertain bearer.

RASPBERRIES.

The *Black Caps* are hardy everywhere, the crop this season being abundant. The varieties used for general cultivation are *Doolittle* and *Davidson's Thorless*. The *Philadelphia* leads among the red raspberries, *Turner* promising well.

STRAWBERRIES.

These are more extensively grown than any other of the small fruits. The yield this season was abundant. The *Wilson* proves the best market berry. *Dorner's* and *Green Prolific* are doing finely.

CURRANTS.

Currants are extensively cultivated, *Red Dutch* and *White Grape* being leading varieties. They have had no insect enemies to contend with this year and have yielded abundantly.

JOHN S. HARRIS.

REPORT FROM RICE, GOODHUE, SCOTT AND DAKOTA COUNTIES.

APPLES.

The apple crop is very light, no trees being heavily laden. Some *Duchess* trees several years planted may yield from one to two bushels apiece, bearing better than any other variety. The oldest trees in this section are in Goodhue county, on Southern Prairie, exposure surrounded by timber belt of white willow.

The *Hess*, *Famouse*, *Tetofsky*, *Red Astrachan*, *Saxton* and *Pearl's Cider* are all bearing lightly when found on favorable soils.

Tetofsky grafted eighteen inches from the ground on *Transcendent*, set five years, are yielding well. No *Tetofsky* root grafted are found in bearing.

All *Saxtons* found bearing are trees with high tops, no limbs within five feet of the ground. I am satisfied this variety and the *Famouse* also will be found profitable if only properly trained. A few *Talman Sweet* protected on South from sun promise well, a good indication that the sun had considerable to do with the past destruction of this variety. All trees are making better growth than since the summer of '72. The signs of bark scald this spring alarmed many, but no serious results followed.

No sound, hardy tree was injured the past Winter; all trees injured showing on examination that they were suffering previously either from bad trimming, or some other cause.

In one neighborhood I was informed *Mr. S's* bearing *Duchess*, the oldest tree in town, was nearly dead. Calling to ascertain the trouble, if possible, I found it making good growth and bearing some fruit. Taking hold of the tree I found it loose in the ground, the roots cut off by Gophers. So I invariably find where trees are not doing well it results from want of care.

Many young trees planted shallow in cultivated ground were killed the past Winter. This could have been easily prevented by deeper planting or mulching. I find so universal a lack of knowledge among planters, and such general neglect and abuse of orchard trees, that I only wonder there are any good trees in the State.

Crab apple trees are bearing well this year. Of the varieties in bearing I name the *Early Strawberry*, *Transcendent*, *Harvest*, *Becher Sweet*, *General Grant*, *Conical*, *Berry*, *Orange*, *Quaker Beauty*, *Meader's Russet*, *Meader's Red Winter*, *Hystop*, *Malakoff*, *Maiden's Blush* and others of less value.

GRAPES.

Grapes are generally doing well and bearing a fair crop.

RASPBERRIES.

Many Raspberries were injured by the cold of the past Winter. Yield not heavy.

STRAWBERRIES—Fair.

CURRANTS AND GOOSEBERRIES—Plenty.

A Cherry called *Caration* is bearing well and is hardy.

As a result of my observation in the counties named I am convinced that eventually a bountiful supply of apples will be produced in this State and fruit growing will become profitable for any one who understands caring for trees to engage in. When people are willing to give an orchard as much or a little more care than they receive in older fruit countries, and understand the theory of orchard cultivation; when they understand what to plant, where to plant, how to plant, and how to care for what they do plant, success is as certain as in any climate.

Of the newer varieties of apples there are no old trees in the section named. There are a few young trees of *Prie's Winter Sweet*. I regard this as one of our most valuable varieties. The *Wealthy* are excellent and out of two four year old trees seen, one was bearing. Of the *Malinda* there are no trees over three years here. The *Peach* and *Drake* are both promising varieties.

All the last named sorts are bound to take their place beside the *Duchess* for orchard trees.

The future of Minnesota Horticulture looks brighter than a year ago. There are but few real, true, faithful workers in this field, but these few make up in energy what they lack in numbers, and to them will belong the honor of being instrumental in supplying the future millions of the Northwest with God's great boon of fruit.

O. F. BRAND.

Report from Washington Territory.

FRUIT CULTURE AND FRUIT PROSPECTS IN WASHINGTON TERRITORY, CLIMATIC INFLUENCES, ETC.

This territory, comprising the North-west corner of our domain, in Latitude from 46 to 49°, is remarkably mild and equable in temperature; it is divided North and South by the Cascade range of mountains; the part lying west of, and between these mountains and the Pacific Ocean is usually known as Western Washington, while that part east of the Cascade range is known as Eastern Washington. Western Washington comprises the great Puget Sound Basin with surrounding country from the Columbia river on the South to Fraser river on the North, the latter river emptying into the Gulf of Georgia in Latitude 49°, at the boundary line of the British possessions.

In Eastern Washington the Peach and the Grape do remarkably well and are being cultivated in supply fully equal to the demand, while in Western Washington the same fruits cannot be produced with any degree of success, although in special localities and favorable seasons a fair quality of these fruits are obtained; we are now introducing the earlier ripening varieties of Peaches and Grapes, and are being rewarded with better success than formerly. The peculiar local difference in the above fruits is owing to a marked difference in the temperature and climate of the two sections; in Western Washington or Puget Sound Basin, the atmosphere, during fall, winter and spring, is charged with moisture; during summer the nights are ever cool, and even the days are at times cool whenever it is cloudy and the sun obscured. Eastern Washington has a dry atmosphere; summers dry, clear and warm; winters comparatively dry and cold with liberal fall of snow, as an offset to the rains of Western Washington.

The adaptability of both sections of the Territory is being well established as a fruit-growing region; with reference to all the varieties peculiar to our climate in Western Washington, such as Apples, Pears, Plums, Cherries and all the smaller fruits (English Gooseberry excepted, most varieties of which mildew here) are produced here as not to be excelled in any section of the Union. The Western Washington Industrial Association holds Annual Fairs at Olympia, at which are exhibited collections and specimens of the above named fruits raised here, that are the admiration of all parties late from the East, and are pronounced by them superior in size, beauty and excellence to those varieties of fruits in similar exhibitions at the East.

In the earlier settlement of this Territory fruits were scarce, consequently high priced, orchards were planted more extensively than the prospective demand would or did warrant, resulting, as might be expected, in excess of supply over the demands of a very limited market, hence orchards were neglected and but little attention paid to raising fruits. Of late more attention is given to fruits, and our people (sparsely settled) are planting fruit trees liberally, and I believe they will meet a better reward than did the early planters.

Most varieties of fruits bear here earlier than in the East, often overbearing, and it is seldom, if ever, the fruit is thinned on the tree; such over-production without enriching the soil, frequently causes trees to perish; it is not at all uncommon for trees in nursery, three to four years old, to

bear several specimens of fruit. An orchard within ten years from date of planting would doubtless bear as much fruit here, if properly cultivated and attended to, as a similar number of trees would in the East in the first twenty years after planting; twenty feet is the usual distance with us for planting Apple trees, which we find to answer very well, and what few Pears, Plums and Cherries are planted, comprise a part of the main or Apple orchard; these are given the same distance apart.

All varieties of Plums do exceedingly well here; trees and fruits uniformly healthy and bear abundantly; the Curculio, so destructive in the east, is not known here.

We are now entering on a new phase of fruit business; the Alden and the Plummer drying machines offer an opportunity for drying all the fruits we can raise, and many trees, principally Plums and Prunes, are being planted in view of drying and shipping the fruits to other markets, not so well favored in point of production as we believe ourselves to be; the machine-dried fruits selling readily for over double the price of sun-dried fruits, wherever offered for sale.

Several new fruits of merit have originated here and in Oregon, some of which are as follows:

GOOSEBERRY

Oregon Champion.—This is a cross between the *Crown Bob* (English) and the *Houghton Seedling* (American) varieties; fruit from which the seed was obtained, grew and intermingled on the grounds of Dr. P. Prettyman, Multnomah County, Oregon, in the year 1859; this new variety was selected from about five hundred seedlings, when they came into bearing at the age of five years; it ripens early, is entirely free from mildew, is a thrifty grower and a most prolific bearer. Mr. H. W. Prettyman, of the Railroad Nurseries, writes, "I have gathered from a single plant of this variety, four years old, 34 gallons of berries at one gathering; the fruit is about two-thirds as large as the *Crown Bob*, is of a pale whitish color and is perfectly transparent when ripe."

NEW CHERRIES.

Major Francis.—Originated by Messrs. Walling & Son, Willamette Nursery, Oregon; fruit very large, black, rich flavor, fine; ripens just before the the Black Tartarian; one of the best Cherries in their time; tree vigorous and productive. Took the first premium two years in succession, over all other cherries.

Willamette.—A seedling from the *Royal Ann* (*Napoleon Bigarreau*), fruit very large, light red color, sweet, late. A good market variety.

Lewelling.—Raised by Mr. Seth Lewelling, Milwaukee, Oregon; ripens with or a little after the *Napoleon Bigarreau*, fruit very large, shining black, flesh very solid and firm, fine, a good keeper and will bear transportation a long distance; tree a stout, vigorous grower, comes into bearing early; a profitable market variety.

PEACH.

Lawton.—This Peach was raised by Mr. C. W. Lawton, of Seattle, in this Territory; the fruit is very large and handsome, ripens early, is of excellent quality and promises to be a great acquisition to our fruit collections here; was raised from seed imported from England.

Sundry other new fruits, having peculiar merits and deserving extended cultivation, have originated in this Northwest section, but for want of full and satisfactory data relative to their origin, habits, peculiarities and qualities, I will not attempt at this time to give any description of them.

JNO. M. SWAN.

Upland Nursery, Olympia, W. T., Dec. 1st, 1875.

Report from Pennsylvania.

P. BARRY, *Chairman Gen'l Fruit Committee American Pomological Society:*

Dear Sir—To make a creditable report for the Keystone State to the American Pomological Society would require more time, a better system of coöperation, and a more competent head than his to whom has been assigned this duty. I trust therefore you will excuse whatever defects may appear in the following. Although Pennsylvania is a fruit growing, she is not a fruit exporting State, as there are annually hundreds of barrels of Apples and thousands of baskets of Peaches sold within her limits from other States.

Apples are, of course, the staple fruit crop throughout the State, but they doubtless grow to greater perfection in her northern and northwestern sections. This advantage is not altogether caused by a climate better adapted, but, to a great extent, to the selection of varieties. Pennsylvania planters have for many years patronized Northern nurserymen, who held a monopoly in this business, and who grew and recommended such kinds as succeeded in their section. Consequently, *Baldwin*, *R. I. Greening*, *Roxbury Russet*, *Northern Spy*, and several other kinds, compose the bulk of a majority of orchards. The result is, of good keeping Winter Apples there is seldom a supply, because those excellent Northern Winter Apples have proven in the Southern section of our State, simply late Fall, or at best early Winter fruits. Although the trees are generally good growers and profuse bearers, which tends to keep up their reputation as standard varieties, of late there seems more disposition to plant kinds that are native to the State, which no doubt is the true principle of selection everywhere, with the exception of where a foreign variety has been fairly tested. The leading native Winter Apples which seem destined to supplant some of the Northern varieties are *Smith's Cider*, *York Imperial*, *Cornell's Fancy*, with some newer kinds competing for honors, as *Major*, *Munroe's Vanhooker*, *Creek* and *Belmont*.

Our State having but few native Pears, she has the honor of having produced what has been termed the "standard of excellence," the *Sickel*, which with *Bartlett*, *D'Anjou*, *Laurence*, *Duchess*, compose probably the most generally popular Pears in the State, while *Hocell*, *Sheldon*, *Urbaniste*, *Belle Lucrativ*, *Doyenne d'Été*, and *Bloodgood*, form some of the leading kinds. Although not extensively planted as a rule, there is general planting throughout the State, wherever a taste has been developed for choice fruit. In the Eastern section of the State a number of orchards are planted, some quite extensive. The Pear seems to succeed wherever the Apple does, where a proper altitude is reached. A well drained, rich limestone soil, appears to be most reliable. Although excellent crops, and some of the finest specimens of both Apple and Pear, have been grown on

thin soils, especially on mountain slopes, but without the proper fertility being kept up, exhaustion and early decline has frequently been the result.

Peaches being more partial to soil and climate than either Apple or Pear, they are not so generally planted as the latter. In the northern tier of counties there is scarcely any attempt made to grow the Peach, while in the southern tier they are in some localities as certain as in Delaware or New Jersey. I will just here hint a prediction that the latter States will not always hold a positive monopoly in the Peach trade. For several years large shipments have been made from York, Lancaster, Cumberland and Franklin counties, which have generally outsold the Eastern Peaches in the Western markets. Last season car-loads were shipped from Franklin county to Baltimore, which looked like close competition with the great growers of the East. There are undoubtedly thousands of acres in our State from the borders of Delaware to the Pan Handle, that are admirably adapted to Peach growing, and with each succeeding year the plantings are increased, so that a decade hence may verify my predictions.

Even in the interior counties of Perry, Huntingdon, Mifflin, Juniata, and Blair (the latter bordering on the Alleghenies), there are Peach orchards planted, some of which have already given good results. Like all other pursuits, a knowledge of, and adaptability to, the business will be attained with its growth. The Peach is perhaps more affected by climatic influences than any other general fruit crop. In this section 10 degrees to 12 degrees below zero (Fahr.) is almost without exception sufficient to prevent a crop. But there seems to be other influences beside degrees of cold. In the winter of 1872-1873 the mercury sunk to 21 degrees below zero, which killed all the buds and many of the trees North of the Susquehanna at this place (Marietta), while on the South side, at an altitude of 400 to 500 feet, hundreds of bushels of fine Peaches were marketed from an orchard that had borne a full crop the previous season, and yet a small orchard, not more than 500 yards from the latter, not exhausted from over bearing, was to a great extent killed. It however lay about 100 feet lower. Similar results have been observed within twenty years.

Plums are not grown as a general crop in consequence of the ravages of the curculio. The jarring system is no doubt the most effective, but it is too often only partially attended to, consequently it is frequently rejected as uncertain. Other remedies have been tried, such as smoking or saturating rags or corn-cobs with coal-tar and hanging them on the trees, but with no certain results. Apricots and Nectarines are planted very sparingly, as they have proven to be even less certain than the Plum. Cherries have not received the attention they deserve, although they will succeed where the Peach does, and often where the latter does not. The *Mazzard* grows almost spontaneously throughout the State, but with most certainty on light soils. The improved kinds however frequently fail where the *Mazzard* flourishes. York county no doubt leads in the production of this fruit, judging from the York market, which is better supplied with fine cherries in their season than any other place in the State. Many are shipped from here to the larger cities. The demand for trees in past years indicates a more extended growing of this fruit, which it well deserves. Grapes are grown on a majority

of homesteads throughout the State, but in many cases only inferior kinds. The advent of the *Conecord* created a new stimulus to grape-growing, it having obtained the title of "Grape for the Million," which it still holds. It is now more extensively planted than all other kinds. Considerable vineyard culture has been attempted, but, as in other States, the demand not being equal to the supply, the former ardor for vineyarding has, to a great extent, subsided. Many of the newer kinds are being planted; the prospect is, that a more permanent and reliable business will be established in this branch of industry.

Currants, Blackberries, and Raspberries are not much cultivated except in the vicinity of large towns and cities, where they constitute a fair proportion of the fruit trade. Strawberries are not so extensively grown as they deserve, while, as with other small fruits, the cities and large towns receive a fair supply. In the rural districts there are hundreds of families who scarcely ever get a taste of this luscious and desirable fruit.

It is difficult to report a list of varieties for the State, as the reports of those who have contributed to the following are quite conflicting, because different sections have their favorite kinds. Aggregating their judgment, intermingled with my own, I present you the following result:

APPLES.

Two Stars.—*Smith's Chick, Baldwin, R. I. Greening, Farn-walder, Maiden's Blush, York Imperial, Roxbury Russet, Hubbardston Nonsuch, Red Astrachan, Winesap, Rambo.*

One Star.—*Roch's Janet, Yellow Bellefleur, Summer Rambo, Porter, Summer Haylow, Summer Queen, Dominic, King of Tompkins County, Creek, Major, Mumper's Vandevere, All Summer.*

PEARS.

Two Stars.—*Bartlett, Seckel, Lawrence, Beurre d'Anjou, Duchess (on quince).*

One Star.—*Doyenne Boussock, Flemish Beauty, Howell, Tyson, Doyenne d'Été, Kirtland, Louise Bonne de Jersey, Belle Laverrière, Urbaniste, Beurre Giffard, Sheldon, Osband's Summer, Buffum.*

PEACHES.

One Star.—*Snock's Late, Large Early York, Troth's Early, Early Rarissime, Susquehanna, Reece's Favorite.*

Two Stars.—*Early Crawford, Old Mixon Free, Late Crawford, Stump the World.*

CHERRIES.

One Star.—*Napoleon Bigarreau, Early Purple Guigne, MayDuke, English Morello, Black Eagle, Elton.*

Two Stars.—*Black Tartarian, Early Richmond, Rockport Bigarreau, Gor. Wood, Yellow Spanish.*

PLUMS.

One Star.—*Washington.*

Two Stars.—*Lombard, Jefferson.*

BLACKBERRIES.

One Star.—*Lawton.*

Two Stars.—*Kittatinny.*

RASPBERRIES.

One Star.—*Miami, Doolittle, Brandyne.*

Two Stars.—*Herstow, Philadelphia.*

CURRANTS.

One Star.—*Red Dutch.*

Two Stars.—*Cherry, La Versailles, White Grape.*

GOOSEBERRIES.

One Star.—*Houghton, Downing, Orange.*

Two Stars.—*Cluster.*

STRAWBERRIES.

One Star.—*Triomphe de Gand, Juconda, Agriculturist.*

Two Stars.—*Wilson, Charles Downing.*

CHANGES IN CATALOGUE

APPLES.

One Star.—*Belmont, Porter, Summer Rambo.*

Two Stars.—*Duchess of Oldenburg.*

PEACHES.

One Star.—*Ward's Late, Reece's Favorite, Salway.*

Two Stars.—*Mountain Rose, Stump the World.*

PEARS.

One Star.—*Kirtland, Roulet, Beurre Brignais.*

Two Stars.—*Urbaniste.*

CHERRIES.

Two Stars.—*Russian.*

PLUMS.

One Star.—*Richmond.*

Two Stars.—*Yellow Gage.*

Respectfully,

H. M. ENGLE.

Marietta, Pa.

Report from Maryland.

P. BARRY, Esq., *Chairman General Fruit Committee:*

Dear Sir—Had the necessary information from experienced fruit growers in our State come earlier into my possession, this report of the progress and extent which fruit culture in Maryland has reached, would have been forwarded sooner.

Maryland, in her geographical position, the fertility of her soil, mildness and uniformity of climate, embraces one of the finest fruit growing regions of our whole country. By this we refer more particularly to what is known as our Eastern Shore Counties; bounded on one side by the Chesapeake Bay and on the other by part of the State of Delaware, where the peach and pear may be said to have found their homes. The soil of this Maryland tract is generally what may be termed a light loam and therefore easy to work. It is computed that about sixty thousand acres of this is planted in peach trees, and the marketable yield the present year of this fruit is estimated at five millions of bushels. The fruit begins to ripen about the middle of July, and continues until the first of October. Some of these orchards are over twenty years old, and still continue in a healthy condition. The stimulants used thus to maintain the trees are liberal applications of barn yard manure, or to the extent of one thousand pounds of ground bones to the acre. Sometimes muriate of potash and other fertilizers are applied, while the surface of the ground is kept open by frequent plowing and harrowing during each

season; judicious pruning and shortening in being considered essential to the healthy condition of the orchard. The usual remedy for the peach borer, or worm, is to use the knife freely and then apply a shovel full of slacked lime on the surface in close contact with the tree. Some seasons the Curculio does great damage to the fruit. To prevent this no remedy has yet been found. With regard to what is called the "Yellows," a few of the more intelligent growers attribute it to the action of an aphid on the roots, and is considered by some to be the Grape Vine Phylloxera, although some Entomologists call it the Aphid Persica. These insects, though small, make sad havoc on the roots, and their presence underground is made very evident by the yellow and sickly appearance of the leaves, and on the few that have been examined by myself the insects were found following out and destroying the healthy bark to the extreme points of the rootlets. Our intelligent and most extensive peach grower, Col. Edward Wilkins, of Kent County, is now carefully investigating the character and habits of this destructive pest, and from him we expect such information as may lead to measures calculated to put a stop to its ravages. An opinion prevails almost universally among our orchardists, that of late years the season of ripening of many kinds has materially changed. Those peaches which used to ripen late, now come in with earlier varieties, thereby occasioning frequently a glutting of the market. Some attribute the cause to an indiscriminate use of seed for stocks got from the preserving establishments, or to the small and weak hog or natural seed procured in Virginia, and my friend Col. E. Wilkins thinks this evil can be obviated by budding "Early Yorks on Early Yorks and Smock on Smock stocks."

PEARS.

Within the last few years the cultivation of this fruit has very considerably increased and very extensive orchards, some of them embracing four thousand trees, now in a bearing state, are to be found. As a general thing Standards are preferred, but on our Eastern Shore Dwarfs are more grown than in the upper counties and there bear very heavy crops. Mr. R. S. Emory, of Kent county, writes me that the present season from one-half acre of *Dwarf Bartletts*, he marketed four hundred crates of prime fruit, and as a general thing good pears, if properly handled, remunerate the grower well. The greatest drawback to the cultivator is blight, the cause of which no one can tell, neither has a remedy been found out.

APPLES.

Apples are not grown extensively, as only the very superior early and late kinds are remunerative. Cider being less in demand now than formerly, the ordinary kinds do not pay for the trouble of marketing.

PLUMS.

Plums are no where cultivated in our State to any extent, and except when planted on the edge of a pond or lake of water, or in a poultry yard, are attacked by the Curculio, and the only plums that these Turks would pass untouched was the *Blue Gage* and *Purple Damsion*, but within a few years back the Black Knot in our upper counties has destroyed the majority of the *Damsion* trees, so that there is now a great demand for young stock of that kind.

CHERRIES.

The *Early Richmond* is the popular market sort, being known almost by every one, but such kinds as *Reine Hortense*, *Bele Magnifique* and *Imperatrice Eugenie* are gradually coming into favor. Of the *Bigarron* kinds the *Governor Wood* and *Black Tartarian* stand high. The Black Knot appears to be the only disease to which they are subject, although frequently a Black Aphid attacks the end of the young shoots in the early part of summer.

HARDY GRAPES.

The majority of grape vines in Maryland have been planted more with the view of producing fruit for the table than for wine making. Only a very few vineyards have been set on foot for that purpose, for which the kinds selected consist in a great measure of *Ives Seedling*, *Clinton*, *Catawba*, *Delaware* and *Concord*, the two last being the most popular kinds grown.

We append a list of fruits that have proved to be well adapted for our State, arranged in accordance with the Society's programme and placed in succession as they ripen:

PEACHES.

One Star.—*Early Troth's*; profitable as a market fruit. *Stamp the World*; large, of medium quality. *Pine Apple*, *White Heath* *Cling*, *Salway*.

Two Stars.—*Early York*, good for table and marketing; *Early Crawford's*, one of the most profitable; *Reeves' Favorite*; *Obduiron Free*, much sought for preserving; *Crawford's Late*, in high esteem for marketing; *Silver Medal*, popular here and in Delaware; *Keypport White*; *Bees' Smock*, the most profitable grown.

Dagger.—*Early Beatrice*; promises well. *Early Louise*, *Early Rivers*; flavor high.

PEARS.

One Star.—*Manning's Elizabeth*; a great bearer, fruit small, yet profitable. *Clapp's Favorite*; a fine grower and good bearer, but fruit inclined to rot at the core. *Flemish Beauty*; rots at the core and sheds its leaves before the fruit is ripe, still it is worth growing. *Vicar of Winkfield*; good bearer on both Dwarf and Standard, much grown.

Two Stars.—*Tyson*; one of the very best, but tree long in coming into bearing. *Beurre Giffard*; in some localities the fruit is liable to crack. *Bloodygood*; high flavored, and much esteemed. *Bartlett*; the most popular of all pears. *Howell*; an early and good bearer on Dwarf or Standard. *Beurre d'Anjou*; one of our very best pears, grows, bears and eats well. *Shelton*; is all that can be desired. *Bergen*; this is gradually growing in favor. *Duchess d'Angouleme*; on dwarf very reliable. *Seckel*; good everywhere. *Lawrence*; does well all over our State.

Dagger.—*Ambreus*; promises so far to do well here. *Mount Vernon*; this, so far, promises well. *Triomphe d'Joligne*; a fine grower, fruit of high flavor. *British Queen*; fruit large, flavor high, keeps well, tree rather a poor grower. *Dane's Hovey*; tree a fine grower and coming into bearing early—fruit high flavored.

NOTE.—The *Doynne Boussock* and *Sean's Orange* do well in some localities, and we think the last when better known will become a popular market fruit.

APPLES.

One Star.—*Early Harvest*; a moderate bearer, fruit excellent. *English Russet*; does well on warm land. *Long Island Russet*; an early and abundant bearer. *Peck's Pleasant*; flavor good, requires only to be more generally known. *Robertson's White*; an abundant bearer. *Summer Rose*; a delicate fruit for table, not much grown.

Two Stars.—*Astrachan Red*; bears well only on aged trees. *Drap d'Or*; the only objection to it, the trees grow slowly. *Jeffers*; in some counties does well. *Roches Genet*; a good bearer and keeps well. *Summer Pippin*; one of our best early apples. *Smith's Cider*; the most profitable sort grown here. *Snookhouse*; highly esteemed and widely disseminated. *Talphocken Pippin*; (Fallawater), tree good bearer, fruit large—much grown by our farmers. *Terksbury Winter Bush*; a good bearer and keeps long. *York Imperial*; this and *Smith's Cider* are the two leading apples of Maryland.

Dagger.—*Alexander*; so far this promises to suit here.

Very respectfully,

W. D. BRACKENRIDGE.

Report from Virginia.

P. BARRY, *Chairman General Fruit Committee*:

Dear Sir—Since our report to you, two years ago, we have had but little opportunity of passing upon the merits or demerits of the different fruits, as a severe late Spring frost destroyed the greater portion of the crop of 1874, and a freeze of great severity, from the 17th to the 20th of April of the present year, while the trees were in the height of blooming, left over the greater part of the State scarcely a cherry, apricot, peach, pear, and very few apples, to remind us of the season of their ripening. In a few counties on the Northern or Northwestern boundary of the State there was a fair crop left. This escape from destruction by the freeze that was so fatal in other sections, was because of the more backward condition of the trees—the blossoms not being open at that time. This misfortune will to a great extent, if not wholly, deprive us of the means of making an exhibition of Virginia fruits at your meeting, which we regret very much. We have lost nearly the entire crop over a large portion of the State, yet we have learned that orchards in some localities even in unfavorable seasons seldom fail to produce fruit. We know of some that are fully exposed to the West and North winds, and situated three to five hundred feet *above* the general level of the surrounding country, that seldom fail to yield a fair crop, while those not so elevated are often nearly destitute of fruit; then again, on the margins of our large streams or great bodies of water a crop is often gathered while almost an entire failure will be found in less than a mile distant from the water. The fruit buds in this latitude are seldom injured by the cold of the winter months, but are destroyed by the Spring frosts after the blossom-buds have opened. The influence of these large bodies of water seem to give a greater protection where the orchards are located on the East to the South shore, our prevailing cold winds mostly coming from the different points from the West around to the North, are frequently so modified in temperature by passing over the water as to render them harmless to the fruit-blossoms, while a mile or two inland beyond this water influence nearly all may be destroyed in one night.

Taking Virginia altogether, we think there is scarcely a State in the Union that will equal her in natural advantages for general fruit growing.

If not out of place at this point, allow us to put in a word concerning the arrangement in the catalogue of fruits recommended for this State. We feel that the catalogue of apples, as made out for Virginia, is very imperfect—not but that each sort will do well in *some* part of her territory, but because there is so much difference between the soil, climate, altitude, &c., of the different divisions that but few sorts, at least of *late* kinds, will do well throughout the whole State. Some kinds that are *best* in the Blue Ridge region, or West of it, are of no value in the tide-water district, and *vice versa*; so that, to take the catalogue as it now stands as a guide to make a selection, there would be just as many chances to go wrong as there would be to go right, as it recommends these varieties for Virginia, not specifying the division they are best suited to. There should be at least three columns for the State: One for tide-water, one for Piedmont, and a third for West of Blue Ridge; then state the varieties according as they succeed in the separate divisions. This division is only required for the catalogue of apples; with other fruits there is not the same necessity for it. We are aware that this will consume a good deal of space if carried out for all the States that may require it, but we feel confident that it would be well applied and turn what is now to Virginia an almost useless catalogue into a very valuable one.

APPLES.

Within the past few years there has been considerable interest manifested in the planting of apple orchards for market, and very properly a tendency to diminish the number of *varieties* of all fruits in such planting; but it is a difficult task for the inexperienced to make judicious selections from the long array of names presented in the catalogues, as the value of varieties vary so much in different places. Yet nurserymen cannot reduce their lists very much, as it seems they are required to grow a great number of kinds to meet the wants of their customers in the varied localities. In looking over the list as made out two years ago for this State, we do not feel that we have any reason to change it for general planting; yet there are some new candidates for public favor that we cannot pass without naming, and we also wish to put in a word of commendation for some of the older sorts.

Young America.—Is a new variety; above medium size; beautiful orange color; ripens in Southeastern Virginia the latter part of June; tree healthy and comes early into bearing. Originated in Sussex County, Virginia.

Nansemond Beauty.—Originated in Nansemond County, and named by the Chuckatuck Agricultural Club from its appearance. It is a red Winter apple, as large or larger than the *Winesap* (which here equals the *Baldwin* as grown North in size); color brighter, approaching carmine; excels *Winesap* in keeping qualities; excellent for market and dessert; is regarded as a great acquisition where it originated, as there is a great scarcity of good Winter apples in that part of the State.

Edward's Early.—A comparatively new sort. Regarded as one of the very best early sorts in the Northern part of the State, where it is receiving considerable attention.

Among the older varieties we may name the *York Imperial* (or Johnson's fine Winter) as continuing to grow

into public favor, and its excellent bearing and keeping properties entitle it to be classed among the most valuable sorts for the Piedmont and valley districts of this State.

Rachel's Gemet.—In these seasons of late Spring frosts shows its just claims to the title *Never Fail*, by which cognomen it is known in some parts. Being about ten days later in putting forth both leaf and blossom-buds than other varieties, it is not often killed by frosts that destroy other sorts; it is also a good keeper, and should be largely planted above tide-water.

A correspondent in the Northern part of the State, who is well acquainted with fruits and the wants of his section, would give one star to each of the following named sorts, except *Edward's Early*, to that he would put two stars:

Edward's Early, *Cooper*, *Fall Win*, *Roman Stem*, *Meal's Keeper*, *Ridge Pippin*, *American Golden Russet*, *Winter Cheese* and *Tocksbury Winter Blush*.

Another intelligent fruit grower, located as above, would, in setting an orchard of 3,000 trees, put the selection about as follows:

- 200 *American Golden Russet*,
- 200 *Wine*,
- 500 *Winesap*,
- 500 *Albion or Pippin* (*Neatoun Pippin*),
- 500 *Smith's Cedar*,
- 200 *Lady Apple*,
- 300 *Rachel's Gemet*,
- 300 *Tocksbury Winter Blush*,
- 100 *Grinestone* (*American Pippin*),
- 200 *Milam*.

PEARS.

There is an evident increasing interest in the cultivation of this fruit. It is not only being more generally planted for family use, but large orchards are being set out for market purposes, and we think with a good prospect of success, for a considerable portion of the State seems well adapted to growing them. Care, however, should be observed in selecting a site for the orchard, avoiding a poorly drained soil; whether it be high or low ground, for the pear tree will not bear *wet feet*. Neither should the soil be exceedingly rich, or one that will induce a very rapid, succulent growth of wood.

The blight is the greatest drawback to pear culture here; yet there are many orchards that are comparatively free from its ravages. It showed itself to a considerable extent in the Summer of 1874, but the present year, up to this writing, has been remarkably free from it, notwithstanding the prediction of knowing ones, that we would suffer to an unusual degree. There is still a wide difference in the opinion of cultivators as to the cause of the disease. One correspondent writes on the subject as follows:

"Timely and judicious cultivation on well-drained soil never, in the writer's opinion, induced blight. Just here I may be permitted to state the following incident in regard to pear blight: In the Spring of 1870, an intimate friend and myself each purchased one hundred pear trees from the same nurseryman; sixty of his trees were *Bartlett* standards, very handsome two-year old trees, a special selection; mine were all *Bartletts*. As a matter of convenience my friend, in opposition to my advice, planted his trees on one end (in extension) of his young apple orchard, where there was deficient *surface* drainage; mine went on a sloping hillside of recently cleared land. The first two years

his trees, manured in the holes, outgrew mine planted in the natural soil. During a visit in the Spring of the third year, I found his carts busy manuring these trees with farm-pen manure. His trees had *made prodigious growth the preceding year*, Winter had been unusually mild, and there was *no blight* on any of his trees. My remark to him was: 'You will kill your trees with over-feeding! Suppose a rainy Summer comes, a late Fall-growth you will surely have, let next Winter be a severe one, and July and August will bring you blight.' I regret to say that the prediction was literally verified; there are not one-tenth of the *Bartletts* living to-day. The destruction was almost entire. Of my own trees not one of the hundred has lost a twig by blight, and, but for untimely frost, would have yielded sundry boxes of fruit this Spring. Let the various theories of the fungoid origin of blight be true or otherwise, all the facts in the pathology of the disease clearly show poisoned sap. It is more important for us to know what culture and precaution are necessary to success in growing pears, than to be hunting specifics and local remedies, including surgical aid in the amputation or removal of the dead part. Sap diseases are analogous to certain blood diseases of the human family, and often beyond the *reach of surgical aid*, and the physician may find all remedies unavailing when the poison has slowly wrought such changes in the normal condition of the blood itself as to render any sudden shock to the system quickly fatal. Why do we find blight showing itself after rains, storms, and hot suns on the soil in Summer? Does any one, who has carefully made a clinical inspection of pear trees in Fall, Winter, and Spring, preceding the attack of blight, fail to find some *symptoms of the approaching disease*? Notwithstanding all the cancer doctors, consumption specifics and quack pretenders to cure such maladies as blight in pear trees, as many people and pear trees die of these incurable disorders as in former years—not that I would say that no case of *blight* or *consumption* are not cured by proper treatment, since I have, in my own profession as physician and horticulturist, seen both repeatedly occur. The point I desire to impress on the reader is, that prudence dictates, all theories of blight *causes* clearly indicate, that which practical experience confirms, *an avoidance of the varieties predisposed to blight, whether by nature or acquired proclivity from nursery treatment*, and the selection of *healthy* soils, either naturally or artificially capable of freeing itself from excess of water which may *indirectly* or *directly*, in connection with external agents of heat and cold, induce the disease—blight."

Another correspondent says: "My opinion is that the pear blight is caused by a want of a free circulation of air in an orchard, causing the sap to be overheated. The greater amount of blighted pear trees that I have seen was in a secluded spot entirely shut in on the North, West and East, and in fact nearly all around; the only opening was Southeast, and this very partial, and the trees were nearly all *blighted*. I have an orchard of twelve hundred trees on the top of a ridge, open on all sides, and I have never seen a blighted tree in it as yet, and it has been planted six or seven years and upwards. This year I have washed the bodies with a strong wash of soft soap, *lime* and a little salt, to cleanse the bodies and prevent the insects from harboring under the bark, and also to whiten the trunk to repel the rays of the sun, as in this climate every tree that leans *from* the South invariably sun-blights on the South

side, and makes a harbor for insects under the bark. The best soil for the pear is a strong clay soil, well drained."

Another, writing on pears, from tide-water, Virginia, says, in speaking of the *Bartlett*: "On high, dry, sandy loams the standards do admirably here; grow well, produce early, and we don't find them subject to blight. On, what some persons consider good soil for pears, *stiff* soil with *clay* in excess, or any soil not well drained, it blights badly."

One says the blight is caused by overheated sap, another attributes it to the free use of stimulating manures, another says it is caused by an excess of water about the roots, and a fourth believes it is microscopical insects. These and many other causes are assigned. Now who is right, or are all to a certain degree right? Perhaps the blight is not always produced by the same cause, but may be traced to different causes. Of ourselves we know of an orchard of one hundred standard trees, mostly *Bartletts*, planted in 1860, by a farmer who always tried to do his work well. He dug large holes and put in them nearly a bushel of manure from his farm yard. His trees grew off beautifully, but in two years commenced blighting and in five years from setting near seventy-five per cent. were dead. A neighbor of his planted one hundred trees, all *Bartletts*, about the same time, on similar soil but without manure, and to-day ninety-five per cent. are living and doing well. The soil in both instances was a rather light *sandy* loam, with a *sandy* subsoil, which gave thorough drainage. Our opinion is, that thorough drainage is absolutely necessary in pear-growing, and that a fair growth of well-ripened wood should be secured, but avoid a rapid, succulent growth; train with low heads, using the knife *very sparingly*.

We respectfully refer you to the list presented by our committee two years ago, as embracing the most desirable sorts for this latitude, and may add that in this section the *Bartlett*, as a standard, stands pre-eminent as a profitable market variety, and the *Duchess d'Angouleme* occupies the same position among the dwarfs.

PEACHES.

The severe late Spring frosts for the past two seasons have destroyed the prospect for crops of this fruit, and prevented us from judging the merits of some of the newly-introduced sorts. Chief among these are the *Early Beatrice*, *Early Louise*, and *Early Rivers*.

The *Early Beatrice* has fruited in the State and showed that it is very early and of good color, promising to be profitable as a very early market sort; it is also a good shipper.

The *Early Louise* is of larger size and nearly as early as the *Beatrice*; melting, juicy and excellent.

Early Rivers.—Larger and a few days later than *Early Louise*. A most excellent peach; should be in every orchard. *Atlanta*, *Foster*, and *Richmond*, come to us with good names, but have not yet fruited here.

Hale's Early rots so badly that we think it should be set aside, excepting perhaps on some high and dry situation. The more wood it makes the more it rots.

PLUMS.

This fruit is so liable to the depredations of the curculio, that its cultivation has become very much neglected. Continual vigilance is necessary to secure a crop.

The *Wild Goose* variety is attracting attention, and we confess we have some hope of it succeeding, even when the other class fails. It is very hardy and said to be much less liable to the attacks of the curculio than other plums.

THE APRICOT

is uncertain to produce fruit because of its early blooming and liability to be killed by Spring frosts. In villages and cities, where from local causes it is protected from frost it bears well.

THE NECTARINE

is so liable to the sting of the curculio that its planting, except in very limited numbers, should not be encouraged.

CHERRY.

This fruit succeeds well throughout the greater portion of the State, and its planting should be extended to a much greater degree. It has a commercial value here that has never been fully appreciated. The *Dukes* and *Morellos* flourish in the tide-water, while the *Hearts* and *Bigarreaus* do well in the up-country.

GRAPES

We refer you to our report of two years ago on this fruit and may add that we have not changed our opinion of the pre-eminent advantages that Virginia offers to any one who contemplates planting a vineyard. We think no other State in the Union east of the Rocky Mountains can equal it.

CURRANTS

are not profitable in tide-water, but succeed reasonably well in the up-country.

GOOSEBERRIES.

The American varieties do well; foreign sorts not worth planting on account of their predisposition to mildew.

RASPBERRIES.

Further trial with the *Brandywine* convinces us that it is the Raspberry for this climate. It holds its foliage well, not flinching under our hot sun, ripens its wood perfectly, and stands the winter without the least injury. It is not quite so productive as the *Philadelphia* (when that variety does well), but is considered a good bearer, and a very good fruit. Indispensable.

The *Herrine* shows well, but we have not had it long enough to fully test its merits; yet we shall be greatly disappointed if it does not come out well.

STRAWBERRIES.

are still grown largely for market, and shipped from Norfolk and Richmond to the Northern cities. The profit is mainly in the first half of the crop, which this year was cut off by a severe freeze while they were in bloom, so that but little money was made by the growers.

Wilson's Albany is still the favorite market berry, and fully seventy-five per cent. of the planting is of this variety.

Charles Downing and *Kentucky* are doing well.

President Wilder is a very nice and good berry, suitable for amateur culture.

Very respectfully,

FRANKLIN DAVIS,

Chairman State Fruit Committee

Richmond, Va., Sept., 1875.

Report from Ohio.

The Ohio State Horticultural Society reported numerous and important changes in the Catalogue for that State, all of which have been made in the revision of the Catalogue. It is unnecessary to print the list of names.

Report from Indiana.

P. BARRY, *Chairman General Fruit Committee, American Pomological Society:*

As intimated in my private correspondence to thee, the apple, peach, pear and cherry crop of Indiana is a failure. It is true there is a scattering specimen of apple and pear all over the State and the same is true of the peach in the Southern part of the State, and a few scattering cherries were to be seen in the season just past, but no where in the Centre or North of the State was enough to justify any attempt at gathering. The grape crop on low situations was destroyed by the frost on the 17th of April. On higher grounds this crop set very well. Such was the condition on my place, and I anticipated a good crop, especially of the *Concord*. But the unprecedented rains have ruined this crop also, by causing it to rot, so that for the remainder of this season we will be virtually without fruit, except what comes from abroad.

The facilities for transportation are such, however, that we are enabled to supply our wants with apples and peaches, but at a figure that will be a bar to their general introduction and consumption by the poorer class.

There are a few blackberries to be seen in the Indianapolis market, but they come from far South of this, as the canes of this kind of fruit, especially the cultivated varieties, are all killed to the ground here.

Strawberries were a full crop and commanded a good price. *Wilson's Albany* takes the lead, though *Green Prolific* when near some variety to assist in fertilizing it, on my grounds has yielded much better than the former. *Jacunda* is too tender for this vicinity. I have tried about forty kinds and think *Wilson's Albany* and *Green Prolific* worth all the rest.

I had two acres in *Mammoth Cluster* Raspberries, but the April frost cut my entire crop down to twenty bushels, nearly all of which came from the variety above named. All the red berries were failures, except *Brandywine* and *Philadelphia*, from which I obtained a few specimens. From a carefully attended plot of *Herstine* I did not get a berry. Off of three-quarters of an acre of *Davidson's Thornless*, we gathered nothing; *Golden Cup*, *Golden Thornless* did reasonably well. *Ontario* is very hardy and gives good satisfaction. In eighteen varieties on my place *Mammoth Cluster* is worth all the rest.

Insects do not trouble us this year except the white grub, and it is always on hand, and in my judgment has done more mischief than everything else put together.

Such a failure in the fruit crop has never occurred before in our history. I do not think this failure will seriously affect the fruit interest of our State, and as we have had forty years without such failure we may reasonably expect to go forty years more before a like misfortune overtakes us.

The apple is the staple crop among fruits of our State. Of varieties there is nothing new. In my immediate vicinity the *Chapton* is rapidly gaining in popularity. It, however, must be tried further before we venture to give it

a national importance. When tried side by side with *Ben Davis* it has proved to be the hardiest of the two. It is a better grower and bears nearly as soon. The demand here is for long keepers of good size and all the better for being red. The *White Pippin* is the only white apple sought for in our market. When we can get it, it is of the very first quality; tree tender while young. *Ben Davis* is perhaps more in demand than any other. I have not prepared this for publication, but rather a compilation of facts to aid thee in thy final report. Hoping to meet thee at Chicago on the 8th of September, I am respectfully,

Thy Friend,

A. FURNAS.

Reports from Kentucky.

LIST OF FRUITS FOR THE NORTHERN PORTION OF KENTUCKY.

APPLES.—*Summer.*

One Star.—Early Joe, Sweet Bough, Sops of wine.

Two Stars.—Am. Sum. Pearmain, Benoni, Early Harvest, Early May, Golden Sweet, Gravenstein, Maiden's Blush, Porter, Red Astrachan.

Fall.

One Star.—Fameuse, Fall Wine, Jonathan, Kentucky White Pippin (origin in Kentucky).

Two Stars.—Fall Queen, Penn. Red Streak, Rambo.

Dagger.—Mary Womac.

Winter.

Two Stars.—Ben Davis, Lady Finger, Lansingburgh, Rome Beauty, Rawles' Genet Smith's Cider, Wine Sap.

Cider Apples.

Two Stars.—Hewes Crab, Heikes' Crab, Red Crab.

For Jellies.

One Star.—Red Siberian.

Two Stars.—Transcendent.

PEARS.—*Summer.*

One Star.—Doyenne d'Ete, Doyenne Boussock,

Two Stars.—Chambers, Bartlett, Beurre Giffard, Tyson.

Dagger.—Clapp's Favorite.

Fall.

One Star.—Belle Lucrative, Duchesse D'Angouleme, (dwarf), Flemish Beauty, Howell, Louise Bonne D'Jersey, White Doyenne.

Two Stars.—Swan's Orange, Sheldon, Seckel.

Dagger.—Beurre D'Anjou.

Winter.

Two Stars.—Lawrence, Vicar of Winkfield.

Dagger.—Beurre Clairgeau.

PEACHES.

One Star.—Lagrange.

Two Stars.—Troth's Early, Tillotson, Large Early York, George IV., Old Mixon Free, Old Mixon Cling, Van Zandt's Superb, Grand Admirable, Ward's Late Free, Heath, Smock's Late, Cooper's Mammoth, Tippecanoe.

Dagger.—Chinese Cling.

APRICOTS.

Two Stars—Early Golden, Moorpark, Peach.

CHERRIES.

Two Stars.—Belle De Choisy, Black Eagle, Early Purple Guigne, Early Richmond.

PLUMS.

Two Stars.—Lombard, Wild Goose.
Dagger.—French Copper, Newman.

GRAPES.

One Star.—Perkins.
Two Stars—Concord, Delaware, Ives' Seedling, Norton, Va., Rogers' 19 and 15, Venango.

GOOSEBERRIES.

Two Stars.—Houghton's Seedling.

CURRANTS.

One Star.—Red Grape, White Grape, White Dutch.
Two Stars.—Versaillaise, Red Dutch.

RASPBERRIES.

Two Stars.—Duncan's Black Cap, Mammoth Cluster, Doo-little.

BLACKBERRIES.

One Star.—Kittatinny.
Two Stars.—Wilson Early.

STRAWBERRIES.

One Star.—Kentucky.
Two Stars.—Wilson, Chas. Downing, Seth Boyden, Downer's Prolific.
Dagger.—Monarch of the West.

LIST FOR THE CENTRAL PORTION OF KENTUCKY, SOUTH OF MULDRAGH'S HILL.

APPLES.—*Summer*.

One Star.—King, Kirkbridge White, Golden Sweet, Allen's Harvest, Hocking, Le Beau.
Two Stars.—May, Red June, Striped June, Chenango Strawberry, Orange Sweeting, Ann. Sum. Pearmain, Early Joe, Gravenstein, Red Astrachan, Benoni.
Dagger.—Doherty Striped.

Fall.

One Star.—Rambo, Premium, White Bellefleur, Lyman's Sweet, Mary Womack, Fall Wine, Ferris.
Two Stars.—Fall Strawberry, Porter, Fall Queen, Maiden's Blush, Fall Pippin, Lady Finger, Roxbury Russett.
Dagger.—McIntyre.

Winter.

One Star.—Lemon, Moore's Sweet.
Two Stars.—Ben Davis Winesap, Hall's Seedling, Rawles' Genet, Winter Pearmain, Pryor's Red, Maxley, Big Green.
Dagger.—Huntsman Favorite, Carson, Gorin's New Russet, Limbertwig.

PEARS.—*Summer*.

One Star.—Madeleine.
Two Stars.—Osband's Summer.

Fall.

One Star.—Louise Bonne de Jersey, Tyson.
Two Stars.—Duchess d'Angouleme, Belle Lucrative Flemish Beauty, Lawrence, Bartlett, Seckel.

Winter.

Two Stars.—Easter Beurre, Winter Nelis.

PEACHES.

One Star.—Cole's Red, Stump the World, Ward's Late.
Two Stars.—Hale's Early, Tillotson, George IV., Crawford Early, Catherine, Columbia, Morris White, Smock's Late, Grand Admirable, Heath, Binford, White Point Cling.
Dagger.—Jersey Seed, Chapline, Shanghai Cling, Shaker Oct. Free.

CHERRIES.

One Star.—May Duke, Gov. Wood.
Two Stars.—Early Richmond.

GRAPES.

One Star.—Clinton, Catawba, Isabella, Diana.
Two Stars.—Hartford Prolific, Concord, Ives' Seedling, Delaware, Venango.
Dagger.—Eumelan.

STRAWBERRIES.

One Star.—Early Washington, Ida.
Two Stars.—Wilson.
Dagger.—Napoleon III., Boyden 30.

LIST FOR SOUTHERN KENTUCKY.

APPLES.—*Summer*.

Two Stars.—Benoni, Early Harvest, Red June, Summer King, Summer Pearmain.
Dagger.—Stark's Seedling.

Fall.

Two Stars.—Ferris, Fall Queen, Lady Finger, Winter Cheese.

Winter.

One Star.—Limbertwig, Winter Pearmain, Shockly, Winesap.
Two Stars.—Ben Davis, Carson, Heike's Seedling, Rome Beauty.
Dagger.—Kinnaird's Choice.

Cider.

Two Stars.—Red Crab.

JOSEPH DECKER,
ISAAC WOODSON,
J. W. WALKER,
S. L. GAAR,
A. D. WEBB,
J. S. BEATTY,

Fruit Committee

Report From Tennessee.

HUMBOLT, TENN., August 20, 1875.

MR. P. BARRY: Dear Sir—In compliance with your request as Chairman General Fruit Committee of the A. P. Society, I take pleasure in reporting that Tennessee has as great diversity and richness of soil as, perhaps, any State in the Union. It is separated into three divisions. The portion lying between the Alleghany and Cumberland Mountains, is called East Tennessee; between the Cumberland Mountains and the Tennessee River, is Middle Tennessee, and between Tennessee and Mississippi Rivers, West Tennessee. The Eastern is mountainous, and the Middle and Western undulating. The larger portion of the State is well adapted to fruit growing—apple, peach, pear, plum, cherry, &c., and also the small fruits. We may say of a truth, that with varieties suitable to different localities, we can grow fruit successfully and profitably and with as little difficulty, as *any other State*. I cannot, however, speak so advisedly and particularly as to varieties for Middle and Eastern as of the Western division, as I failed to receive a report from them. The present crop was generally injured greatly throughout West Tennessee, by late frosts, yet a considerable amount has been shipped from different points. From this place and vicinity, not less than ten thousand crates and boxes of berries, plums, apples, peaches, &c., have been shipped this season to Cincinnati, Indianapolis, St. Louis, Chicago, &c., and commanded the highest market prices.

It is proper for me to state that our people have, for the last ten years, only given attention to marketing fruits. We have for many years been testing the leading varieties of Winter fruits grown in the Eastern and Northern States and find them unsuited to our State, viz: *Baldwin, Spitzenburg, R. I. Greening, Sauer, Northern Spy, &c., &c.* From some cause unknown to us, some of the old varieties that once *did well*, and were largely planted forty years ago, for the past twenty years rot and prematurely drop. We would particularly mention the *Limber Twig, Rawle's Giant, Bellefleur*. These are entirely worthless. We have a number of seedlings, some of which are very valuable and will be brought into notice as we advance in Pomology.

The apple and peach borer, curculio and blight, are all more or less troublesome. Whatever will prevent or exterminate insects or cure the evils we have to contend with in raising fruits, will apply to all sections of our broad land. A great deal more interest is now manifested among us, but by no means what it should be.

The West Tennessee Fruit Growers Association endorse the following list as the best: The two stars indicate the varieties preferred. *Hale's Early Peach* was by them stricken from the list, as it rots too badly.

Respectfully submitted.

Truly yours, &c.,

B. F. TRANSOU, *Chairman, &c.*
State of Tennessee.

APPLES.

One Star.—Am. Summer Pearmain, Clark's Pearmain, Fall Pippin, syn. *Fall Queen*; Greene Cheese, Key's Fall, Lady Finger, Nickajack, Pryor's Red, Red Astrachan, Rome Beauty, Shockly, Sweet Bough, Va. Green, syn. *Turner's Green*; Red May.

Two Stars.—Ben. Davis, syn. *Pennsylvania Cider, N. Y. Pippin, Watercore, &c.*; Bonum, Buckingham, syn. *Nereid-fail, &c.*; Carolina Red June, Early Harvest, Hewes' Virginia Crab for cider, Horse, Hall Seedling, syn. *Yates*, Kentucky Streak, Bradford's Best; Maiden's Blush, N. C. Greening, Oconee Green, Sweet June, Striped June, syn. *Early Red Margaret*, Royal June; Stevenson's Winter, Summer Queen, Summer Rose, Vandevere, Winesap, syn. *Royal Red*; Yellow June, Yellow May.

PEACHES.

One Star.—Allen's October, Druid Hill, E. Newington, Heath Free, Honest John, Shockley's Early Large White Cling, Lemon Cling, Stump the World, Susquehanna, Smock.

Two Stars.—Amelia, Beatrice, Chinese Cling, Crawford Early, Crawford Late, E. Tillotson, E. York, serrate, Eaton's Golden, George the Fourth, Grosse Mignonne, syn. *Kensington*; Heath Cling, Indian Cling, syn. *Georgia Peach*, Blood Cling; Indian Freestone, syn. *Samba*; Blood Freestone, distinct and excellent; Large E. York, Old Mixon Cling, Old Mixon Free, Troth's Early, Transou's Free, syn. *Mammoth Free*.

PEARS.

One Star.—Beurre Bosc, Beurre Clairgeau, Beurre d'Amanlis, Beurre Easter, Flemish Beauty, Kingsessing, Lawrence, Madeleine, Sheldon, Tyson, Vicar of Winkfield, Winter Jonah, Winter Nelis, Sugar, Pound.

Two Stars.—Bartlett, Belle Lucrative, Beurre d'Anjou, Howell, John Williams, Louise Bonne de Jersey, Osband's Summer, Seekel.

FIGS AND POMEGRANATES

Are grown successfully with protection in winter.

QUINCES.

One Star.—Rea's Mammoth.*Two Stars*.—Orange or Apple.

RASPBERRIES.

One Star.—Orange or yellow, Philadelphia, Clark, Hershine.*Two Stars*.—Black Cap, Mammoth Cluster, Purple Cane.

STRAWBERRIES.

One Star.—Agriculturist, Charles Downing, Kentucky, Triomphe de Gand.*Two Stars*.—Downer's Prolific, French's Seedling, Green Prolific, Wilson's Albany.

PLUMS.

One Star.—Peach Plum, Yellow Egg, Chickasaw.

Two Stars.—Canawa, syn. *Robins*; Damson, Wild Goose. A host of seedling plums, some very fine and worthy of cultivation. The *Gages* all do well when not destroyed by curculio, or late spring frosts. Strange to say, the crop of plums this year is larger than usual, while other fruits are almost a failure.

CHERRIES.

One Star.—Bigarreau, May Duke, Elton, Gov. Wood.*Two Stars*.—Black Heart, Downer's Late, E. Richmond, Early May, Morello Seedling.

APRICOTS.

One Star.—Breda.

Two Stars.—E. Golden, Seedlings.

CURRANTS.

One Star.—White Grape.

Two Stars.—Red Dutch.

GOOSEBERRIES.

Two Stars.—Houghton, Mountain.

NECTARINES.

Two Stars.—Early Newington, Seedlings.

GRAPES.

One Star.—Elsinburgh, Israella, Martha, Maxatawney, Salem, Emmelan.

Two Stars.—Catawba, Concord, Delaware, Hartford, Isabella, syn. *Eng. Grape*, Ives, Native Muscadine, Scuppernong.

BLACKBERRIES AND DEWBERRIES.

Our natives succeed without cultivation and could be made very profitable shipped or dried.

B. F. TRANSOR.

Report for Illinois to the American Pomological Society.

As chairman of your Fruit Committee for the State of Illinois, I associated with me Hon. A. M. Brown in the Southern, E. Daygy in the Central, and T. McWhorter in the Northern portion of the State; and the assistance they have rendered will appear below. Each gentleman was furnished with a list of items sent me by your General Chairman of Fruit Committee, P. Barry, of Rochester, N. Y.

Upon mature reflection, and for peculiar reasons, which will appear further on, I have decided to depart somewhat from the course suggested, and report mainly upon the present status of horticulture in the State, prefaced by a brief review of its horticultural history.

In October, 1851, the Northwestern Fruit Growers' Association was organized, and held meetings each year thereafter, excepting 1854, for discussions, addresses, etc., on pomology and general horticulture, until the year 1857. This association, though in name a northwestern society, was almost wholly sustained by residents of the State of Illinois, and accordingly in 1857, when its meeting was held at the same time and place with that of Illinois State Horticultural Society, which had been organized the previous year, that association by vote merged itself into the Illinois State Horticultural Society. The Society has held meetings of four days' continuance each year since, and published its transactions annually. Previous to 1867, the proceedings were published in pamphlet form by contributions of the members, but, in the year 1867, the General Assembly of the State made an appropriation of \$2,000 per annum, which has been continued from that time to the present, enabling us to publish our transactions in full—putting them in book form. These volumes—entitled, "Transactions of Illinois State Horticultural Society"—contain about four hundred pages each, and embrace lectures, essays and discussions, not only upon practical horticulture, but also upon meteorology, entomology, geology and soils,

botany and vegetable physiology, and other subjects which underlie or are directly connected with scientific and practical horticulture. Samples of these volumes are placed upon the tables before you for examination.

The extreme length of this State, extending as it does from the latitude of Northern Massachusetts on the north to that of Southern Virginia on the south, indicates a diversity in climate and consequent diversity in the species and varieties of fruits which can be successfully grown. But differences in soils, subsoils and exposure are far greater; and these, in addition to the variations in climate, have long since proved to the Illinois State Horticultural Society the folly of making, and yearly unmaking or correcting, general lists of fruits. It has been the practice of this Society for a number of years to procure lists of fruits from intelligent and careful fruit growers in different parts of the State, located upon different soils, which have best succeeded with them; and these lists have proved far more valuable to those about to plant trees, than the previous and more general lists. You will therefore excuse me if I do not comply with the request to give a complete list of species and varieties best adapted to cultivation in the State. I will, however, append a partial list of apples, embracing those varieties which succeed better than others in various localities and soils.

Of the different soils in the State the loess formations along the river bluffs are undoubtedly the best for growth of healthy, productive fruit trees. In many places, as at Alton, this loess is of great thickness and of a fine, firm texture, yet sufficiently porous to admit of perfect drainage to the roots of trees. This is noticeable in cases where deep cuts for streets were made twenty to thirty years since, the walls of which still stand perpendicular. The soil of the bluffs and ridges of Southern Illinois consists of an extremely fine comminuted clay, strongly impregnated with iron, reaching to a depth, at Villa Ridge, eighty feet in thickness. So extremely fine is this soil that it has been used without bolting for polishing brass and silver. In this soil the pear and peach flourish admirably; in fact, the only drawback to profitable fruit-growing in the southern part of the State is the distance from market and the great expense of sending to the markets by express. It is hoped that soon the railroad companies will be compelled to do this express business and guarantee careful handling and speedy delivery of fruits (accidents excepted) at a moderate profit for such service; and when this state of things shall be inaugurated, the railroad owners, the fruit-growers, and the consumers will all alike be benefited and an immense impetus be given to production throughout this, one of the best fruit-growing regions east of the Rocky Mountains. The undulating timbered lands of the central portion of the State also produce, almost uniformly, good crops of apples, hardy grapes, *Early May* and *Morello* cherries; pears—when the trees escape blight—peaches, one crop in three or four years; and abundant crops of the small fruits. The extensive prairies of Illinois are not as surely productive of good orchard crops; though, where proper attention is paid to drainage, a fair crop of apples is the rule. Grapes and berries grow in abundance and with only moderate cultivation; so abundant indeed is the crop of *Concord* grapes on the prairies that they were sold last year at thirty dollars per ton, at Centralia, and nearly as low at other points, for wine-making.

It is well known to all who have given any attention to the geology of the State, that the drift which formed its soil was from the North, and in consequence, as a rule, the farther north we proceed the coarser the substratum is found to be. Hence, in Northern Illinois the soil of quite a large portion of territory is underlaid with gravel, which gives but little nutriment to roots of fruit trees penetrating it; hence, where the soil overlaying this gravel is only of moderate depth the trees are not long-lived, as they dry out and freeze out quicker than elsewhere, though young orchards of hardy varieties are productive. Much attention has been given to the Siberian apples in the North and to the production of new varieties from seed. Among these the *Marcngo* and *Whitney's No. 20* are generally regarded as best, though the *Coral* and several of Mr. Whitney's seedlings are very fine. The *Tetofsky* and *Duchess of Oldenburg* are quite popular. The large commercial apple orchards of the State are generally located near or adjoining timber lands; so located from the supposition, probably correct, that such lands are better adapted to healthy orchard growths than the open prairie lands. The largest pear orchard in the State is that of Messrs. Fuller & Earle, at Cobden (Southern Illinois), consisting of about twenty thousand trees.

Cultivation.—The opinion was quite prevalent in past years that the soils of Illinois were too rich in humus to favor the production of orchard fruits, and hence it was recommended to seed down orchards as soon as the trees had become well established—say, in three or four years after setting—and in no case to manure orchards; as it was supposed that it would require nearly the lifetime of one generation of trees to reduce the soil to a condition favorable to fruitfulness. It has been found, however, that orchards in grass, especially a tough sod, become sooner diseased, are more preyed upon by bark lice and borers, and become sooner unproductive than those which are judiciously cultivated, and when a decline is perceptible are moderately manured. Scores of "apple orchards in grass," which had become sickly, unproductive and unprofitably have been rejuvenated and rendered productive of fine fruit by the use of the plow, the cultivator, and by enriching the soil. But it is impossible to make invariable rules. The expression which has been repeated at the meetings of the State Horticultural Society, that "brains make the best manure," is verified every year by careful, intelligent cultivators, who use their brains in studying the conditions and wants of their trees, and bestir themselves in introducing suitable conditions, and in supplying obvious wants. The small fruits, especially raspberries, currants, gooseberries and blackberries, richly repay the cost of good cultivation and mulching with coarse manure. Strawberries will bear special fertilizers—such as a mixture of bone-dust, plaster, pulverized hen-manure and superphosphate of lime. They should be mulched late in autumn for winter protection.

Pruning.—This subject is a delicate one to approach, as fruit-growers are separated much more widely in their creeds and practices upon it than upon almost any other point in fruit culture. I will premise the few words I have upon this point with the remark, that what may be correct practice east of the great lakes may not be so with us, and that the "meat" eaten by eastern cultivators has caused many a western one "to offend" in this direction. This is

hardly the place for a full discussion of the reasons for a careful, judicious and very limited use of the knife and saw in our Illinois orchards. It is sufficient to say, that immense damage to Illinois orchards has resulted from an excessive and injudicious use of the pruning-saw—probably more than from any other single cause. It has been found that by a careful attention to the position and direction of branches while young, which is easily given by use of the thumb and finger, and occasionally the knife, during the first six or eight years of the life of the tree, very little cutting will be required thereafter. The point to be gained in the cultivation of apple orchards in this State is to develop an abundance of healthy foliage, evenly distributed over the tree, and not to "cut away half the branches to let the sun shine upon the fruit." Vine-growers do not pinch their vines back as severely or as often as in former years, having found that two summer pinchings of each bearing branch—leaving three or four leaves beyond the last cluster at the second pinching—is on the whole more economical than three or four pinchings and summer prunings of each shoot, still practised by some vineyardists. A renewing the vineyard by layering a shoot between the vines, once in about four years, is recommended by some and probably a majority of our best vine-growers, as the best fruit grows upon vines from two to four years old.

The Present Status.—Three consecutive years of almost unprecedented drouth followed in the winter of 1874-5, by long-continued cold of an intensity almost unparalleled in this latitude, well nigh proved fatal to our fruit trees. But the copious rains of the past summer, together with a general barrenness of our orchards, such as never has been before known in the State, and which has been so deeply deplored by many, have resulted in producing a good wood growth and preparation for future health and productiveness. I hazard little in saying that had our orchards been as productive this year as for the last two years, and the season as dry, one half at least of all the orchard trees in the State would have been ready for the axman upon the recurrence of another spring; so that the apparent calamity of unprecedented barrenness will doubtless prove a rich "blessing in disguise."

I append reports from Hon. A. M. Brown, of Villa Ridge, Pulaski County (for the South), and Tyler McWhorter, of Mercer County (for the North); also a very limited list of fruits for the State at large (though by no means everywhere reliable as a guide), made out jointly by our late lamented President, Dr. E. S. Hull, of Alton, and myself.

All which are respectfully submitted,

O. B. GALUSHA.

FRUITS FOR SOUTHERN ILLINOIS.

By A. M. BROWN, Villa Ridge, Pulaski Co.

The species grown to a greater or less extent, are Apple, Pear, Peach, Plum, Cherry, Quince, Grape, Strawberry, Raspberry and Blackberry.

Plums are not largely grown on account of the difficulty of protecting them from the ravages of the Curculio; and Cherries of the finer sorts are not much cultivated, for the reason that the season is too long for them. The leaves mature and fall off so early that a second growth succeeds in the fall, and the result is that the trees become unhealthy.

APPLES—*Summer.*

One Star.—Virginia May, Benoni, Summer Queen, Am. Sum. Pearmain, Fall Pippin, Maiden's Blush, Sweet Bough, Rambo.

Two Stars.—Early Harvest, Red June, Red Astrachan, Early Pennock, Buckingham

Autumn and Early Winter.

One Star.—Smith's Cider, Yellow Bellflower.

Two Stars.—Spark's Late, Rome Beauty, Ben Davis.

Late Winter.

One Star.—Rawle's Genet, Limbertwig.

Two Stars.—Winesap, Fink.

PEARS.

One Star.—Madeleine, Julienne, Beurre Giffard, White Doyenne, Grey Doyenne, Duchess D'Angouleme, Belle Lucrative, Buffum, Onondaga, Louise Bonne de Jersey, Glout Moreau, Doyenne de Alencon, Passe Colmar, Beurre Easter.

Two Stars.—Bloodgood, Bartlett, Seckel, Beurre d'Anjou, Lawrence.

PEACHES.

One Star.—Early Crawford, Heath Cling.

Two Stars.—Hale's Early, Troth's Early, Large Early York, Old Mixon Free, Old Mixon Cling, President, Stump the World, Smock.

CHERRIES.

One Star.—English Morello.

Two Stars.—Early May, Gov. Wood, May Duke.

GRAPES.

One Star.—Concord.

Two Stars.—Ives' Seedling.

The only sorts grown for market.

STRAWBERRIES.

Two Stars.—Wilson's Albany, Charles Downing. A promising new variety originated by George M. Endicott, of Villa Ridge, which he proposes to call Endicott's Seedling.

RASPBERRIES.

One Star.—Philadelphia.

Two Stars.—Doolittle, Miami, Turner.

BLACKBERRIES.

One Star.—Wilson's Early.

Two Stars.—Lawton, Kittatinny.

Injurious Insects.—Curculio (Plum), Codling Moth, Peach Borer, Root Aphid.

There are other insects which do more or less damage, but these are the most important.

Diseases.—Pear blight; rotten root in Apple, Pear and Cherry trees; rotting or specking of fruit on the trees, especially certain varieties of Apples—cause unknown; yellow rust in Blackberries, especially Kittatinny; Grape rot; premature falling off of the leaves in Cherries and some varieties of Pears.

Intelligent cultivators are, as rapidly as possible, contracting the number of varieties of all sorts of fruits and planting only those that have proved themselves least subject to disease, and most productive of salable fruit.

FRUIT GROWING IN NORTHERN ILLINOIS.

By T. McWHORRER, Uedo, Mercer Co.

O. B. GALUSHA, *Secretary, &c.*

Dear Sir—The discouragement that at the present time hangs over the fruit growing interest of our section of country renders it a painful task to comply with your request for a pomological report.

About five years ago the Illinois State Horticultural Society took action to prosecute inquiry concerning "the causes of the failure of Apple orchards in the EAST." The tables are turned. It now devolves upon us to institute the same inquiry concerning WESTERN orchards!

While, as horticulturists, we would gladly pass over these unfruitful seasons as silently as possible, yet we are compelled to face these questions publicly, for the failure of our fruit crops is a matter which cannot be kept from publicity.

Twenty-five years ago, with what buoyancy the North-Western Fruit Growers' Association held its annual gatherings and filled long tables with the beautiful, perfect specimens that were the products of our first orchards; it will not be forgotten that we then indulged in a little pride in seeing our fruits on the tables in contrast with Eastern collections. If we were then a little vain, it may be proper that we are now a little humiliated. We have passed through the same or similar experience that follows the settlement of most new countries. On the first settlement of any section of country the insects and diseases that infest the fruit trees of older regions do not at first appear; but these pests are sure to follow. Fruit growing seems always attended with more difficulties as the country grows older. But the most serious disasters that for the past few years have affected the interest of fruit growing in Central and Northern Illinois, have resulted from a succession of unfavorable seasons.

The most serious difficulty in fruit growing in the whole Northern portion of the Mississippi valley is the vicissitudes of our climate. Our fruit trees were seriously injured by the winter of 1873-74. Added to this, for three successive seasons previous to the present summer, we had an extreme scarcity of rain. Our Strawberry beds wholly died out in some localities. In seasons of excessive drouth—such as was the summer of 1874, fruit trees cannot store up the vitality required for the next year's crop. The unfruitfulness of our orchards the present year is mainly the result of the excessive drouths of previous years. We all understand that when trees exhaust themselves by producing an excessive crop they are generally unprepared for a succeeding crop. Excessive drouths seem to leave the trees in much the same condition.

Our young specimen orchards were seriously damaged by the winter of 1873-74; this, added to the drouths of '73 and '74, caused the barrenness of our orchards the present year, accompanied by a slight fall in the barometer of our pomological enthusiasm.

With regard to Apples, it is a notable fact that within the last decade of years, among all the new varieties that have elicited the attention of Western horticulturists, that scarcely a single variety claims attention on the merits of the quality of the fruit. We seem to be aiming to greater hardiness, productiveness or keeping qualities; we can hardly claim to have advanced a single step in improved quality. We are doubtless too delinquent in producing seedlings from our improved varieties.

Owing to our late, warm autumns, much loss and waste of fruit occurs from the habit many varieties have of prematurely dropping from the trees. This difficulty seems to prevail most with such as have originated North—such as Rhode Island Greening, Roxbury Russet, Jonathan, Wagener, &c. For this reason I have inclined to look to Southern kinds for improvement in keeping qualities. Several years ago I procured a collection of Southern varieties; among them proved to be several synonyms, many proved not hardy, some small and worthless. Owing to unfavorable seasons, perhaps none of them have yet had a fair trial. The only varieties which I could safely name as giving much encouragement, are the Red Warrior and the Red Ox; at least, these are worthy further trial.

Pears.—On the subject of Pears we have little to say. The trying severity of the last few seasons with us, has tended to considerable discouragement also in Pear culture. Pear orchards located in the Loess soil of Mississippi bluffs seem to afford the most encouragement. Our best success is with standard trees—dwarfs have lost all repute.

The most hardy varieties seem to be Beurre d'Anjou and Flemish Beauty.

Cherries.—Our recent severe winters have left scarcely a single tree of the finer varieties. Early Richmond (Early May if you choose) seems the only variety of value to us, that, to my knowledge, is well tested, though considerable has been said of a few other sorts. The Early Richmond produced an excessive crop last year, but no fruit this year.

Grapes.—If required to decide what one fruit of the highest value stands among the productions of the last half century, I would feel compelled to say the CONCORD GRAPE.

The last decade of years has brought forth many new, and in some respects valuable varieties of Grapes—at least such as we would esteem as "valuable" if we had not the Concord.

We like the Delaware, but few of them find their way into the market; we like Rogers' No. 15, when we can get them; but through all the vicissitudes of our capricious climate for the last five years, the Concord has withstood all the inclemencies—tied up to stakes, and has not failed in that time to produce a bountiful annual crop. On some exposed grounds where clean cultivation had not been continued into late summer, the surface roots of even the Concord were injured by the deep freezing of the last winter. But under any proper management the Concord Grape is decidedly more hardy than the average trees of our orchards, and if nature has ever produced a fruit that will never disappoint our expectations, it seems to be the Concord Grape.

Report From Iowa.

P. BARRY, *Chairman General Fruit Committee, American Pomological Society:*

As all but one of my associates who were appointed to aid me in making a report upon the fruits of this State have failed to respond, we have come to the conclusion that the best thing we can do is to draw upon the resources of our State Horticultural Society, through its published transactions, which embraces the experience of our best Horticulturists throughout the State, who meet annually, and discuss the various questions relating to Horticulture and revise our fruit lists. Our Society has divided the State

into three divisions, Northern, Central and Southern, with a separate list of fruit for each division, and have also divided the State into ten districts, with a Director for each district, whose duty it is to make an annual report.

The information called for in your circular may be found in the following brief statement: 1st. The species of fruit that are grown most successfully in this State are apples, grapes, some varieties of cherry, and most of the small fruits. Pears and Peaches are grown to some extent in the Southern district. With regard to the apple, experience has taught us that many choice varieties that are profitably raised at the East, are not suited to our soil and climate. Again, some varieties only second-rate at the East, are classed as first-rate here, and we also find that some varieties that once bore an excellent reputation are losing their character; this we attribute mostly to the change in the soil from its virgin state to the exhausted condition, for we find in the newer portions of the State these same varieties still maintain their good name. Disease, insects and age of the trees, also have their influence. Our old orchards are on the decline, showing with unerring certainty the effects of the severity of our climate, and one or two more such winters as the past, will finish up the work so effectually that new orchards must be planted to take the place of the old.

2d. The varieties that have proved to be the best adapted to our State are those that have been recommended by our State Society, and are as follows:

APPLE LIST.—NORTHERN DISTRICT—FOR GENERAL CULTIVATION AND MARKET.

Summer.

One Star.—Red Astrachan.

Two Stars.—Tetofsky, Sops of Wine, Duchess of Oldenburg.

Fall.

One Star.—St. Lawrence, Fall Orange, Plum's Cider, Gros Pomier.

Winter.

One Star.—Fameuse, English Golden Russet, Talman Sweet.

Two Stars.—Ben Davis, Walbridge.

FOR AMATEUR AND HOUSE USE.

Summer.

One Star.—Early Joe, Sweet June, Williams Favorite, Early Pennock.

Fall.

One Star.—Dyer, Bailey Sweet.

Two Stars.—Lowell.

Winter.

One Star.—Rawle's Genet, Willow Twig, Jonathan, Jewett's Fine Red.

PROMISING FOR TRIAL.

Summer.

Wealthy.

Fall.

Pewaukee.

Winter.

Buran and Lawver.

CENTRAL DISTRICT—GENERAL LIST.

Summer.

Two Stars.—Red Astrachan, Benoni, Duchess of Oldenburg, Early Pennoek, Tetofsky.

Fall

One Star—Rambo (top worked).

Two Stars.—Lowell, Cole's Quince, Chenango Strawberry, Fameuse, Maiden's Blush (top worked).

Winter.

One Star.—Gilpin, Wagener.

Two Stars.—Jonathan, Winesap, Willow, Rawle's Genet, Ben Davis, Dominic, Grime's Golden.

AMATEUR AND HOME USE.

Summer.

Red Astrachan, Early Pennoek, Oldenburg, Sops of Wine, Red June, Tetofsky, Sweet June, Early Joe (top worked), Early Harvest, Benoni.

Fall.

Cole's Quince, Lowell, Chenango Strawberry, Fameuse, Dyer, Gros Pomier, Saxton, Ramsdell Sweet, Rambo, Maiden's Blush, Mother.

Winter.

Ben Davis, Rawle's Genet, Jonathan, Wine Sap, Willow Twig, Dominic, Gilpin, Perry Russet, Westfield Seckno-further, Tahnan Sweet, Roman Stem.

We recommend *Alerson's Early*, a very early, tart cooking apple, a much better bearer than *Early Harvest*. Mr. Suel Foster says: "I would add the *Goff* and *Warfield*, the most profitable Fall varieties in my orchard. The *Goff* is the most remarkable for beauty of tree, beauty and large size of fruit, superiority for cooking, an abundant bearer alternate years. Native of J. S. Goff's orchard, Bellefontaine, Logan Co., Ohio." The *Warfield* is a very young and abundant bearer, very fair, handsome, solid flesh; good shipping and market apple; season September.

SOUTHERN DISTRICT.—GENERAL LIST FOR PROFIT.

Summer.

One Star.—Early Chandler, Red Astrachan, Duchess of Oldenburg.

Two Stars.—Lowell, Maiden's Blush.

Fall.

One Star.—Str. Pippin, Fameuse.

Two Stars.—Rambo.

Winter.

One Star.—Rome Beauty.

Two Stars.—Wine Sap, Rawle's Genet, Ben Davis, Willow Twig.

Gilpin (for cider), Lausingsburg.

AMATEUR AND FAMILY LIST IN ADDITION TO ABOVE.

Summer.

Early Harvest, Sweet June, Early Joe, Benoni, St. Lawrence, Porter, Red June.

Fall.

Mother, Jersey Sweet.

Winter.

One Star.—Dominic.

Two Stars.—Roman Stem, Jonathan, Smoke House.

The *Wealthy* has not been thoroughly tested in Iowa only as a nursery tree, where it has proved perfectly hardy with a most luxuriant deep green foliage. It was raised by Mr. Gideon, of Excelsior, Minn., from seed obtained at Bangor, Me., about the year 1860, having stood the climate of Minn. the past 14 years. The seedling tree proved a young and abundant bearer, fruit medium size, red, and of excellent quality. A notice of this variety, from Peter M. Gideon, dated 12th of July, 1875, says: "We have but few large apples, mostly *Wealthy*, as that tree stood the past winter best of all." Many new varieties are being introduced that are natives of Iowa, with hardiness and quality to recommend them.

PEARS—GENERAL LIST

Bartlett, Flemish Beauty, White Doyenne, Bullum, Belle Lucrative, Seckel, Sheldon, Duchesse d'Angouleme, Beurre d'Anjou.

CHERRY LIST.

Two Stars.—English Morello, Early Richmond, Late Kentish.

Dagger.—Lieb for trial.

PLUMS.

Miner, Lombard, Large Damson

GRAPES.

One Star.—Martha.

Two Stars.—Concord, Hartford Prolific, Ives' Seedling.

STRAWBERRIES.

Two Stars.—Wilson's Albany, Green Prolific.

Dagger.—Charles Downing, Downer.

RASPBERRY LIST.

Doolittle, Mammoth Cluster, Philadelphia.

BLACKBERRIES.

Two Stars.—Kittatinny for general cultivation.

Dagger.—Barnard for trial.

Peaches are so uncertain that none are recommended but hardy seedlings that generally reproduce themselves.

The pear is grown to a limited extent in the central and southern portions of the State. Tree short lived and crop uncertain, succeeds best on upland clay soil with standard trees.

Plums are perfectly at home here and abundant crops might be grown if not molested by the little "Turk," but nothing has been found yet to stay his ravages, save "*Hull's Curculio Catcher*," or "*Weirs' Trap*," which are not considered practical things to use by the amateur or common farmer, and the field is still open for some live Yankee to make his fortune by inventing a cheap and easy method of preventing the work of this destructive little insect.

Very respectfully submitted,

G. B. BRACKETT, *Chairman*,
SUEL FOSTER.

Denmark, Iowa, Aug. 16, 1875.

4th. "WHAT INSECTS."—Coddling Moth, Borer, Bark Louse, Canker-worm, etc. Remedies:—I have pastured my hogs in the orchards with good success, but not fully a preventive. The canker-worms attacked my orchards this year and had done considerable damage before I discovered them. I took a small brass pump and sprinkled the trees with Paris Green, which killed great numbers of them; but very soon after I began the work of poisoning, the worms ceased where I had not applied it. My remedy should have been applied sooner. I applied it on the *Ben Davis* and *Willow Twig*, where there was a crop of fruit, and I think it checked their work very much. It is possible that a numerous lot of hogs, through early spring and summer, might have checked their mischief, but my hogs mostly died of cholera last fall and winter, so I had none in the orchards. The canker-worm was very destructive in this county this year.

Report from Nebraska.

P. BARRY, Esq., *Chairman Fruit Committee American Pomological Society:*

Dear Sir—In presenting the enclosed report, we would beg leave to state that, although there are many more varieties of some of the fruits in cultivation in the State than are named in this report, we have thought best to only make mention of a limited number of varieties which have been thoroughly tested; believing a list of too many kinds only confuses those who are seeking information as to planting orchards.

The following fruits are grown with more or less success throughout the State: Apples, pears, peaches, plums, grapes, cherries, apricots, strawberries, blackberries, currants, gooseberries and raspberries.

APPLES.—*Summer.*

One Star.—Early Harvest, Red Astrachan, Early Pennock.

Two Stars.—Red June, American Summer Pearmain, Bullington's Early, Cooper's Early White, Williams' Favorite, Duchess of Oldenburg.

Autumn.

One Star.—Maiden's Blush, Rambo, Jersey Sweet, Fall Wine, Drap d'Or, Hubbardston Nonsuch.

Two Stars.—Fameuse, Gabriel, Autumn Strawberry, Summer Bellflower.

Dagger.—Porter, Peck's Pleasant, Otoe Red Streak (late fall or early winter), Nebraskian.

Winter.

One Star.—Ben Davis, Rawle's Genet, Jonathan, White Winter Pearmain, Yellow Bellflower, Clyde Beauty, Swaar, Esopus Spitzenberg, Northern Spy, Willow Twig, Talman's Sweet, Red Detroit.

Two Stars.—Winesap, Dominic, Roman Stem, Grimes' Golden, Perry Russet.

CRABS.

One Star.—Red Siberian, Cherry Crab, Yellow Siberian.

Two Stars.—Transcendent, Hyslop.

PEARS.—*Summer.*

One Star.—Rostiezer, Doyenne d'Ete.

Two Stars.—Bloodgood, Beurre Giffard.

Autumn.

One Star.—Buffum, White Doyenne, Beurre Bosc, Louise Bonne de Jersey.

Two Stars.—Howell, Seekel, Duchess d'Angouleme, Doyenne Boussock, Urbaniste, Saint Glislain.

Dagger.—Onondaga.

Winter.

One Star.—Vicar of Winkfield, Nouveau Poitean.

Two Stars.—Beurre d'Anjou, Lawrence, Glout Morceau.

CHERRIES.

One Star.—Royal Duke, Elton, Ox Heart.

Two Stars.—Early Richmond, Belle Magnifique, May Duke, Reine Hortense.

Dagger.—English Morello.

PLUMS.

One Star.—Lombard, Miner, German Prune.

Two Stars.—Jefferson, Kirks, Smith's Orleans.

PEACHES.

One Star.—Troth's Early, George the IV.

Two Stars.—Large Early York, Hale's Early, Early York, Stump the World, Morris' White.

APRICOTS.

One Star.—Breda, Early Golden, Peach.

Two Stars.—Moorpark, Large Early.

Dagger.—Hemskirke.

GRAPES.

One Star.—Hartford Prolific, Iona, Ives' Seedling, Martha, Salem, Goethe.

Two Stars.—Concord, Delaware.

Dagger.—Creveling, Emmelan.

STRAWBERRIES.

One Star.—Agriculturist.

Two Stars.—Wilson's Albany, Green Prolific, Russell's Prolific.

Dagger.—Ellsworth.

BLACKBERRIES.

Two Stars.—Wilson's Early, Kittatimpy.

GOOSEBERRIES.

One Star.—Houghton Seedling.

Two Stars.—Whitesmith, Cottage Girl.

Dagger.—City Green.

CURRANTS.

One Star.—White Dutch, White Grape, Cherry, Prince Albert.

Two Stars.—Red Dutch, Versaillaise.

INSECTS.

During the spring of 1875, the orchards in the south-eastern part of the State suffered severely from the grasshoppers. Before these insects had wings they climbed the trees and stripped them of their foliage and fruit, where the trees were not protected against them. This will damage our crop of fruit in those counties for the present year. Some of our fruit men saved their crop by whitewashing their trees; others by putting bands of satin wall paper and bands of tin around their trees over which insects were unable to climb.

The codlin moth has given us much trouble for the last two years. It has been checked in its ravages by the use of hay ropes, bands of paper, and other means, of which the paper band has been the most effectual.

The flat-headed borer, sometimes attacks young trees before they are established after they have been transplanted; before they get to growing thriftily, but never healthy trees.

The twig-blight has done some damage for the last two years, but we hope it will not seriously injure our orchards.

Our soil is a yellow marl with an admixture of humus and sand, with a sub-soil that is very loose and porous to the depth of from twenty to sixty feet. Our best land for orchards is our highest land.

In conclusion I would say that our State is rapidly developing its resources for fruit-growing, and we hope the time is not far distant when it will be one of the best fruit-growing States in the Union.

Yours truly,

J. H. MASTERS,

Chairman Fruit Committee for Nebraska.

Report on Fruits from Kansas for the year 1875.

P. BARRY, Esq.:

Dear Sir—In compliance with my duty and your request, I submit the following as the fruit report from Kansas:

The summer of 1874 was, during the months of July and August, unusually hot and dry, the mercury ranging, for at least three-fourths of the time from 4th of July to 20th of August, from 92 to 106° in the shade. This extreme heat and drouth produced a good deal of twig-blight on the apple trees; dwarfed many of the varieties much below their usual size. These disasters, together with the invasion of grasshoppers in the latter part of August, made our crop of apples both short and inferior as a general thing. The drouth and hot weather, however, made the peach crop fine, excepting its want of size. The crop of cherries and small fruits was quite up to the usual standard. In the early part of September we had fine rains, which made many varieties of long-keeping apples come up to the usual size—where there was any fruit at all. The grasshoppers, nevertheless, so destroyed the fruit, and so defoliated the trees, throughout the State, as to result in what might be properly called a total failure of the fruit crop, besides producing, after they left, a growth of young unripened wood, leaving the trees thus in a very unsafe condition to meet the rigors of an ordinary winter. But, when it is remembered that the winter of 1874-5 was fully as cold as and much longer continued than the winter of 1872-3, it would be but reasonable to look for a disastrous influence upon the fruit-buds of the following spring. This reasonable anticipation was fully realized in the total failure of many varieties of the apple to bloom, while others bloomed but sparsely and feebly. Those trees in the more western parts of the State first invaded by the hoppers, put forth, in many instances, bloom in the fall, consequently preventing them from blooming in the spring. Thus, with the intense heat, the drouth, the grasshopper raid, the intense and long-protracted cold of the last winter, Kansas was in a poor condition in respect to a fruit crop for the present summer and fall. Added to all these disastrous circumstances is the crowning one of the legions of hoppers produced from the eggs laid the

previous fall. These were truly as fearful as the plague of Egypt. In some few isolated spots they did but little damage, but as a rule they destroyed almost everything. In many places they were so thick that they could be taken up with a scoop-shovel, if they would have remained quiet during the operation. From about the first of May to the middle of June, their devastations were terrible, destroying almost every green thing in the way of field and garden crops for a space of thirty miles wide along the eastern border of the State where the eggs were deposited the previous fall. In the western portions of the State, however, where none or but few eggs were deposited in the fall, finer crops of grains and grasses have been raised than ever before. In the eastern part of the State, garden and field crops planted since the 10th of June promise an abundant crop, so that with the western and eastern parts of the State, Kansas is all right, except in the way of fruit; of this she may be said to be entirely destitute, with much damage done to the trees.

These few sad misfortunes with grasshoppers have learned us enough about them to render their future invasions *harmless*.

I hope you will pardon this seeming digression from proper objects of a report on pomology. I thought the facts detailed might be interesting to some of our eastern friends.

With regard to the fruits succeeding best in this State, so far as I have been able to ascertain, I would say that of the

STRAWBERRY

family, the *Wilson*—take it all in all—stands at the head of the list. The *Charles Downing* and *Downer's Prolific* have many admirers for certain purposes, but none equal to the *Wilson*.

GOOSEBERRIES.

The *Houghton* is the only variety cultivated to any great extent; but since the introduction and production of other small fruits, it is in but little demand in the markets. It will do when nothing better can be had; it is now with the rhubarb or pie-plant pretty generally upon the retired list.

CURRENTS.

These are not cultivated to any sufficient extent to say much about varieties. Most of them will succeed here when protected from the scorching rays of our intense summer suns.

RASPBERRIES.

These succeed well here as a general rule. The *Philadelphia* is the most valuable variety cultivated here for markets near at hand, but is not so hardy in plant as some others. The *Mammoth Cluster* or *Miami Black Cap* is, as far as I am informed, the leading berry for hardiness, production, and for marketing—either near by or at a distance. There are other varieties that are highly spoken of, but, I believe, have not yet come into general cultivation.

BLACKBERRIES.

The old standard *Lanston* is about equal to any cultivated here; but is to some extent liable to winter killing. This, however, can be pretty well prevented by topping or cutting back the young and thrifty canes in June, so that the wood made after that time becomes better prepared, by ripening better, to withstand the shocks of a very cold winter; or,

what is most usually the case, the sudden and severe shock of the coming on of cold in October or November. It is at this time that most fruit-bearing plants are most injured by cold; especially in the West.

CHERRIES.

Of the cherry the *Early Richmond* is most uniformly the leading variety; although in many places the *May Duke* succeeds well, and where it does succeed, is much the finer and more profitable variety. The sweet cherries will do in some places for amateur cultivators, but not as a paying crop. The common *Morrell* does very well as to hardiness and productiveness, but is too acid for anything but culinary purposes, and withal is so disposed to suckers that it is in many situations considered a pest; but for this last habit it would make an excellent stock to work the *Dukes*, and other *Morrells* upon.

GRAPES.

Of grapes the leading variety here for all purposes is the *Cornish*. This is truly "the grape of the million," as Mr. Husmann has very truly remarked; and yet, with all the excellencies of this grape, the vines are in numerous instances becoming diseased and the fruit, as a consequence, subject to rot. These maladies are becoming more and more developed with increasing years. The *Catawba*, once "the grape of the million," the *Isabella*, next to the *Catawba*, at one time, and the *Clinton*, a valuable grape when fully ripe, have almost all disappeared from the vineyards of the country. All of these many years since produced fine crops of fine fruit. What is the reason they do not do so now? The climates where they were once fine are still the same; the soils are still in a better condition to produce fine fruits than they were years ago, from having been reduced in their rampant wood-producing qualities by long use; the method of culture remains the same or nearly so, and yet all of these fine varieties are dying off before they reach middle age, and many of them when they ought to be in the vigor of youth. What then, we would ask, is the matter? Are we doomed to suffer all these evils without a remedy? We think we have the key to this subject, but this is not the place to bring it before the public.

The *Delaware* is a fine grape, but is too liable to the untimely casting of its leaves to be relied upon, hence we must look out for some new varieties or change our mode of cultivation of those we have that are failing. Upon this grape question we have much yet to learn.

APRICOTS.

Of the larger fruits the apricot is one that succeeds well here. The *Breda*, though small, is productive and reliable. We do not know that any other varieties have been tried to any great extent.

PLUMS.

Of plums we know of none that can be relied upon for a crop. We are now trying the *Wild Goose* variety, but have not sufficient experience to warrant any definite conclusions in regard to it. The trees of the wild type are here in abundance and in good health, but the canker or something else destroys almost all of the fruit; hence plum culture here is pretty well given up, even by the amateur.

THE PEACH.

This fruit in suitable seasons is remarkably fine; but it is liable to many casualties, especially the finer varieties.

These last are more liable to have their fruit buds killed by intense cold in winter. One reason of this may be that the tree becomes to some extent enfeebled by being worked on a stock differing in habit and structure from itself. But the main reason, we apprehend, is the want of covering of the germ in the finer varieties, almost all of which have thin gauze-like petals, while almost all seedling varieties have the germ covered with a thick heavy petal, affording it a much better protection than that usually furnished by the finer kinds. We have noticed when the finer varieties are mostly killed, that *Hall's Early* and the *Serrated Early York* are the kinds least hurt. If any escape, it is apt to be these. Both of these have unusually large thick petals to cover the germ. In this we think lies their comparative safety. When, however, they are not killed in the bud, but bloom in the spring, we feel ourselves pretty sure of a crop of fruit. Late spring frosts have never but once in sixteen years' experience blasted our hopes. The reason why, when they bloom that they are not killed, is that in this as in other prairie countries the wind is scarcely ever still during the night; hence the constant evaporation from the bud prevents the cold from injuring the germs. Our falls are usually dry, so that the fruit ripens finely. The varieties of the peach most desirable here, as far as I know, are *Hall's Early*, *Crookford's Early*, *Cob's Early Red*, *Yellow Alberge* and *Heath Cling*.

THE PEAR.

This luscious fruit would succeed finely here if we could avoid the devastating influence of the blight. This dreaded scourge deters thousands from planting to any great extent. In Kansas, we apprehend the groundwork of this disease lies in the depth and virgin richness of our soil. Whether the richness of our soil produces a greater abundance of parasitic plants to prey upon the trees and thus produce the blight, or whether the richness of our soil renders the trees more liable to this disease and thus brings those parasites to the banquet, to this feast of fat things, upon the diseased parts of the tree, are questions which now divide pomologists about equally as to numbers and talents. Our opinions, however, are, the disease invites the parasite, and that the parasite can, in no way compatible with facts and sound philosophy, be shown to be the cause instead of the consequence of the disease. We are also of opinion that when the pear comes to be cultivated in the western part of our State, where the soil is largely intermingled with sand and iron, that it will find a soil well adapted to its wants, producing healthy trees and fine fruit. We are encouraged to this belief from the fact, that now in New Jersey, wherever the soil is most heavily impregnated with iron, blight is not dreaded; especially in the region of Newark, where the soil is colored to a brick-dust red by the admixture of iron. The varieties most esteemed here are the *Bartlett* and the *Duchesse d'Angoulême*.

THE APPLE.

This being the staple fruit of all temperate latitudes, should occupy a conspicuous place in all fruit reports. We will, however, be as brief as we can to be intelligible. Wherever in Kansas a judicious selection of soil and situation are made, both the tree and the fruit succeed remarkably well. The principal diseases to which the trees are liable are the blight, or sun-scald of the twigs as well as of

the trunk, in July and August. The latter is usually found on trees which lean to the Northeast, thus presenting to the sun, about two o'clock P. M., an inclined plane upon which he pours his hottest rays at right angles. This to some orchards is very destructive; inducing not only the death of the bark and surface-wood, but also becomes the lodgement for the eggs which produce the flat-headed borer frequently in abundance. The twig-blight is not a serious evil, as it only affects the present year's growth in almost all cases. The ravages of the round-headed borer can be very materially modified by the timely application, say in May, of a mixture of soft soap and lime, two-thirds of the former to one-third of the latter, brought to the consistency of paint and applied with a white-wash or paint brush. This is offensive to the beetle that deposits the egg as well as, in a measure at least, in preventing the egg from hatching, and if it hatches, the worm will hardly attempt to make its way through this mixture to the bark of the tree. Moreover, this application is one of the very best for the health and thrift of the tree. The codling moth is also troublesome, but whenever we have a full crop of fruit, with the trees in good health, this insect does but little damage; trapping bands on the trees, with hogs to eat the fallen fruit, are the best remedies. The varieties most in general favor, as far as we are informed, are.

For Summer—*Early Harvest*, *Red June* and *Sunmer King*.

Fall varieties—*Maiden's Blush*, *Lowell*, *Fancuse*, *Buckingham*.

Winter—*Ruble's Genet*, *Winesap*, *Ben Davis*, *Willow Twig*, *Smith's Cider*.

There are many fine varieties of the apple grown here, but these seem to be better adapted in tree and fruit for family use, as well as market, than the others.

Thus we have given you a report too long I fear for your patience, but I could not well contract it within a smaller compass.

I am fearful I shall not be able to meet you at Chicago, but will try to be there.

Yours truly,

WM. M. HOWSLEY,

Chairman Kansas Committee.

P. S.—I omitted the *Kittatiny* blackberry in my list. This variety does admirably here.

Report From Utah.

ST. GEORGE, Aug. 31, 1875.

APPLES.

Utah apples are scarcely surpassed by those grown in Oregon, or any other portion of the continent, for either size or flavor. The tree seems to like our volcanic soil, either of Granite, red sand-stone or clay, which is everywhere more or less fertilized naturally with gypsum, lime, and more or less alkali. Where too much of the last abounds (which is not uncommon), the apple and most other fruit trees get the "whites," and sometimes a flourishing tree suddenly withers and is found to be dead above or below the surface of the ground. Among the best varieties here in the South, where the mercury often goes up to 100 degrees and over in the shade in summer, and little or no snow and light freezes in winter, we prefer, for early, *Early Harvest*, *Early Joe*, *Sweet Bough*; later, *Porter*, *Gracenstein*, *Russet*, *Rambo*, *Ben Davis*, *Twenty Ounce*, and for winter, *Esopus Spitzen-*

bury and *White Winter Pearmain*. In the North every variety desired thus far flourishes and does well, makes fruit of large size and of excellent flavor.

We have here a fine red winter seedling we have named "*Higgins Red Winter*," a seedling from the *Spitzsburg*, about same size, deep, handsome red, of high flavor, and will readily keep a year. We are propagating this extensively.

THE PEAR,

like the apple, is natural to our dry, hot climate and sandy soil, and gives us fruit unsurpassed in rich excellence. Trees grow fast and need topping often or they grow to a great height. The fruit grows to great size in a genial soil, *Bartlett's* often weighing a pound and more. In the South here we give preference to *Doyane d'Eté* for early, *Bartlett* for September, and *Nelis* for winter. These fruit heavily and regularly, and are buttery and very delicious. Most varieties flourish all along northward, and there are but few sorts but do well here.

PEACHES

in every variety are greatly superior throughout the mountain country, so far as they will endure cold. Dried peaches from Utah command several cents higher prices per pound over those from any other locality, on account of superior flavor. We have imported and tried a great many cultivated varieties and have many fine seedlings, all of which do well and are of "unimpeachable" quality.

PLUMS,

like the peach, do well in great variety, and we have not imported one that does poorly, and so it is all through the Territory.

CHERRIES

are rather at a discount; they do tolerably in the cooler North, but here in the South all varieties we have tried fail. Trees grow well and are white with bloom in spring, but furnish no fruit.

APRICOTS

are at home in nearly all the settled parts of the Territory, are of high flavor, fruit large, and trees thrifty and healthy. A seedling we have named "*The Gals*," we have found superior to any of the old varieties.

NECTARINES.

What we have said of the peach will generally apply to the nectarine, only it is a little more shy of bearing and tender to late frosts.

ALMONDS.

The tree grows rapidly and large, and always in spring white with bloom; and when not troubled with late frosts bears bountifully here in the South—too tender North. We have seedlings that eclipse any imported sorts, some of which are superior to any we have ever seen.

MULBERRIES.

We have the old sorts and a great variety of seedlings, white and black, some very large and sweet. The trees are thrifty and grow to great size.

GRAPES.

The vine is the great *forte* here; in this hot, arid, climate, they grow luxuriant, both foreign and American sorts, bear

abundantly and all sorts hardy. The flavor of grapes grown here is unsurpassed. They make good raisins, choice wines and rare table dessert.

We would choose from 150 varieties we have fruited, for table, *Muscot Hamburg*, *Gros Colman*, *Chasselas Musque*, *Chasselas Vibert*, *Black Hamburg*, *Boucood Muscat*, *Treutham Black*, *Sultana*.

For raisins, all of the *White Muscats*.

For commerce, *Réin de Nire*, *Black Hamburg*, *Gros Colman*, *Boucood Muscat*, *White Muscat of Alexandria*, *Chasselas Musque*.

For red wine, *Red Lombardy*, *Treutham Black*, *Muscot Hamburg*, *Black Frontignan*, *Black Prince and Isabella*.

For white wines nearly all the *White Muscat* grapes make clear sparkling wines with more or less bouquet.

To the northward, region of Salt Lake City, they grow most of the American varieties, and with a little protection, many foreign sorts, some of which ripen off with a considerable saccharine. *Delaware*, *Iona*, *Emmelan*, *Isabella*, *Diana* and *White Roman* are favorites there.

In this hot and dry climate, all sorts of berries do poorly, but are grown in shade more or less. In the North, currants, gooseberries, raspberries and strawberries, grow luxuriantly, fruit abundantly, and are large, fine and delicious.

J. E. JOHNSON.

Report From California.

P. BARRY, Esq., *Chairman General Fruit Committee, American Pomological Society:*

Dear Sir—In conformity with the directions of your circular, I addressed several of our most eminent Horticulturists, located in the different sections, requesting them to assist in framing a concise report on the Pomology of California. They all professed a desire to fulfil this duty of love, but some, owing to bad health, others, disgusted with the unavoidable impediments in our calling, and others, by stress of business, were not able to respond at once, compelling me regretfully to state that all those applications have failed; consequently I do not feel authorized to make an exhaustive report as designed; but beg to submit such general observations as may be of interest to our co-laborers.

Our winter rains being rather light, the rainfall for the season through the extent of the midland counties not overgauging fifteen inches, and the usual spring showers, with one exception, entirely wanting, it is remarkable that, even in localities without facilities for artificial irrigation, the fruit trees made generally a very good, and the grape vines an extraordinary growth; this is attributable to prolonged cool weather prevailing during the growing season. The trees were overloaded with blossoms and promised an abundant yield, but in many places the severe frosts of the first days of April destroyed some varieties entire and decimated others; the last case was rather beneficial, thus affording the trees a much needed season of rest and recuperation.

This occurrence afforded another lesson, teaching which varieties best withstand those freezes. Thus among apples the *Early Astrachan* and *Harvest* produced full crops, and side by side with them the *Strawberry* only one-fourth; *Pennock*, one-half; *Lyscom*, three-fourths, and *Baldwins*, an entire failure; but *Northern Pippins* are full, whereas *Holland Pippins*, *Rhode Island Greenings*, *King of Tompkins*

and *Russets*, are not above one-fourth. Pears are rather abundant. Apricots and soft-shell almonds suffered greatly, and in some localities, peaches, plums and cherries; all small fruits have done well. The grapes, except in a small district around Los Angeles, were not injured at all, which is ascribed to the practice now prevailing of late pruning, by which the early growth was somewhat retarded, thus escaping a freeze. It is noticed also that considerable elevations, or locations where trees are shaded from the full glare of the sun, are advisable selections for the growth of early blooming fruits.

Caterpillars were very numerous in some districts, and wherever not destroyed speedily denuded the trees of foliage and blossoms.

The great extent of our State, bounded by the Pacific ocean and the high mountain wall of the Sierra Nevada, furnishes all desirable varieties of soil and favorable configuration, climatic peculiarities and facilities for culture, which begins to be fully appreciated, so that all species of fruit grown anywhere through the extent of the temperate and semi-tropical zones, can be accommodated with a congenial home for thriving to perfection; hence, to name one or another variety of certain species as doing best, would be a discrimination not conveying an adequate impression. It can probably be more fitly said, that the profusion with which our markets are supplied, evokes a very critical taste, requiring for gratification, the finest of its kind; so nothing but the juiciest and largest red-streaked or mottled apples; the most spicy and melting of pears; the glossy *Black Tartarian* among cherries; the *Royal* in apricots; the bloomiest of plums; only a *York*, *Crawford* or *Stump the World*, among peaches, have a show for remunerative sales.

The crowned pomegranates, the fig, the olive and the citrus family, all grow fat anywhere, if supplied with the sufficient pabulum of moisture; and the queen of them all, the luscious grape, holds dominion over hill-side and vale, humid or dry; it may be distilling its nectar out of the primitive elements.

F. STRENTZEL.

Alhambra, Contra Costa Co., Cal., Aug. 13th, 1875.

Report from Georgia.

P. BARRY, Esq., *Chairman General Fruit Committee:*

Dear Sir—The fruit crop of Georgia, as an average, is small; this is owing to the frost, which injured the fruit crop more or less through the whole State, on the night of April 26th and 27th last. The upper section of the State suffered comparatively more than the middle and lower sections. In the former the peach crop, with a few exceptions, was nearly a complete failure.

The past Spring and Summer have been unusually unfavorable to all fruits. During March and April copious and general rains fell almost daily; this caused fruit to set badly. During the month of May the weather was unusually warm and dry, in June abundant rains were again prevalent, and all through July the weather was unusually warm and dry, the mercury ranging in middle Georgia between 85 and 103 degrees for a period of nearly four weeks. These abnormal conditions of the atmosphere have not been without causing unusual freaks in the maturity of our fruits, and as the newly introduced early peaches pro-

duced fruit in several sections of the State, these climatic conditions are the cause of the great difference in the maturity of these varieties in middle Georgia.

PEACHES.

Being easily propagated from seed, and will long remain, the most popular fruit in the South. Many of our well defined types, such as the *Indian*, *Lemon Cling*, *Heath Cling*, *Melodan*, &c., are almost invariably grown from seed by our farmers, from the facility with which they reproduce themselves nearly identically, and seldom give inferior varieties in their seedlings. This facility in obtaining fruit of good quality, and during the entire summer, has given our fruit growers innumerable excellent varieties and placed this fruit within every land owner's reach. But, while these seedling peaches give a regular supply to our farmers, the fruit grower who plants for market cannot rely upon this class of trees; although the products may equal, and, in some instances, even surpass in quality those of the well-known named varieties, the latter alone will insure the most profitable results.

Regular periods of maturity are of utmost importance with the peach grower who looks to a distant market for the sale of his fruit. This knowledge has now become well understood among our market-men, and, as a result, very large peach orchards of the leading varieties are planted. The ratio of increase for nursery-grown peach trees has been at least twenty-five per cent. annually since 1870.

The *Early Beatrice* has been fruited in many localities of the State. Every report shows that it is entirely free from decay; its size medium; color very bright and attractive; and quality very good. Its period of maturity, however, has demonstrated the fact, that the condition of the weather during May influences its earliness to a great degree. In sections where the weather during May was of an average standard, and where rains kept the soil moist, the period of maturity of this variety may be set down at ten days before *Hale's Early*. Again, I have the most conflicting reports from other sections. Near West Point, Ga., the *Early Beatrice* ripened twenty-five days before the same variety was fit to gather in Campbell County, which is only thirty miles further North, and where the trees were grown in similar soil. In the latter county, or rather in a portion of it, the *Early Tillotson* ripened in every instance before *Hale's Early*; on the stiff clay soils, and on soils much mixed with disintegrated granite, the *Hale's* were gone when the *Early Tillotson* ripened. Lower, toward the center of the State, the *Early Beatrice* ripened a few days (from three to six) before *Hale's*, in some localities *Hale's* ripened at the same time, but, instead of maturing regularly within a period of a few days, as in former years, its season was carried through a period of six weeks. The evident conclusions in our climate as regards the maturity of our very early peaches is, that in average years when the weather and condition of the soil are normal during May we may expect an early period of maturity. But should the month of May prove very dry the period of maturity will be retarded. The West Point case proves this, that section having received refreshing showers during May, while portions of Campbell County were suffering for want of moisture. In those sections of the State (middle region) where the severe drought prevailed in July, nearly all the varieties of peaches which usually ripen end

of July, did not mature until after the middle of August, and the late August and early September varieties, on the contrary, matured from ten to fifteen days earlier than usual.

APPLES.

The crop is reported small in the mountain regions and below an average in middle Georgia, the July drought causing the fruit to drop prematurely. Reports from two members of this committee state that the *colling moth* has injured nearly all foreign varieties of apples, those which are free from the sting of the insect being Georgia originated varieties, such as *Rhode's Orange*, *Coran's Seedling*, &c. Even some native varieties, as *Horse*, *Shockley* and *Yates*, are more or less affected. No remedies have been found effectual.

Several new varieties of apples have lately been exhibited at the Fairs of our State Agricultural Society, and evince a growing interest among our amateurs to improve our native fruits. A number of seedlings of *Shockley* and other popular native varieties were exhibited last Fall by Mr. Black, of Forsyth, and reflect much credit upon his efforts. In South Georgia few apples thrive; occasionally we hear of successful results, but these are confined to the varieties ripening early or during mid-season.

PEARS.

Average reports give the crop as small and trees much affected by fire blight. Drought of July caused the foliage of most varieties to drop, and, although the fruit was fully exposed to the rays of the sun during the intense heat, still it has been less sunburned and injured than in former seasons, when the heat was less, and the foliage was retained. Our most successful reports are from the coast region, where pears have given excellent crops.

But few varieties are desirable for market purposes; the list may really be reduced to the following and in order of merit:

Dwarf—*Duchesse d'Angoulême*, *Beurre d'Anjou*, *St. Michel Archange*, *Bloodgood*, *Beurre Superfin*, *Quondaga*, *Seckel*, *Horsell*.

Standard—*Bartlett*, *Beurre Clairgeau*, *Flemish Beauty*.

PLUMS.

Reports from every member of the Committee, except in one locality, say that all foreign plums or those of foreign type are worthless, the curculio being its enemy. In some localities of Northeast Georgia the *Elfrey* is very successful. Numerous seedlings of the *Chickasaw* type have made their appearance; some have decided merits as to quality and a number of these ripen end of August and end of September, thus lengthening the season of this fruit for several weeks. We now have good plums of the *Chickasaw* type from end of May until end of September. Not a variety is however entirely free from Curculio, but the insect commits very little injury on this class of plums.

APRICOTS.

Are only successful in city gardens. Trees die very young when planted in open field.

ALMONDS.

Suitable only for the immediate coast belt.

FIGS.

Heavy crops this year all through coast and middle region.

ORANGES.

Considerable interest is given to this fruit in the counties bordering Florida. Crop of fruit is reported good in several localities.

GRAPES.

Crop variable. In some sections the early growth was killed off by frost, and crop small. In others it is very large, and every report says fruit is unusually sound and of good quality.

One instance is given of a vine of the *Warren* or *Herbimont*, which was planted in Madison, Ga., eighteen years ago, and which has yielded fifteen crops of fruit: this year the crop is between three and four hundred pounds of most perfect fruit. Mr. J. B. Shields owns this vine.

In South Georgia the crop is reported as very large. The member of the Committee from Thomas County, who has cultivated the grape very extensively and successfully for the last twenty years, reports thirty-six varieties in fruit, and gives as most profitable and in order of merit: *Scuppernon*, *Concord*, *Hartford*, *Delaware*, *Ives*, *Norton's Virginia*, *Warren*.

Crop of *Scuppernon* is everywhere reported as unusually large. *Warren*, if planted in poor soil, will give better results as regards freedom from decay of fruit than planted in heavy lands. As a rule, this variety is more successful in city gardens than in vineyard culture.

Every report received mentions the entire freedom of diseases on vines; diligent search in different sections of the State has failed to show the presence of the Phylloxera.

In South Georgia, vines have been much infested by Thrips, which perforate the leaf and cause the foliage to fall, thus preventing the fruit from maturing. Last year the *Concord* was much injured in middle Georgia by leaf-rollers or leaf-folders; this year these insects have not appeared.

WATER MELONS.

The County of Richmond has this year produced large quantities of water melons for shipping to Northern markets. Many farmers have planted from thirty to seventy-five acres of this fruit; all of the white and green-striped variety or *Rattlesnake*. Official returns from our tax collector give the number of acres in melons for this County at twelve hundred and sixty. From Augusta and stations on the Central Railroad within the county limits nearly three hundred thousand melons have been shipped to Northern, Western and Eastern markets. This branch of culture has vastly benefited our farmers; especially when other fruit crops were deficient.

In conclusion, I am happy to report a steady and rapid increase in fruit culture, and especially in varieties from which good results may be expected, our fruit growers having learned to discriminate between market and amateur fruits. The liberal premiums offered by the Georgia State Agricultural Society for pomological products have stimulated their production.

Respectfully submitted,

P. J. BERCKMANS,
Chairman State Fruit Committee.

Report from Arkansas.

LIST OF FRUITS RECOMMENDED FOR SOUTHEASTERN ARKANSAS.

By S. J. MATTHEWS, Monticello, Ark.

APPLES.

SUMMER—*May Pippin* (White Juneating), *Red Astrachan*, *Striped June* (Early Red Margaret), *Aromatic*, *Yellow June*, *Large Yellow June*, *Early Harvest*, *Julian* (unsurpassed in productiveness and fine flavor), *Carolina Watson*, *Homing* (*Sops of Wine*), *Family*, *Taunton*, *Smith's Cider*.

FALL—*Baucombe* (Red Winter Pearmain), *Carter's Blue* (most excellent), *Blackshear*, *Carolina Greening*, or *Green Crank*, and *Shannon*.

WINTER.—*Yates*, *Horn*, *Strenson's Winter*, *Tillaquah*, *Shockley*, *Romanite*, *Buccalians*, *Prother's Winter*, *Jackson*, and *Orange Greening*.

The following are popular Southern sorts that have not proved valuable here, viz.: *Kittageskee* is the most rapid growing and handsomest tree, and the most productive of all others, but rots badly. *Janaluskee* rots; *Nickajuck*, too shy a bearer, *Mangum* same. *Marevic's Sweet* and *Hockett's Sweet* rot. *Holly*, tree blights and fruit poor. *King Tom* blights and rots; *Buff* same. *Chestnut* blights; *Winesap* bears so full and looks so handsome is hard to reject, but it rots considerably and is of indifferent flavor. *Rome Beauty*, poor bearer and rots.

PEARS.

SUMMER.—*Doyenne d'Été*, *Osbund's*, *Bartlett*, *Seckel*, *White Doyenne*, *Flamish Beauty*, *Buffum* (for its great productiveness and certain crops, notwithstanding its small size and indifferent quality), *St. Michael Archangel*.

FALL AND WINTER.—*Duchess*, *Beurre d'Anjou*, *Lawrence*, *Easter Beurre*, *Vicar*, and *Winter Nalis*.

The following have proven unsatisfactory—*Bloodgood*, *Tyson*, *Zoar Beauty*, *Darborn's Seedling*, *Beurre Diez*, *Louise Bonne*, *Belle Lucrative*, *Rostiezer*, *Kirtland*, *Kingsesing*, *Beurre Giffard*, *Doyenne Boussock*.

PEACHES.

FREE STONES.—*Hale's Early* (notwithstanding it rots outrageously), *Early Tibbison*, *Tooth's Early* (of which *Fairchild's Early* seems to be identical), *Amelia* or *Rayzor's June*, *Summer Queen*, *Early Barnard*, *Strawberry*, *China*, *Melocan*, *July Favorite*, *Stump the World*, *Columbia*, *Grasse Mignone*, *Golden Juice*, *Snare*, *Pucelle de Malines*, *Late Melocan*, *Crawford's Late*, *Swock*, *Picquett's Late*, *Morris White*, *Lady Parham*, *Baldwin's Late*.

CLINGS.—*Spice*, *Margaret*, *Chinese*, *Florillon*, *Old Mixon*, *English*, *Lemon*, *Bordeaux*, *Indian Blood*, *Doming's Orange*, *Montgomery's Late*, *Heath*, *Eaton's Golden*, *Graham's September*, *Mitchell's Mammoth*, *Eliza Thomas*, *Austin's Late*, and *Cocan's Late*.

NECTARINES

Are all unprofitable on account of the curculio and of being inferior to peaches, ripening at the same time.

APRICOTS

Are not very satisfactory, on account of their liability to be destroyed in the bloom by frost.

PLUMS.

I have tried a number of the finer sorts, none of which succeed on account of the curculio. But besides several varieties of the *Chickasaw* Plum ripening from the middle of May till the first of August, and several of Wild Plums ripening throughout the Fall, the *Damson*, *Wild Goose*, *Minor*, and *Newman* all do finely.

CHERRIES

Except the *Morellas* (which do fairly well), generally fail.

FIGS

Succeed well, the best being *Long Violet*, *Celeste*, *Superfine de Sausage*, and *Brown Turkey*.

GRAPES.

Iees and *Delaware* are the only *bunch* grapes I can recommend for extensive planting here, and I have tested *Concord*, *Clinton*, *Catawba*, *Isabella*, *Israella*, *Rebecca*, *Diana*, *Martha*, *Cresling* and a number of others. They all rot more or less after the first year or two of bearing.

All varieties of the *V. Rotundifolia* succeed here to perfection, are subject to no disease or insect enemy, and are never cut off by frost. Indeed they never fail of a full crop from any cause. I have tried, and can unreservedly recommend, the *Scuppernon*, *Thomas*, *Sugar*, and *Tender Pulp*.

MULBERRIES.

Downing and *Hicks* never fail to produce heavy and continuous crops.

ALMONDS.

Sultana and *Princess* are about as liable to be destroyed in the bloom by frost as Apricots. This year they have borne full.

STRAWBERRIES.

The *Wilson* is still ahead of all others for general purposes.

RASPBERRIES.

Mammoth Cluster and the common *Black Cap* succeed very well, all the finer sorts are short-lived and unprofitable.

BLACKBERRIES

Grow indigenously in such profusion and of such fine quality that no attention is given to the cultivated sorts. *Kittatinny*, with high culture, compares favorably with our best sorts growing in the woods, but the *Near Rochelle* is worthless here. Of other

WILD FRUITS.

We have Huckleberries, several varieties, Persimmons ripening from August to November, and Grapes of the *V. esculenta*, *V. vulpina*, and *V. rotundifolia* types in varieties innumerable.

Nearly all kinds of fruit trees have overborne with us this season, in many cases being badly damaged from breakage of the limbs by weight of the fruit. The weather has been unfavorable for drying, and thousands of bushels have decayed in the orchards.

All of which is respectfully submitted,

S. J. MATTHEWS.

Monticello, Drew Co., Ark., Aug. 31st, 1875.

Report from Mississippi.

CANTON, Miss., Aug. 21th, 1875.

P. BARRY, Chairman General Fruit Committee, &c., Rochester, N. Y.:

Dear Sir—In submitting the subjoined report I do so with the consciousness of being unable to do justice to the subject. The time allotted has been too short for anything like an extended notice of the different fruits.

Embracing about five degrees of latitude, and great diversity of soil—the Southern boundary lying on the Gulf—this State produces many fruits of a tropical nature, while its Northern part grows successfully most of the fruits of temperate climates. Fruit growing, however, is in its infancy yet. Of late years better shipping facilities and the earliness of our seasons giving us the advantage of Northern markets, orchards, for commercial purposes, are springing up along the lines of our railroads, and in a few years immense quantities of fruit will be grown for market. For this purpose the Peach seems to be preferred, but Pears also are being grown to a considerable extent, while Apples, Plums, Grapes, and even Figs have been shipped successfully. I have sent the *Lemon* and *Celeste* Figs to Louisville in good condition, and A. R. Granberry, of Hazellhurst, reports the *Celeste* being sent by him to Chicago, and realizing good profits. Of Grapes the *Hartford*, *Iees* and *Concord* are found best for market, the last especially. But for great yield, sure crop, fine wine, and hardness of vine the *Scuppernon* excels all others. We might almost say that it knows no death.

W. C. Tucker, of Columbus, proprietor of the Washington Vineyard, has grown the *Scuppernon* for a number of years, making an excellent wine from it, which has proved quite profitable. It has several seedlings of excellence, among which the *Thomas* and *Flowers* are best known and are being cultivated to a limited extent. Of Apples the Summer varieties generally do well, and also the Autumn varieties of the North, which are Summer varieties here. Northern winter varieties are entirely worthless. Some Southern winter varieties promise well, such as *Stevenson's Winter* and *Yates*, while *Shockley* in some places does tolerably well. I have kept specimens of *Shockley* until the following June, but it is so much disposed to shed its fruit in August, that I am re-grafting five hundred bearing trees with other varieties, as I consider it not worth cultivating in this immediate locality. Col. Gaines, of State Line, finds the *Santa* a reliable and valuable winter Apple, keeping finely. *Nickajack* is a failure wherever I have heard from it. Of the earliest varieties *Red Astrachan* and *Red June* are most highly esteemed for market, ripening here (Lat. 32½) from about June 6th for a month. *Early Harvest* is fine, esteemed highly for eating and cooking, but trees are very subject to borer. Ripe June 5th to 20th.

PEARS.

Of Pears many varieties are being tested both on Pear and Quince roots. The *Bartlett* is grown more than any other, generally as standard, being the best known. It bears finely and the quality of the fruit very good; but the tree is very subject to blight in some seasons, and on all soils as far as I can learn. It is hardly worth cultivating on low wet soils. *Duchesse d'Angoulême* taken altogether

is the best variety for us for home use, while it is good for market also—have just weighed one which weighed twenty-two ounces.

The *Bartlett*, however, is by far the best selling variety, bringing higher prices than any other. *Sokol* does well; and is perhaps the hardiest variety yet known or tried here. A native variety of large size and great beauty, very early (June 6th to July 1st), but inferior in quality, called the *Jefferson*, sells well, and the tree is very hardy, both on Pear and Quince.

Howell, *St. Michael*, *Archangel*, *Julienne*, *Lawrence*, *Buffum*, *Doyenne Bussocq*, and some others promise well. *Le Cure* rots invariably, and the tree very subject to blight all over the State, far as I have yet learned, entirely worthless. *Madeleine* and *Belle Lucrative* very subject to blight. *Winter Nellis* sheds its leaves. *White Doyenne* does moderately well on Pear stock; on Quince, cracks and spots; and tree is short-lived. *Louise Bonne de Jersey* bears heavily, second quality, short-lived on Quince.

PEACHES.

Peaches do well on nearly all soils, not too wet. *Beatrice* small, good color, good quality, carries well, does not rot. Ripe last of May and first half of June. Tree vigorous. *Hale's* this season generally free from rot; ripe here June 10th to 25th. This is an exception, as it universally rots in wet seasons, and on wet or rich soils. Thin, dry soils suit it best. This season I sent it per express to New York and Philadelphia in good condition by gathering it early. *Yellow St. John* or *May Beauty*, large and handsome, does best on fresh soils. Ripe just after *Hale's* and partly with it. *Crawford's Early* follows *St. John* and sustains its reputation. *Troth's* and *Tillotson* follow, also *Hale's*, the former the better of the two here.

Chinese Cling, the largest and best Peach grown wherever it succeeds. Is very subject to rot with me, but did well this season. At Hazellhurst this season, I am informed, six Peaches selected from a shipment weighed six pounds and six ounces, and the quality of the variety generally was splendid. Its keeping quality is remarkable, and it ripens up well when picked early. *Old Miron Cling* does well everywhere. *Crawford's Late*, fine at Crystal Springs and Hazellhurst, and generally does well. *Susquehanna* splendid here, but crop too light. *Heath Cling* of fair size and fine quality, does well and ripens here August 20th, to September 1st. Later Peaches generally not reliable. We greatly need a good September Peach.

New and valuable seedlings are springing up occasionally and it is hoped ere long one may be found of excellent quality ripening in September. A seedling fruited at Crystal Springs this season, which is likely to be valuable as an early variety. It is reported by Dr. H. W. Stackhouse, of that place, as of "good size, fine flavor, crimson all over, and ripening ahead of any other." A box of the fruit was sent by express to Chicago, and returned in good order, testing its shipping qualities. I learn that Dr. Herrin, of Terry, has fruited this season a seedling of the *Chinese Cling* which is "larger than its parent, and entirely red when ripe."

PLUMS.

Plums of some varieties do well, especially those of the Chickasaw type, which abound in the wild State in old uncultivated fields; and do well under cultivation.

Wilds Goose is large and handsome. Of the finer varieties cultivated in the Northern section of the Union, such as *Green Gage*, *Jefferson*, *Washington*, *Co's Golden Drop*, *General Hand*, &c., I have failed to get a satisfactory crop, and these fail generally as far as my knowledge extends.

CHERRIES.

Cherries of all kinds fail here. The *Morello* and a few others bear tolerable crops, sometimes in the Northern part of the State.

BLACKBERRIES.

Blackberries abound in the wild state in such profusion that but little attention is paid to their cultivation. I have grown fine berries of the *Lauton*.

RASPBERRIES.

Raspberries of the *Black Cap* type do well generally, but the *Autwerp* class succeed poorly.

STRAWBERRIES.

Strawberries are a rather fickle crop, so far as their cultivation has come under my observation. *Wilson's Albany* succeeds better than any other so far as tested; though I have grown occasionally fine specimens of *Triomphe de Gaud*, *Jenny Lind*, *Horcy's Seedling*, and some others. *Jucunda* have tried repeatedly; worthless here.

For information concerning the cultivation of tropical fruits in the Southern portion of this State, I refer you to a paper which our worthy Vice President, D. Redmond, Esq., has promised to read at the approaching session of the American Pomological Convention, on this subject.

The cultivation given orchards in this State generally is performed by the plow, the hoe being used immediately under the trees where the plow cannot be. A crop of some kind, Cotton, Peas, or Sweet Potatoes, is cultivated, especially when trees are small. Private orchards are frequently neglected, or cultivated only occasionally with the plow; and fine Peaches not unfrequently grow in spite of this neglect, but the trees of course are short-lived.

The aphid and borer trouble some varieties of the Apple a good deal; the latter infesting the Peach trees also, while the curculio seems on the increase among the Peaches.

Regretting, for the reasons above stated, that I cannot give you a more systematic and elaborate report, and thereby do the fruit growers of the State, as well as myself, greater justice, I am very respectfully,

Your obedient servant,

WM. H. CASSELL,
Chairman, &c.

Report from Louisiana.

By H. A. SWASEY, M. D.,
Chairman State Fruit Committee.

P. BARRY, Esq., Chairman General Fruit Committee:

Dear Sir—Owing to protracted illness at the time my report should have been written, it has been unavoidably delayed until now—and even now it will be impossible for me to make it as full and comprehensive as I intended. But, in the little time and leisure left me from other demands, I will try to throw together a few facts in regard to Southern fruit culture that may be of service to

the inexperienced. In my desire to place the fruit-growing resources of Louisiana and adjoining States as *reliably* as possible before our Society and through it as a medium to the general public, I repeatedly called for *facts* and *specimens*, and appointed as my assistants on the State Committee, four gentlemen of large pomological experience and, as I supposed, with sufficient enthusiasm in the cause to warrant the confident expectation of full and detailed reports. Two only of my assistants have reported to me. Their reports are herewith transmitted, and in many points will be found interesting and valuable, as they are the recorded experience of careful cultivators and critical observers.

Except in the Northwestern portions, general fruit culture has made less progress in Louisiana than perhaps in any other State in the Union. This is due, partly to the *imagined* uncongeniality of our soils and climate, partly to the general apathy and disinclination of our people to engage in experimental enterprises of any kind, and partly to the peculiar *plantation* system of agriculture which even yet prevails throughout the State. But a rapid improvement is taking place in our fruit-growing interests. The success of a few intelligent public-spirited individuals in Southern commercial fruit culture is drawing attention very strongly in direction of that important industry, and ere many years pass we may expect to see the amateur and commercial pomology of the Southern States holding the same popular and profitable position with *our* rural population that it does in other and naturally less favored sections. Having been born and raised to almost manhood, in the old Green Mountain State, and having passed many years subsequently in the Western and Middle States, and resided for the last twenty-five years in the extreme South, I claim to know something of the fruit-growing capacities of each section, the more especially as I have all my life been an enthusiastic devotee at the shrine of Pomona, and I emphatically assert that, all things else being equal, there is no better fruit soils or fruit climate to be found in the world than can be found in the Gulf States. Abundant experience has demonstrated the truth of this position. All we require to render it a universally accepted fact, is more intelligent discrimination in our fruit-growing practices, both as to culture and selection of species and varieties. Hitherto we have depended too much upon the teachings and experiences of the North, where natural conditions are so entirely different from ours as to render such guides not only unreliable but absolutely dangerous. As an illustration, some years ago our venerable President, the Hon. Marshal P. Wilder, who is regarded both North and South—and justly—as the highest and safest authority on pears in America, if not in the world, gave his unqualified endorsement to the *Vicar of Winkfield* as the best Winter pear, while the fact with us of the Gulf States is that it is perfectly worthless from premature decay in all soils, under all systems of cultivation and in all seasons! Again, there has never been a fruit book published in which the *Green Newtown Pippin*, the *R. I. Greening* and *Rarle's Genet* (the latter especially for the South) have not been classed and accounted as among the best and most reliable of late apples. The truth is they are all, and hundreds of other first rate Northern fruits, wholly unreliable in Southern orchards! And yet thousands of fruit-growers, taking Northern authorities as their guide, go on every year in

planting *Vicars*, *Newtown Pippins*, *Greenings*, *Genets*, &c., and after years of failure, cry out that the South, as a fruit country, is an unmitigated humbug! Herein lies the great work of our national society—to classify and arrange our fruits according to their adaptability to certain soils and climates, and to see that their authority is respected and acted upon. But the little time I have at present, will not permit me to pursue this subject further. At the next meeting of the Society I hope to be able to do so. Meanwhile I append a list of fruits which long and careful experience has proved adapted to general culture in the Gulf States, as also a list of those which the Southern planter should let severely alone. As an introduction to this list and in some sort a voucher for its reliability, I will state that it is based upon actual continuous experience, running back to 1847, and embracing within its scope the States of Mississippi, Louisiana and Alabama—and orchards of over forty thousand trees besides vineyards, fruit gardens, &c., in which have been tested more than two thousand varieties of fruits.

APPLES.

Worthy of *two* stars for the States of Louisiana, Mississippi and Alabama, as numbered in the Proceedings of the Society for 1873: Nos. 3, 4, 14, 15, 18, 22, 28, 29, 34, 38, 41, 60, 62, 63, 64, 65, 77, 79, 92, 96, 104, 108, 110, 112, 113, 115, 116, 124, 125, 136, 141, 144, 157, 158, 169, 180, 181, 187, 199, 200, 205, 212, 218, 224, 225, 246, 256, 258, 260.

Varieties worthy of *one* star for the above States: Nos. 1, 2, 5, 8, 11, 12, 16, 17, 19, 23, 27, 30, 31, 32, 36, 39, 40, 43, 44, 48, 49, 50, 51, 52, 56, 58, 59, 61, 68, 69, 74, 75, 76, 78, 80, 81, 82, 84, 86, 88, 89, 91, 94, 99, 100, 106, 114, 117, 118, 119, 121, 123, 126, 128, 129, 130, 131, 132, 134, 135, 137, 139, 140, 142, 143, 145, 147, 148, 151, 153, 154, 156, 159, 160, 162, 163, 164, 165, 166, 167, 168, 171, 179, 182, 183, 185, 190, 194, 195, 196, 197, 198, 201, 203, 206, 207, 208, 213, 214, 215, 216, 229, 230, 231, 233, 235, 240, 247, 250, 251, 252, 254, 257.

Varieties that are wholly unworthy of cultivation in the Southern States—should be indicated by a dagger as expressive of the fate that should await them: Nos. 6, 9, 21, 24, 26, 35, 37, 45, 53, 54, 57, 93, 101, 105, 122, 150, 155, 161, 173, 184, 186, 188, 189, 192, 219, 221, 222, 226, 228, 234, 236, 244, 248, 253, 255.

I find that I have fruited and have a record of the whole apple list, except fifty-four varieties.

CRABS as a general thing have done well here.

APRICOTS.

Generally a failure, from early blossoming.

BLACKBERRIES.

Excepting the *Dorchester* and *Kittatinny*, have done well. The former won't bear and the latter rusts.

CHERRIES.

Generally a failure, although the *Dukes* and *Morillos* often give good crops.

CURRANTS.

A failure; the *Cherry*, *Black Naples*, and a few others sometimes succeed in the shade of fences and trees.

GOOSEBERRIES.

Same as currants.

GRAPES.

Generally a success; *Conecord* most popular. The *Black Hamburg*, *Chasselas de Fontainebleau*, &c., often do well in the open air.

NECTARINES.

Except *Hood's Turkey*, *Early Newington* *Cling*, and *New White*, succeed well.

PEACHES.

Are universally a success in ordinary seasons.

PEARS.

The same, with a few marked exceptions.

PLUMS.

Except of the *Chickasaw* family, a failure.

RASPBERRIES.

Only reliable in the *Cap* varieties.

STRAWBERRIES.

Universally successful.

Yours very truly,

H. A. SWASEY, M. D.

Tangipahoa, La., Sept. 3, 1875.

SUB-REPORT FROM BATON ROUGE PARISH, LA.

By R. H. DAY, M. D.

H. A. SWASEY, M. D., *Chairman State Fruit Committee* :

Dear Sir—From necessity I have been compelled to delay the preparation of my report upon fruit raising in this section of Louisiana till the very last moment, which I fear will make it too crude to meet your expectations. While, however, I have not had the time to methodize and elaborate, I have not been idle in collecting all the material facts upon this interesting subject, and I think, if my report is imperfect in many particulars, it is at least candid and truthful, and may be relied upon for its accuracy of statement.

In my own immediate locality, fruit raising is too recent an industry to afford many facts that could be regarded as valuable, or as imparting much reliable information; still, its history, short as it is, is not wholly devoid of interest to those who are earnestly endeavoring to develop this important industry in the South.

PEACHES.

The first effort, so far as I have been able to learn, to raise peaches on an extensive scale and improved varieties in this part of Louisiana, was made by Gen. Felix Houston about the year 1845 or 1846. In 1849 he had fifty acres in three-year-old trees, fifty acres in two-year-old, and twenty acres in one-year-old trees. That year (1849) put down twenty acres more, and in 1850 twenty acres additional, making a total of one hundred and sixty acres in peach trees. His farm was situated on Thomson's Creek, near Port Hudson—a rich, sandy loam, rolling and naturally well drained; added to this, his lands were well prepared, being thrown up in good elevated ridges, were well cultivated and kept clean of grass and weeds, and the trees cared for, pruned and tended by experienced orchadists.

So far as we can judge from the lights before us, every condition of success was present. Now for the result. The trees while young grew thriftily, and looked entirely healthy. When three to four years old they became sickly and died off, failing in fruitage nearly every year, and but one year realized about one-third of a crop. He struggled on against failures in fruitage and sickly and dying trees till 1852 or 1853, when, becoming disheartened and disgusted, he had all that were remaining cut down, and abandoned forever an industry that he commenced with so much enthusiasm, and what he believed would give him a fortune.

In 1868, Mr. Alsworth, at Scott's Bluff, and myself at this point, each commenced an orchard, and the result has been about the same that attended Gen. Houston's experiment—the trees looking well and growing finely till about their third or fourth year, then sicken and die, the fruitage never having paid original cost of trees and setting out.

That this is not the result of unfavorable climatic influences, or of unsuitable soils, is clear to my mind, from the fact that native seedling trees at various points in all this section, without care or attention, remain healthy and fruit abundantly nearly every year—the fruit, however, mostly being inferior in size and quality, from careless and improper selections of seed.

Now, if seedling peach trees can remain healthy, live long and fruit well, so ought budded trees to do likewise, if healthy stocks and sound, perfect buds are used in propagating, unless the operation itself necessarily inflicts some fatal injury upon the *vital forces* of the stock and bud. I sincerely wish that this matter may be specially pressed upon the consideration of the National Pomological Society at its next meeting, and be fully ventilated by that intelligent and experienced body of fruit growers.

The varieties of peach that seem to do best in this section are the *St. John*, *Early Tillotson*, *Large Rareripe*, *Crawford's Early*, *Crawford's Late*, *Old Miron Free*, *Old Miron Cling*, and *Chinese Cling*.

PEARS.

Pears are grown only to a limited extent, but appear to do well, the fruit being large and fine flavored; *Clapp's Favorite*, *Bartlett*, and the *Duchesse d'Angouleme*, seeming to take the lead.

The trees, as in other States, are subject to that terrible scourge, the blight, and is a serious drawback to their cultivation. Time and experience, it is hoped, will discover a preventive or remedy for this evil, and permit the culture of this most profitable of fruits to become general throughout the State. I do not think, however, that this great scourge to pear trees is common in our State, as I have heard but little complaint in this regard.

In 1868 I commenced my present orchard, there then being upon the place some five or six trees, set out about 1858, greatly injured during the war by Federal cavalry. These latter trees, under good care and treatment, became healthy and thrifty, and the young trees grew off well and gave every promise of entire success until the autumn of 1873; then the blight made its appearance, and has since spread, despite every effort for its removal; fully one-half of my trees having perished up to this date, the disease being not yet eradicated. I attribute its introduction into my orchard to the following circumstances: In May, 1872, a friend returned from the North and

brought me some grafts from about Rochester, New York, which he said were choice fruits. I grafted them into the limbs of several trees; they all lived and made a rapid growth. In the Autumn among those trees the blight made its appearance; first a few leaves turning black, then limbs, and finally the trees succumbed. From this locality it spread, with the sad result already stated. I may be in error as to its origin, but circumstances seem strongly to corroborate it.

APPLES.

Apples succeed in this section to perfection, the trees being remarkably free from disease or the depredations of insects; fruit early and abundantly.

The *Red June*, *Yellow June*, *Early Harvest*, *Red Astrachan*, *Smith*, *Jonathan*, *Batchelor*, and *Twenty-Ounce*, are the finest early varieties, and all good. For high flavor and fine eating qualities, the *Red* and *Yellow June* stand first; for productiveness and keeping qualities, the *Smith*; for size and appearance, the *Batchelor* and *Twenty-Ounce*. The *Shockley* is an early and a profuse bearer; and so is the *Greenstein* and *Stevenson's Winter*, but fall very short of being what they are reported to be—Winter apples.

In Summer and Fall apples we have great numbers and excellent kinds, but as yet we have no good late kinds—none that can properly be styled a Winter apple. This lack or deficiency will doubtless be supplied in time; now that energetic, persevering, and scientific men, throughout the South are devoting themselves to fruit culture.

Apple orchards in this section are rapidly increasing. Previous to the war, I knew of but two persons who had planted a single apple tree—Mr. Fisher, just outside the corporate limits, and Mr. Benjamin, eleven miles on the Bayou Sara road, being the honorable pioneers. They each brought a few trees from Ohio, about 1854 or 1855, and planted them out, which in due time fruited, much to the surprise of our people, who from childhood had been indoctrinated into the belief that in Louisiana nothing could be grown but *sugar cane* and *cotton*. Since the war, this is changed; and now, while a few are planting out considerable orchards of apples, almost every family has a few trees for home use and comfort.

GRAPES.

Grapes are being introduced and grown extensively, and seem to be as well adapted to our rich magnolia ridges and alluvial soils as to the dry and sandy pine regions of our State. This year from one hundred and twenty-two vines, three and four years old, I have gathered, of choice picked grapes, over twelve hundred quart boxes. The *Concord*, *Lee's Seedling* and *Hartford Prolific*, are the varieties mostly grown, being considered healthier and more reliable as bearers, except the *Scuppernon*, which is as hardy as the native muscadine, and luxuriates wherever it is tried, and is a constant and free bearer.

PLUMS.

Plums of the *Chickasaw* variety grow and flourish everywhere. The *Wild Goose* is an improved kind, that succeeds well, and is valuable either for the table or marketing.

With railroad facilities, at cheap rates for quick transportation to Western cities, all this region is destined to become a great fruit-raising district, adding to the social and refined comforts of home life, diversifying the indus-

tries of the people and increasing their independence and wealth.

Respectfully,

RICHARD H. DAY.

SUB-REPORT FROM WASHINGTON PARISH,
LOUISIANA.

BY H. W. L. LEWIS.

Fruitland Farm, Tangipahoa Parish, La.

Latitude 5 minutes South of 31 degrees; soil, sandy loam with yellow to red clay.

H. A. Swasey, M. D.—*Dear Sir:*—As a member of the State Committee for this section, I beg to submit the following report:

APPLES WORTHY OF GENERAL CULTURE.

Red Astrachan.—Tree healthy; fruit medium size, rots some; shy bearer. June 1st.

Yellow June.—Tree very strong grower, healthy, bears heavy crops; fruit large, sound, fine flavor; best.

Mercer.—Tree strong grower, early and regular bearer, healthy; fruit medium, fine flavor, rots some; best.

Horse.—Tree healthy, upright grower, bears heavy crops; fruit large, keeps well; best for cooking and drying.

Batchelor.—Tree rather slow, upright grower; healthy; bears heavy crops; fruit very large, crisp, sub-acid; rots some; best for August.

Tauton.—Tree straggling grower, abundant bearer, short lived; fruit in large clusters, from medium to large; good keeper; first-rate. August.

Carter.—Tree dense grower, healthy; bears heavily; fruit small, rots; fine flavor. September and October.

Shockley.—Tree very upright grower, bears heavy crops; fruit medium, oblong; flesh very firm, best keeper, rots some; known in Claiborne Parish as *Curry's Red*; a magnificent red apple there. September to December.

Disharoon.—Tree very upright, rapid grower, healthy, bears well; fruit medium, greenish yellow, fine flavor, rots considerably. September and October.

APPLES DISCARDED AS POOR GROWERS OR BEARERS, OR NOT KEEPING—NOT FULLY TESTED, & C.

Early Harvest.—Poor grower and bearer; rots badly.

Virginia May.—Shy bearer; very small, but fine flavor.

Homing.—Poor grower; rots badly; poor flavor.

Hope.—Beautiful red, sweet and insipid; rots.

Green Cheese.—Large, poor flavor; rots badly.

Holly.—Very small, good bearer and keeper; flavor good. September to December.

Juanabuckee.—Rots badly.

Carolina Red June.—Not fruited.

Callachoe.—Large, coarse; rots badly.

Callasaga.—Large, poor bearer; rots.

Nickajack.—Large, good bearer; rots badly.

Mastodon.—Not sufficiently tested.

Pride of the South.—Seedling; good grower and bearer; rots.

Yellow Crank.—Rots badly.

Beran.—Not fruited.

Rome Beauty.—Not fruited.

Stevenson's Winter.—Not fruited.

Harris Winter.—Not fruited.

The following seedlings obtained from names attached:

G. W. Lewis, J. J. Lewis, Thos. Simmons, V. V. Vanods, L. D. Snell, Waskom, S. O. Simmons, Thomas Kemp, Strickland, Winter—Several of which promise highly.

GRAPES.

White Scuppernon.—Perfectly healthy, good bearer; best for wine.

Concord.—Strong grower and bearer; best for market; makes a fair vine.

Ives' Seedling.—Valuable *only* as an early market grape.

Out of all the balance, the *Catawba* is about the best.

PLUMS.

The common *Chickasaw Red* and *Wild Goose*.

PEACHES

do not do well in my locality; have to buy my peaches or do without. *Cause*, curculio, not frosts.

PEARS.

Doyenne d'Ete.—Not fruited.

St. Michael Archangel.—Strong grower, good bearer; fruit medium, very smooth, keeps well; flavor best; on quince.

Bartlett.—Tree perfectly healthy, best bearer; does best on the pear.

Duchesse d'Angouleme.—Well known; indispensable; quince.

Beurre Superfin.—Good grower; bears heavily alternate years; fruit large, very smooth, keeps well, rich, sub-acid; excellent for preserving; does well on quince; indispensable.

Onondaga.—Good grower, fair bearer; size medium to large; flavor good. September.

Winter Nelis.—Straggling grower, shy bearer; flavor very good; best late pear. September and October; keeps well.

The following discarded:

Mitchline.—Small; inferior flavor; rots at core.

Jefferson.—Beautiful; insipid; worthless.

Beurre Giffard.—Straggling grower, shy bearer; flavor best.

Belle Lucrative.—Shy bearer; first-rate flavor.

Flemish Beauty.—Very large; insipid; rots badly.

Passe Colmar.—Shy bearer; fruit large and fine.

Beurre d'Anjou.—Tree unhealthy, poor bearer; flavor good.

Louise Bonne de Jersey.—Good grower and bearer; not up to the standard.

Beurre Diel.—Blights badly; fruit inferior.

Urbaniste.—Tree healthy, shy bearer; fruit small.

White Doyenne.—Tree healthy; scarcely bears at all.

Seckel.—Blights badly; scarcely bears at all.

Vicar of Winkfield.—Very strong grower; fruit falls off before ripe; have headed in with other kinds.

The following not fruited or sufficiently tested:

Hocell, Clapps' Favorite, Julienne, French Pear from Mrs. Mann, *Duchesse d'Orleans, Triomphe de Jodoigne, Blood-good, Lawrence*.

Report from Texas.

P. BARRY, Esq., *Chairman General Fruit Committee American Pomological Society*:

Dear Sir—I am sorry that circumstances I cannot control prevent me from going to Chicago to the meeting of the American Pomological Society. I send you a list of fruits that do well here. I hope the list will be useful in making up the Society Catalogue.

Fruit growing is just now receiving more attention than ever before in this State, and every day proves more and more that Texas will soon take a place in the front rank of fruit producing countries. We had at our first Horticultural Fair held at Houston on the 10th day of August, a very fine display of fruit, some specimens, especially pears, would be called very fine anywhere. There is no doubt now that we can even beat California in pears. The idea that we could not grow apples to advantage here is also proved a false one; we can and do grow fine apples. This State is so large that we can grow almost anything between its borders. On the Coast we grow tropical fruits to perfection, while up towards the Northern border all the productions of the North are grown to perfection.

I sent you a report of the State Horticultural and Pomological Society. You will see from that report what we had on exhibition. (Received.) I have not seen finer fruit in any country. We are planting fruit trees in large numbers. Already our fruit trade is a large one and growing more rapidly than any other agricultural interest. I hope there will be a considerable amount of fruit sent from Texas to Chicago, but you must remember that at this season all our finest sorts are gone.

Very truly your friend,

WILLIAM WATSON.

Rosedale Nurseries, Brenham, Texas.

PEACHES.

One Star.—Early Louise, Mountain Rose, Early Crawford, Late Crawford, Columbia, Grosse Mignonne Washington Cling, Delcis Cling.

Two Stars.—Hale's Early, Early Beatrice, Early Rivers, Troth's Early, Stump the World, Old Mixon Cling, Chinese Cling, Blood Cling, Reeves' Favorite, Wilson's Early.

APPLES.

One Star.—Red June, Maiden's Blush, Julian, Cullasaga, Gladney's Red, Hamilton, Dominic.

Two Stars.—Red Astrachan, Early Harvest, Ben Davis, Shockley, Equinately, Mangum, Nickajack, Twenty-Ounce, Horse, Gravenstein, Robinson's Superb, Transcendent Crab.

PEARS.

One Star.—Buffum, Tyson.

Two Stars.—Bartlett, Howell, Duchesse d'Angouleme, Duchesse Precoce, Beurre Precoce, Beurre Goubalt, Seckel, Des Moines, St. Michael Archangel, Beurre Clairgeau, Beurre Diel, Flemish Beauty, Doyenne d'Ete.

All the varieties named above I have tested on my own grounds, and saw on other places; they are all strictly first-class here and will be valuable for market or home use.

PLUMS.

One Star.—Gen. Hand, Jefferson, German Prune.

Two Stars.—Wild Goose.

APRICOTS.

Two Stars.—Moorpark, Breda, St. Ambroise, Viard, Much Much.

STRAWBERRIES.

Two Stars.—Wilson's Albany, Chas. Downing, Jucunda (in moist ground).

Pomegranates, figs, almonds, quinces, grapes and blackberries do well almost everywhere. We have a number of new peaches on trial, among them *Amsden*, *Alexander*, *Dr. Hogg*, *Dagmar*, *Magdala*, *Osprey* and several others of Rivers' new peaches; all seem to promise well here.

Of New pears, I have fruited this season, *Beurre de l'Es-*

somption, *Sourcier du Congrès*, *Bonne du Puits Ancault*, *Duchesse de Mouchey*, *Bonne Sophie*, *Louise Bonne de Printemps*, *Marie Louise d'Ucles*, and *Beurre Précoce*. I would call special attention to *Beurre Précoce*. On my place it proved one of the best, ripened early in July and was very good. I think from the growth of the tree and quality of the fruit it will be valuable for Texas. *Beurre de l'Assomption* is not as good here as we expected; it is not any larger than *Bartlett* but earlier; no better.

Of plums, the only kinds that do well here are the *Wild Goose* and others of the *Chickasaw* family.

Cherries are out of place here; it is useless planting them. Same may be said of currants and gooseberries.

CATALOGUE OF FRUITS.

PLAN OF THE CATALOGUE.

THE arrangement of the names of varieties in the Catalogue is alphabetical and according to the nomenclature adopted by the Society. Synonyms are given in a few instances where it seemed necessary, and these are placed under the adopted names in italics.

The columns are arranged thus: In the first, the names of varieties, in the next seven columns the description, and in the remaining columns the States or Districts.

The State or District columns are not placed in alphabetical order, as in the octavo editions, but are grouped in *Divisions* somewhat similar in climate, and other characters affecting fruit culture. Thus: 1.—Northern Division—between 42° and 49°. 2.—Central Division—between 35° and 42°. 3.—Southern Division—between 28° and 35°.

The State or District in which a fruit is recommended for cultivation is designated by a star (*), and if the variety is of great superiority and value, two stars (**), if new or recently introduced and promising, by a dagger (†).

I. — APPLES.

EXPLANATION OF ABBREVIATIONS.—The SIZE is understood by L. for large, m. for medium, and s. for small. The FORM—r. c. for roundish conical; ob. for oblong; r. ob. for roundish oblate; fl. for flat or oblate; r. for roundish. The COLOR—y. r. for yellow and red; r. s. for red striped; g. y. for greenish yellow; rus. for russeted; y. rus. for yellow and russet. The QUALITY—g. for good; v. g. for very good; b. for best. The USE—F. fruit valuable for all family purposes. K. M. valuable for kitchen or market purposes; F. M. family and market. The SEASON—S. for summer; E. A. for early autumn; L. A. for late autumn, and W. for winter. All these characters of course only designate leading positive features, and vary in their distinctness according to soil and climate in which they are grown. The ORIGIN is shown by Rus. for Russian; En. for English; Am. for American; Ger. for German; F. for foreign.

NUMBER.	NAMES.	DESCRIPTION.						I.—Northern Division—Between 42°												
		SIZE.	FORM.	COLOR.	QUALITY.	USE.	SEASON.	ORIGIN.	Nova Scotia.	New Brunswick.	Maine.	New Hampshire.	Vermont.	Massachusetts.	Rhode Island.	Connecticut.	New York.	Ontario.	Michigan.	Wisconsin.
1	Alerson's Early	m.	r.	y.	v. g.	K.	S.	Am.												
2	Abram <i>Crutchfield Greening.</i>	m.	r.	y. r.	v. g.	F. M.	W.	Am.												
3	Alexander	l.	r. c.	r. s.	v. g.	K. M.	E. A.	Rus.	*											*
4	All Summer	s.	fl.	y. r.	v. g.	F.	S.	Am.												
5	American Pippin <i>Grindstone.</i>	m.	fl.	r. s.	v. g.	F. M.	W.	Am.												
6	American Summer Pearmain	m.	ob.	y. r.	b.	F.	S.	Am.												
7	Autumn Bough	m.	r. c.	g. y.	v. g.	F.	E. A.	Am.												
8	Autumnal Swaar	m.	r. ob.	g. y.	v. g.	F.	L. A.	Am.												
9	Bailey Sweet	l.	r. c.	r. s.	v. g.	F. M.	L. A.	Am.												
10	Baker	l.	r. ob.	y. r.	v. g.	K. M.	W.	Am.												
11	Baldwin	l.	r. c.	r. g.	v. g.	F. M.	W.	Am.	*											*
12	Baltimore <i>Cable's Gilliflower. Malaska.</i>	m.	r. c.	r. y.	v. g.	F. M.	W.	Am.	*											*
13	Baltzley	l.	r. ob.	y.	v. g.	F. M.	A.	Am.												
14	Beauty of Kent	l.	r. c.	r. s.	v. g.	K. M.	L. A.	Eu.												
15	Belden Sweet	m.	r. c.	y.	v. g.	F.	W.	Am.												
16	Belmont	l.	r. c.	y. r.	v. g.	F. M.	W.	Am.												
17	Ben. Davis <i>New York Pippin.</i>	l.	r. c.	y. r.	v. g.	K. M.	W.	Am.												*
18	Benoni	m.	r. ob.	y. r.	v. g.	F. M.	S.	Am.		*										*
19	Bentley's Sweet	m.	r. ob.	g. y.	v. g.	F. M.	W.	Am.												†
20	Bethlehemite	l.	r. ob.	y. r.	v. g.	F. M.	W.	Am.												†
21	Bevan's Favorite	m.	fl. c.	y. r.	v. g.	F.	S.	Am.												
22	Black Apple <i>Jersey Black.</i>	m.	fl.	d. r.	v. g.	F.	W.	Am.												
23	Black Oxford	s.	r. ob.	r.	v. g.	M.	W.	Am.		*										
24	Blackshear	l.	r.	y.	v. g.	F. M.	W.	Am.												
25	Blenheim Pippin	l.	r. ob.	y. r.	v. g.	F. M.	W.	Eng.	*											
26	Blue Pearmain	l.	r. c.	r.	v. g.	M.	W.	Am.	*											*
27	Bolhannan	l.	r. ob.	g. y.	v. g.	M.	L. A.	Am.												
28	Bonum	l.	r. ob.	y. r.	v. g.	M.	L. A.	Am.												
29	Bourassa	m.	r. c.	y. r.	v. g.	M.	L. A.	Ger.												
30	Bowling's Sweet	m.	r.	y. r.	v. g.	M.	L. A.	Am.												
31	Broadwell	m.	r. c.	g. y.	v. g.	F. M.	L. A.	Am.												†
32	Bruce's Summer	l.				S.		Am.												
33	Buckingham <i>Full Queen of Kentucky, Bachelor, Equinately.</i>	l.	r. ob.	y. r.	v. g.	F. M.	E. W.	Am.												
34	Bull	l.	r. ob.	y. r.	v. g.	F.	W.	Am.												
35	Bullington's Early	m.	fl.	y.	v. g.	F.	S.	Am.												
36	Bullett <i>N. C. Greening.</i>	m.	fl.	r. y.	v. g.	F. M.	W.	Am.												
37	Bullock's Pippin <i>American Golden Russet.</i>	s.	r. c.	y. rus	b.	F. M.	W.	Am.												*
38	Burlington Pippin	m.	fl. c.	y. r.	v. g.	F. M.	W.	Am.												
39	Calkins' Pippin	l.	r. c.	y. r.	v. g.	F. M.	W.	N. S.	*											
40	Camak Sweet	m.	r. ob.	y.	v. g.	F. M.	W.	Am.												
41	Campfield	m.	r. ob.	g. r.	v. g.	M. K.	W.	Am.												
42	Canada Reinette	l.	r. c.	g. y.	v. g.	F. M.	W.	F.	*											
43	Cannon Pearmain	m.	r. c.	r. s.	v. g.	F.	W.	Am.												†
44	Carolina Red June	m.	r. c.	r. s.	v. g.	F. M.	S.	Am.												
45	Carolina Watson	m.	fl. c.	g. y. r.	v. g.	M.	S.	Am.												
46	Carter's Blue	l.	r. ob.	g. r.	v. g.	F. M.	E. A.	Am.												
47	Cane Creek Sweet	m.	r.	y.	v. g.	F.	S.	Am.												
48	Chattahoochee	m.	fl.	y.	v. g.	M.	W.	Am.												
49	Chenango Strawberry <i>Sherwood's Favorite.</i>	m.	ob. c.	g. r.	v. g.	F. M.	E. A.	Am.	*											
50	Clark's Pearmain	m.	r. ob.	y.	v. g.	M.	W.	Am.												
51	Clayton	l.	c.	y. r.	v. g.	F. M.	W.	Am.												
52	Clyde Beauty	l.	r. c.	g. r.	v. g.	F. M.	W.	Am.												
53	Cooper	l.	r. ob.	g. y.	v. g.	M.	L. A.	Am.												
54	Cooper's Market	m.	r. c.	y. r.	v. g.	M.	W.	Am.												
55	Cooper's Early White	m.	r.	y.	v. g.	M.	A.	Am.												
56	Cogswell	m.	r. ob.	y. r.	v. g.	F. M.	W.	Am.												
57	Cole's Quince	l.	r. ob.	g. y.	v. g.	F. M.	W.	Am.												*
58	Colvert	l.	r. ob.	y. r.	v. g.	F. M.	S. A.	Am.												*

3 Moderate bearer; showy.
 5 Valued for Cider.
 6 Slender grower; but healthy.
 8 A fine table sort; not showy.
 9 Showy and fine.

11 Unprofitable South and South-west.
 12 A hardy tree; very productive.
 14 A coarse, showy fruit.
 16 Fine for table; too tender for shipping.
 17 Valuable shipping sort.

19 Fine Winter variety.
 20 Resembles Newtown Spitzenburg.
 23 Mostly grown in Maine.
 26 Liable to drop, at the West.
 28 Valued South.

NUMBER.	NAMES.	DESCRIPTION.						1.—Northern Division—Between 42°													
		SIZE.	FORM.	COLOR.	QUALITY.	USE.	SEASON.	ORIGIN.	Nova Scotia.	New Brunswick.	Maine.	New Hampshire.	Vermont.	Massachusetts.	Rhode Island.	Connecticut.	New York.	Ontario.	Michigan.	Wisconsin.	
59	Cornell's Fancy	m.	ob.	y. r.	v. 75 75	F. M.	L. A.	Am.													
60	Cracking	l.	r.ob.	y.	v. 75 75	F. M.	L. A.	Am.													
61	Creek	m.	fl. c.	y. r.	v. 75 75	F. M.	W.	Am.													
62	Cullasaga	m.	r. c.	y. s.	v. 75 75	M.	W.	Am.													
63	Curtis Sweet	l.	r. c.	y. r.	v. 75 75	K. L. A.	L. A.	Am.													
64	Danvers' Winter Sweet	m.	r.ob.	y. r.	v. 75 75	F. M.	W.	Am.			*										
65	Detroit Red	l.	r. c.	d. r.	v. 75 75	K. M.	E. W.	Am.													
66	Disharoon	m.	r. c.	r. s.	v. 75 75	F. M.	A.	Am.													
67	Domine	m.	r.ob.	y. r.	v. 75 75	F. M.	W.	Am.													*
68	Drap d'Or	l.	r.ob.	y.	v. 75 75	F.	S.	Ger.		*											
69	Dutch Mignonne	m.	r.ob.	r. s.	v. 75 75	M.	W.	Ger.													
70	Duchess of Oldenburg	m.	r.ob.	y. r.	v. 75 75	M.	S.	Rus.		*											*
71	Dyer or Pomme Royal	m.	r.	y. y.	v. 75 75	F.	E. A.	F.													
72	Early Chandler	m.	r.	y. r.	v. 75 75	F. M.	W.	Am.													
73	Early Harvest	m.	r.ob.	y. r.	v. 75 75	F. M.	S.	Am.		*											
74	Early Red Margaret	m.	r.	r. s.	v. 75 75	F. M.	S.	Ger.													
75	Early Joe	s.	fl.	y. r.	v. 75 75	F.	S.	Am.													
76	Early Pennoek	l.	r. c.	y. r.	v. 75 75	M.	S.	Am.													
77	Early Strawberry	s.	r.	r. s.	v. 75 75	F.	S.	Am.				*									
78	Early Ripe																				
79	Edgar Red Streak <i>Walbridge.</i>	l.	r.ob.	y. r.	v. 75 75	F.	W.	Am.													*
80	Edward's Early						S.	Am.													
81	English Russet <i>Poughkeepsie Russet.</i>	m.	r. c.	y. r.	v. 75 75	F. M.	W.	En.						*							*
82	Esopus Spitzenberg	l.	ob.	y. r.	b.	F. M.	W.	Am.					*								
83	Eutaw						A.	Am.													
84	Evening Party	m.	fl.	r.	v. 75 75	F. M.	W.	Am.													
85	Ewalt	l.	r.	y. r.	v. 75 75	M.	W.	Am.													
86	Excel	l.	ob. c.	y. r.	v. 75 75	F. M.	W.	Am.							*						
87	Fallowater <i>Fornacader, Tulphocken.</i>	l.	r. c.	y. y.	v. 75 75	M.	W.	Am.													*
88	Fall Harvey	l.	r.ob.	y. y.	v. 75 75	M.	L. A.	Am.						*							
89	Fall Jenetting	l.	fl.	y. y.	v. 75 75	M.	E. A.	Am.		*											
90	Fall Orange	l.	r.	y. r.	v. 75 75	K. M.	L. A.	Am.													*
91	Fall Pippin <i>Holland Pippin, erroneously.</i>	l.	r.ob.	y. y.	v. 75 75	F. M.	L. A.	Am.						*							*
92	Fall Queen, or Haas, Gros Pommier	m.	ob. c.	y. r.	v. 75 75	F. M.	A.	Am.													†
93	Fall Wine	m.	r.ob.	r. y.	b.	F.	L. A.	Am.													*
94	Famense <i>Pomme de Neige, Snow Apple.</i>	m.	r.ob.	r. s.	v. 75 75	F. M.	W.	F.		*		*	*	*	*	*	*	*	*	*	*
95	Family	m.	fl. c.	y. r.	v. 75 75	M.	S.	Am.													
96	Ferdinand	l.	fl.	o. y.	v. 75 75	M.	A.	Am.													
97	Ferris	m.	r. fl.	y. r.	v. 75 75	F. M.	W.	Am.													
98	Fink	m.	fl.	y. r.	v. 75 75	M.	L. A.	Am.													
99	Fourth of July	m.	r.ob.	r. s.	v. 75 75	M.	S.	Ger.													†
100	Foust's Winter						W.	Am.													†
101	Foundling	m.	r.ob.	y. r.	v. 75 75	F.	A.	Am.			*										*
102	Fulton	m.	fl.	y. y.	v. 75 75	M.	W.	Am.				*									
103	Gabriel	m.	r.ob.	r. y.	v. 75 75	M.	L. A.	Am.													
104	Garden Royal	m.	r.ob.	y. r.	b.	F.	S.	Am.			*			*							†
105	Garretson's Early	m.	r. c.	y.	v. 75 75	K.	A.	Am.					*								
106	Gilpin <i>Carthouse, Little Romanite.</i>	s.	r. c.	y. r.	v. 75 75	M.	W.	Am.			*										*
107	Gladney's Red	m.	r.	r. s.	v. 75 75	F. M.	W.	Am.													
108	Goff	l.	fl.	y. r.	v. 75 75	K. M.	S.	Am.													
109	Golden Russet, of Western New York	m.	r.ob.	y. r.	v. 75 75	F. M.	W.	Am.		†			*	*	*	*	*	*	*	*	*
110	Golden Sweet	l.	r.	y. y.	v. 75 75	F. M.	S.	Am.					*	*	*	*	*	*	*	*	*
111	Granite Beauty	l.	r.ob.	y. r.	v. 75 75	F. M.	W.	Am.			*	*	*	*	*	*	*	*	*	*	*
112	Gravenstein	l.	r.ob.	y. r.	v. 75 75	F. M.	L. A.	Ger.		*	*	*	*	*	*	*	*	*	*	*	*
113	Green Cheese <i>Carolina Greening.</i>	m.	fl.	y. y.	v. 75 75	F. M.	W.	Am.					*	*	*	*	*	*	*	*	*
114	Green Sweet	m.	r.ob.	y. y.	v. 75 75	K. M.	W.	Am.					*	*	*	*	*	*	*	*	*
115	Grimes' Golden	m.	r.ob.	y. y.	v. 75 75	F.	W.	Am.		*											*
116	Gully	m.	fl.	y. y.	v. 75 75	F.	W.	Am.													*
117	Hall	s.	fl.	y. r.	v. 75 75	F.	W.	Am.													*
118	Hamilton	l.	r.	r. y.	v. 75 75	F. M.	A.	Am.													*

64 Valued mainly for Stock feeding.
 67 Productive and hardy.
 70 One of the most hardy varieties.
 71 Valued for dessert.
 73 Succeeds best on strong soils.
 75 A delicious table sort; tree of small growth

76 Popular market sort
 77 Continues a long time ripening; often called Red Juneating.
 79 See discussion on this variety.
 94 A hardy tree; one of the best for the North and West.

93 Resembles Tetofsky.
 104 Of a delicious pear flavor.
 110 Valued for stock feeding.
 112 Ripens early and keeps late.
 113 One of the best South.

NUMBER.	and 49°		H. - Central Division - Between 35° and 42°		III. - South Div. b. 25 and 35°	
59	Minnesota.					
60	Dakota.					
61	Montana.					
62	Wyoming.					
63	Idaho.					
64	Washington.					
65	Oregon.					
66	Pennsylvania.					
67	New Jersey.					
68	Delaware.					
69	Maryland & D.C.					
70	Virginia.					
71	North Carolina.					
72	Ohio.					
73	Indiana.					
74	West Virginia.					
75	Kentucky.					
76	Tennessee.					
77	Illinois.					
78	Iowa.					
79	Missouri.					
80	Nebraska.					
81	Kansas.					
82	Colorado.					
83	Utah.					
84	Nevada.					
85	California.					
86	South Carolina.					
87	Georgia.					
88	Alabama.					
89	Florida.					
90	Indian Territory.					
91	Arkansas.					
92	Mississippi.					
93	Louisiana.					
94	Texas.					
95	New Mexico.					
96	Arizona.					

NUMBER.	NAMES.	DESCRIPTION.						I.—Northern Division Between 42°												
		SIZE.	FORM.	COLOR.	QUALITY.	USE.	SEASON.	ORIGIN.	Nova Scotia.	New Brunswick.	Maine.	New Hampshire.	Vermont.	Massachusetts.	Rhode Island.	Connecticut.	New York.	Ontario.	Michigan.	Wisconsin.
119	Blaskell Sweet	m.	fl.	g. y.	v.	F.	E. A.	Am.												
120	Hawthornden	m.	r. ob.	g. y.	v.	K. M.	E. A.	F.												
121	Hartford Sweet	l.	r. ob.	r. s.	v.	M.	W.	Am.			*									
122	Hewes' Virginia Crab	s.	r.	y. r.	v.	Cider	L. A.	Am.												
123	Highby Sweet	m.	r. c.	y. r.	v.	F.	L. A.	Am.					†							
124	Hightop Sweet	s.	r.	g. y.	v.	F. M.	S.	Am.				*								
125	Hocket's Sweet	m.	r. ob.	y. r.	v.	K.	W.	Am.												
126	Holland Pippin	l.	r. ob.	g. y.	v.	K. M.	L. A.	F.				*				*			*	
127	Holly	m.	r. ob.	y. r.	v.	K.	W.	Am.												
128	Hoover <i>Black Coal.</i>	m.	r.	y. r.	v.	F. M.	W.	Am.												
129	Horn	m.	fl.	g. r.	v.	F. M.	L. W.	Am.												
130	Horse	l.	r.	y. r.	v.	K. M.	S.	Am.												
131	Hubbardston Nonsuch	l.	r. c.	y. r.	v.	F. M.	W.	Am.	*			*	*	*	*	*	*	*	*	*
132	Hunt Russet	m.	r. ob.	y. rus.	v.	F. M.	W.	Am.				*	*	*	*	*	*	*	*	*
133	Huntsman's Favorite	l.	ob.	y.	v.	F. M.	W.	Am.				*	*	*	*	*	*	*	*	*
134	Hurlbut	m.	r. ob.	y. r.	v.	F. M.	L. A.	Am.			*		*	*	*	*	*	*	*	*
135	Jefferson County	m.	r. ob.	y. r.	v.	F. M.	W.	Am.												
136	Jeffers	m.	r. ob.	y. r.	v.	F. M.	E. A.	Am.												
137	Jersey Sweet	m.	r.	y. r.	v.	F. M.	E. A.	Am.				*	*	*	*	*	*	*	*	*
138	Jewett's Fine Red	m.	r. ob.	y.	v.	F. M.	W.	Am.												
139	Jonathan	m.	r. c.	y. r.	v.	F. M.	W.	Am.	*			*	*	*	*	*	*	*	*	*
140	Julian	m.	fl. c.	w. r.	v.	K.	S.	Am.			*	*	*	*	*	*	*	*	*	*
141	Jumaluskee	m.	r. ob.	g.	v.	F. M.	W.	Am.												
142	Kentucky	l.	r. c.	y. r.	v.	M.	L. A.	Am.												
143	Kentucky Red Streak <i>Bradford's Best.</i>	m.	r. c.	g. y. d. r.	v.	F. M.	A.	Am.												
144	Keswick Cullin	r.	r. c.	g. y.	v.	K. M.	E. A.	En.	*			*	*	*	*	*	*	*	*	*
145	Key's Fall	m.	r.	rus.	v.	F. M.	E. W.	Am.												
146	Kinnairds Favorite	m.	fl.	y. r.	v.	F. M.	W.	Am.												
147	Kinney's Winter					W.														
148	King of Tompkins County	l.	r.	y. r.	v.	F. M.	W.	Am.	*			†	*	*	*	*	*	*	*	*
149	Kirkbridge White	m.	ob.	g. y.	v.	K. M.	E. A.	Am.												
150	Klaproth	m.	fl.	y. r.	v.	K. M.	E. A.	Am.												
151	Lady Apple	s.	fl.	y. r.	v.	F. M.	W.	F.												
152	Lady's Sweet	l.	r.	y. r.	v.	F. M.	W.	Am.				*	*	*	*	*	*	*	*	*
153	Lansingburg	m.	r. fl.	y. r.	v.	M.	W.	Am.												
154	Large Yellow Bough <i>Summer Sweet Bough.</i>	l.	ob.	g. y.	v.	F. M.	S.	Am.	*		*	*	*	*	*	*	*	*	*	*
155	Late Strawberry <i>Autumn Strawberry.</i>	m.	r.	y. r.	v.	F. M.	L. A.	Am.				*	*	*	*	*	*	*	*	*
156	Lawver	l.	r. ob.	y. r.	v.	F. M.	W.	Am.												
157	Limber Twig	m.	r. ob.	y. r.	v.	M.	W.	Am.												
158	Long Island Russet	m.	r.	rus.	v.	K.	W.	Am.												
159	Loudon Pippin	l.	fl.	y. r.	v.	M.	W.	Am.												
160	Lowell <i>Orange, Talbot Pippin, Queen Anne, Michigan Golden Pippin.</i>	l.	r. c.	g. y.	v.	F. M.	E. A.	Am.	*			*	*	*	*	*	*	*	*	*
161	Lyecom	l.	r.	g. y.	v.	F. M.	E. A.	Am.												
162	Maiden's Blush	m.	r.	g. y.	v.	K. M.	E. A.	Am.	†			*	*	*	*	*	*	*	*	*
163	Major	l.	r. fl.	g. r.	v.	F. M.	W.	Am.												
164	Maugum	m.	r. ob.	y. r.	v.	F. M.	W.	Am.												
165	Manomet	m.	r. ob.	y. r.	v.	F. M.	E. A.	Am.					*	*	*	*	*	*	*	*
166	Mary Womac	l.	r. fl.	y. r.	v.	F. M.	W.	Am.												
167	Marquis of Lorne	l.	r. fl.	g. r.	v.	F. M.	W.	N. S.	*											
168	Mason's Stranger	m.	fl.	y. r.	v.	F. M.	W.	Am.												
169	Mattamusket	s.	fl.	y. r.	v.	F. M.	W.	Am.												
170	Maverick Sweet	m.	r. ob.	y. r.	v.	M.	W.	Am.												
171	Maxy	m.	r. c.	g. r.	v.	F. M.	W.	Am.												
172	McAfee's Nonesuch <i>Large Striped Pearmain.</i>	l.	r. ob.	y. r.	v.	F. M.	W.	Am.												
173	McLellan	m.	r. ob.	y. r.	v.	F. M.	W.	Am.						*	*	*	*	*	*	*
174	Melon	m.	r. ob.	y. r.	v.	F. M.	W.	Am.					*	*	*	*	*	*	*	*
175	Michael Henry Pippin	m.	r.	g. y.	v.	K. M.	W.	Am.												
176	Milam	m.	r.	r. s.	v.	K. M.	W.	Am.												
177	Milden, or Milding	l.	fl.	y. r.	v.	F. M.	A. W.	Am.				*	*	*	*	*	*	*	*	*

120 One of the most profitable of market sorts
 122 Valued only for cider.
 123 A delicious dessert apple.

132 A hardy tree and fine fruit. Supposed to be identical with Golden Russet of Mass., but not fully decided.

137 Very valuable for market or stock.
 157 Hardy and productive South-west.
 162 A profitable market sort.
 165 A valued sweet apple.

NUMBER.	and 49°										II.—Central Division Between 39° and 42°										III.—South. Div. E. 28° & 35°																				
	Minnesota.	Dakota.	Montana.	Wyoming.	Idaho.	Washington.	Oregon.	Pennsylvania.	New Jersey.	Delaware.	Maryland & D. C.	Virginia.	North Carolina.	Ohio.	Indiana.	West Virginia.	Kentucky.	Tennessee.	Illinois.	Iowa.	Missouri.	Nebraska.	Kansas.	Colorado.	Utah.	Nevada.	California.	South Carolina.	Georgia.	Alabama.	Florida.	Indian Territory.	Arkansas.	Mississippi.	Louisiana.	Texas.	New Mexico.	Arizona.			
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166 A seedling from Rambo, which it resembles.

174 One of the most delicious apples; tree a poor grower.

NUMBER.	NAMES.	DESCRIPTION.						1.—Northern Division—Between 42°												
		SIZE.	FORM.	COLOR.	QUALITY.	USE.	SEASON.	ORIGIN.	Nova Scotia.	New Brunswick.	Maine.	New Hampshire.	Vermont.	Massachusetts.	Rhode Island.	Connecticut.	New York.	Ontario.	Michigan.	Wisconsin.
178	Minister	l.	ob.	r. s.	v. 75	K. M.	L. A.	Am.												
179	Monmouth Pippin <i>Red Check Pippin</i>	l.	fl.	y. r.	v. 75	F. M.	W.	Am.				*								
180	Moore's Sweet	m.	r. ob.	r.	b.	K.	W.	Am.												
181	Mother	m.	r. c.	y. r.	b.	F. M.	W.	Am.				*								
182	Munson Sweet <i>Orange Sweet.</i>	m.	fl.	y.	75	K. M.	L. A.	Am.	*			*								*
183	Newtown Pippin <i>Abenacole Pippin, Brooke's Pippin.</i>	l.	r. ob.	75 y.	v. 75	F. M.	W.	Am.												*
184	Newtown Spitzenberg <i>Vanderere, of New York.</i>	m.	r. ob.	y. r.	b.	F. M.	W.	Am.	†							*	*	*	*	*
185	Nickajack	l.	r. ob.	r. s.	v. 75	F. M.	W.	Am.												
186	Nonpareil Russett	m.	r.	y. g.	v. 75	F. M.	W.	Eng.												
187	Northern Spy	l.	r. c.	y. r.	b.	F. M.	W.	Am.	**											*
188	Northern Sweet	m.	r. ob.	75 y.	v. 75	F.	E. A.	Am.				*								*
189	Onesee Greening	m.	ob.	y.	v. 75		A.	Am.												
190	Ohio Nonpareil	l.	r. ob.	y. r.	v. 75	F. M.	L. A.	Am.												†
191	Orange Pippin	m.	ob.	y.	v. 75	F. M.	A.	Am.												
192	Ortley <i>White Bellflower, Woolman's Long.</i>	m.	ob.	75 y.	v. 75	F. M.	W.	Am.												*
193	Otoc Red Streak	m.	r. ob.	y. r.	v. 75	F. M.	W.	Am.												
194	Peach Pond Sweet	m.	fl.	r. s.	v. 75	F.	A.	Am.												
195	Peck's Pleasant	m.	r.	75 y.	v. 75	F. M.	W.	Am.	†			*								*
196	Perry Russet	m.	r. c.	rus.	v. 75	F. M.	W.	Am.				*								*
197	Pewaukee	l.	fl.	r. s.	v. 75	F. M.	W.	Am.												*
198	Pickard's Reserve	m.	r. ob.	r. y.	v. 75	F.	W.	Am.												*
199	Pilot	l.	r. ob.	75 y. r.	v. 75	F. M.	W.	Am.												
200	Pittsburgh Pippin	l.	fl.	75 y.	v. 75	F. M.	W.	Am.												
201	Plumb's Cider	m.	r. c.	75 y. r.	v. 75	K. M.	A.	Am.												*
202	Pomme Grise	s.	r. ob.	y. rus.	b.	F.	W.	F.				*								*
203	Porter	l.	ob.	75 y.	b.	F. M.	W.	Am.				*								*
204	Premium	m.	r. c.	y. g.	v. 75	F. M.	E. W.	Am.			*	*	*	*	*	*	*	*	*	*
205	Primate	m.	r. c.	75 y.	b.	F.	E. A.	Am.			*	*	*	*	*	†	*	*	*	*
206	Progress	m.	r. ob.	y.	v. 75	F. M.	W.	Am.								*	*	*	*	*
207	Prothers' Winter	m.	c.	y. r.	v. 75	F. M.	L. W.	Am.								*	*	*	*	*
208	Pryor's Red	l.	r. ob.	y. r.	v. 75	F. M.	W.	Am.												*
209	Pumpkin Sweet <i>Lynn's Pumpkin Sweet.</i>	l.	r. ob.	y.	75	K. M.	E. W.	Am.												*
210	Ramsdell's Sweet	m.	ob.	y. r.	v. 75	K. M.	L. A.	Am.			*	*								*
211	Rambo	m.	fl.	y. r.	v. 75	F. M.	L. A.	Am.			*	*								*
212	Rawle's Genet	l.	r. c.	y. r.	v. 75	F. M.	W.	Am.			*	*								*
213	Red Astrachan	l.	r.	y. r.	v. 75	K. M.	S.	F.	**		*	*	*	*	*	*	*	*	*	*
214	Red Canada <i>Old Nonesuch, Richfield Nonesuch, Steel's Red Winter of some.</i>	m.	r. ob.	y. r.	b.	F. M.	W.	Am.			*	*	*	*	*	*	*	*	*	*
215	Red Cathed	l.	r. c.	y. r.	75	F. M.	L. A.	Am.												
216	Red Crab	s.	r.	r.		Cider	L. A.	Am.												
217	Red Winter Pearmain <i>Bucombe.</i>	m.	r. ob.	y. r.	75	F. M.	W.	Am.												
218	Red Stripe	m.	ob. c.	y. r.	75	K. M.	S.	Am.												
219	Rhode Island Greening	l.	r. ob.	g. y.	v. 75	F. M.	W.	Am.		*	*	*	*	*	*	*	*	*	*	*
220	Rhodes' Orange	m.	r. ob.	y. r.	75	F.	S.	Am.												
221	Ribston Pippin	m.	r.	y. r.	v. 75	F. M.	W.	Eng.	**		*	*	*	*	*	*	*	*	*	*
222	Ridge Pippin	l.	r. c.	y. rus.	75	M.	W.	Am.								*	*	*	*	*
223	Robertson's Superb	l.			75	F. M.	A.	Am.												
224	Robertson's White	m.	r. ob.	g. y.	75	F. M.	L. A.	Am.												*
225	Rock Pippin <i>Lemon.</i>	m.	c.	y.		M.	W.	Am.												*
226	Romanite, of the South	s.	r. c.	y. r.	v. 75	F. M.	W.	Am.												*
227	Roman Stem	m.	r.	y. rus.	v. 75	F. M.	W.	Am.												*
228	Rome Beauty	l.	r.	y. r.	75	M.	L. A.	Am.												*
229	Roxbury Russet	m.	r. ob.	y. rus.	v. 75	F. M.	W.	Am.	*		*	*	*	*	*	*	*	*	*	*
230	Saint Lawrence	l.	fl.	y. r.	v. 75	M.	A.	Am.			*	*	*	*	*	*	*	*	*	*
231	Saxton <i>Fall Stripe.</i>	m.	r. ob.	y. r.	75	F.	A.	Am.												*
232	Sheppard's Sweet	m.	r. c.	r. s.	75	F.	L. A.	Am.							*					
233	Shitawasse Beauty	m.	fl.	r. y.	v. 75	F. M.	W.	Am.												*

181 Estimated where known. 188 Valued for dessert, not productive. 192 An old variety; extensively planted at the West, twenty or more years since.
 185 This apple is known South and West by over forty different names. 190 Estimated where known.

NUMBER.	NAMES.	DESCRIPTION.						I.—Northern Division—between 42°												
		SIZE.	FORM.	COLOR.	QUALITY.	USE.	SEASON.	ORIGIN.	Nova Scotia.	New Brunswick.	Maine.	New Hampshire.	Vermont.	Massachusetts.	Rhode Island.	Connecticut.	New York.	Ontario.	Michigan.	Wisconsin.
234	Shockley	s.	r. c.	y. r.	75	F. M.	W.	Am.												
235	Smith's Cider	l.	r. ob.	y. r.	75	F. M.	W.	Am.												
236	Smokehouse	l.	r. ob.	y. r.	75	K. M.	W.	Am.												
237	Sops of Wine <i>Homing.</i>	m.	r.	y. r.	75	K. M.	E. A.	Eu.				*		*		*			**	
238	Soulard	m.	r. ob.	y. r.	75	M.	L. A.													
239	Standstill	m.	r. ob.	75 y.	75	F.	W.	Am.												
240	Stark	l.	r. c.	y. r.	75	F.	W.	Am.												
241	Stevenson's Winter	m.	r. ob.	y.	75	F.	W.	Am.												
242	Summer Bellefleur	m.	c.	y.	75	F. M.	A.	Am.												
243	Summer Hagloe	l.	r. ob.	r. s.	75	K. M.	S.	Am.												
244	Summer King	m.	fl.	y. r.	75	F. M.	S.	Am.												
245	Summer Queen	l.	r. c.	y. r.	75	K. M.	S.	Am.												
246	Summer Pound Royal	l.	r. c.	y. rus	75	M.	E. A.	Am.												
247	Summer Pippin <i>Champlain.</i>	m.	ob. c.	y. r.	75	K. M.	L. S.	Am.					*							
248	Summer Rambou	m.	fl.	y. r.	75	M.	E. A.	Fr.												
249	Summer Rose	s.	r.	y. r.	75	F.	S.	Am.					*							
250	Summer Sweet Paradise	l.	r.	75 y.	75	F.	E. A.	Am.												
251	Susan's Spice	m.	fl.	y. r.	75	F.	A.	Am.												
252	Swaar	l.	r. ob.	75 y.	75	F. M.	W.	Am.												
253	Sweet Pear	m.	r. c.	y.	75	F.	A.	Am.												
254	Sweet Winesap	m.	fl.	r. s.	75	M.	W.	Am.												
255	Taunton	l.	r. c.	y. r.	75	F. M.	A.	Am.												
256	Tetofsky	m.	fl. c.	y. r.	75	K.	S.	Rus.												
257	Tewksbury Winter Blush	s.	fl.	y. r.	75	F. M.	W.	Am.												
258	Tillaquah	m.	r. fl.	y. r.	75	F. M.	W.	Am.												
259	Timnouth	m.	fl.	y. r.	75	F.	W.	Am.												
260	Talman's Sweet	m.	r.	75 y.	75	K. M.	W.	Am.												
261	Townsend <i>Hocking.</i>	m.	r. ob.	r. s.	75	M.	S.	Am.				*	*	*	*	*	*	*	*	*
262	Trenton Early	m.	r.	y.	75	F.	S.	Am.												
263	Twenty Ounce Apple <i>Cayuga Red Streak.</i>	l.	r.	r. s.	75	F. M.	L. A.	Am.	*					*	*	*	*	*	*	*
264	Utter	m.	r. ob.	y. r.	75	F. K.	A.	Am.												
265	Vandevere	m.	fl.	y. r.	75	M.	W.	Am.												
266	Victuals and Drink	l.	ob.	y. rus	75	F.	W.	Am.												
267	Virginia Greening	l.	fl.	75 y.	75	M.	W.	Am.												
268	Wagener	m.	r. ob.	y. r.	75	F.	W.	Am.					*	*	*	*	*	*	*	*
269	Warfield	l.	fl.	y.	75	F. M.	A.	Am.												
270	Washington <i>Washington Strawberry.</i>	l.	r. c.	y. r.	75	F. M.	E. A.	Am.												
271	Washington Royal	m.	r. ob.	75 y.	75	M.	W.	Am.												
272	Waugh's Crab	s.	r. c.	r. s.	75	Cider	W.	Am.												
273	Wealthy	m.	r. ob.	r. s.	75	F. M.	W.	Am.												
274	Webb's Winter	m.	r.	y.	75	F.	W.	Am.												
275	Wellford's Yellow	s.	r. ob.	75 y.	75	M.	W.	Am.												
276	Westfield Seek-no-further	l.	r. c.	y. r.	75	F. M.	W.	Am.						*						
277	White Doctor	l.	r. ob.	75 y.	75	K. M.	E. A.	Am.												
278	White Juneating, May, Early May, &c.	s.	r.	75 y.	75	F. M.	S.	F.												
279	White Paradise <i>Lady Finger.</i>	m.	r. fl.	y. r.	75	M.	W.	Am.												
280	White Pippin	l.	r. ob.	75 y.	75	F. M.	W.	Am.												
281	White Winter Pearmain	m.	r. c.	y. r.	75	F. M.	W.	Am.												
282	White Rambou	m.	r. ob.	75 y.	75	M.	L. A.	Am.												
283	Williams' Favorite	m.	r. c.	y. r.	75	M.	S.	Am.				*	*	*	*	*	*	*	*	*
284	Willis Sweet	l.	r.	y. r.	75	K. M.	S.	Am.				*	*	*	*	*	*	*	*	*
285	Willow Twig—James River	m.	r. c.	y. r.	75	K. M.	W.	Am.												
286	Wine <i>Hoy's Wine, Pennsylvania Red Streak</i>	l.	r.	y. r.	75	F. M.	W.	Am.												
287	Winesap	m.	r.	y. r.	75	F. M.	W.	Am.												
288	Winter Sweet Paradise	l.	r. ob.	75 y.	75	F.	W.	Am.					*	*	*	*	*	*	*	*
289	Yates	s.	fl.	y. r.	75	F. M.	W.	Am.												
290	Yellow Bellefleur	l.	ob.	75 y.	75	F. M.	W.	Am.												
291	Yellow June	m.	r. ob.	y.	75	F.	S.	Am.												
292	York Imperial	m.	fl.	y. r.	75	F. M.	W.	Am.												
293	Yopp's Favorite	l.	r. c.	y.	75	F.	A.	Am.												

260. Valued for stock feeding.

285. Valuable for late keeping.

II.—APPLES—CRABS.

NUMBER.	NAMES	DESCRIPTION							I.—Northern Division—between 42°											
		SIZE.	FORM.	COLOR.	QUALITY.	USE.	SEASON.	ORIGIN.	Nova Scotia.	New Brunswick.	Maine.	New Hampshire.	Vermont.	Massachusetts.	Rhode Island.	Connecticut.	New York.	Ontario.	Michigan.	Wisconsin.
1	Byer's Beauty	z.	r. fl.	r.	g.	F. M.	E. A.	Am.												
2	Cherry	z.	r.	y. r.	g.	K.	A.	F.												
3	Glover's Early							Am.												
4	Haas							Am.												
5	Hyslop	l.	r.	r.	g.	F. M.	A.	Am.	*											
6	Lady Elgin	l.	r. ob.	y. r.	v. g.	F. M.	L. A.	Am.												
7	Marengo	l.	r. fl.	y. r.	g.	F. M.	W.	Am.												
8	Montreal Beauty	l.	r. ob.	y. r.	g.	F. M.	A.	Am.	*											
9	Red Siberian	m.	r.	r.	g.	F. M.	A.	F.							*					
10	Spitzenberg							Am.												
11	Sylvan Sweet	l.	r. fl.	y. r.	g.	F. M.	S.	Am.												
12	Transcendent	l.	r. ob.	y. r.	g.	F. M.	A.	Am.	*											
13	Yellow Siberian	m.	r.	y.	g.	F. M.	A.	F.							*					

II.—APPLES—CRABS.

Number.	and 49°	II.—Central Division—Between 35° and 42°	III.—South. Div.—b. 28° & 35°
1	Minnesota.		South Carolina *
2	Dakota.		Georgia.
3	Montana.		Alabama.
4	Wyoming.		Florida.
5	Idaho.		Indian Territory.
6	Washington		Arkansas.
7	Oregon.		Mississippi.
8			Louisiana.
9			Texas.
10			New Mexico.
11	Pennsylvania.		Arizona
12	New Jersey.		
13	Delaware.		
	Maryland & D.C.		
	Virginia.		
	North Carolina.		
	Ohio.		
	Indiana.		
	West Virginia.		
	Kentucky.		
	Tennessee.		
	Illinois.		
	Iowa.		
	Missouri.		
	Nebraska.		
	Kansas.		
	Colorado.		
	Utah.		
	Nevada.		
	California.		

III.—APRICOTS.

The columns explain as follows: SIZE—l., large; m., medium; s., small. FORM—r., roundish; r. f., roundish flattened; r. o., roundish oval; ob. c., oblong compressed. COLOR—y. o., yellow, shaded to deep orange in sun; o. r., orange, with a red cheek; o., orange. QUALITY—g., good; v. g., very good; b., best. USE—All Apricots being valued for the dessert, the letter F will signify that it is extra for the dessert, and F. M. that it is valued for dessert, and at same time profitable for market. SEASON—E., early; M., medium; L., late in season of ripening. ORIGIN—F., foreign; Am., American.

NUMBER	NAMES	DESCRIPTION.						I.—Northern Division—Between 42°													
		SIZE.	FORM.	COLOR.	QUALITY.	USE.	SEASON.	ORIGIN.	Nova Scotia.	New Brunswick.	Maine.	New Hampshire.	Vermont.	Massachusetts.	Rhode Island.	Connecticut.	New York.	Ontario.	Michigan.	Wisconsin.	
1	Breda	m.	r.	o.	v. g.	F. M.	E.	F.													
2	Early Golden	s.	r. o.	o.	v. g.	F. M.	E.	Am.													
3	Hemskirke	l.	r. f.	o. r.	b.	F. M.	M.	F.													
4	Large Early	m.	ob. c.	o. r.	b.	F.	E.	F.													
5	Large Red	l.	r. o.	o. r.	b.	F.	M.	F.													
6	Moorpark	l.	r.	y. o.	b.	F. M.	L.	F.													
7	Musch Musch	s.	r.	y.	g.	F.	E.	F.													
8	Peach	l.	r. f.	y. o.	b.	F. M.	L.	F.													
9	Red Masculine	s.	r.	y. o.	v. g.	F. M.	M.	F.													
10	St. Ambrose	l.	r. f.	y. o.	b.	F.	M.	F.													
11	Turkey	m.	r.	y. o.	v. g.	F. M.	L.	F.													

IV.—BLACKBERRIES.

The columns explain as follows: SIZE—l., large; m., medium; s., small. FORM—ob. c., oblong conic; r. c., roundish conical or oval; ob. ov., oblong oval. COLOR—b., black. QUALITY—g., good; v. g., very good; b., best. USE—F. M., family and market; M., market. SEASON—M., medium; E., early; L., late. ORIGIN—Am., American; F., foreign.

NUMBER	NAMES	DESCRIPTION.						I.—Northern Division—Between 42°													
		SIZE.	FORM.	COLOR.	QUALITY.	USE.	SEASON.	ORIGIN.	Nova Scotia.	New Brunswick.	Maine.	New Hampshire.	Vermont.	Massachusetts.	Rhode Island.	Connecticut.	New York.	Ontario.	Michigan.	Wisconsin.	
1	Ancient Briton	l.	ob. ov.	b.	v. g.	F. M.	M.	Am.													
2	Barnard	l.	ob. ov.	b.	v. g.	F. M.	M.	Am.													
3	Dorchester	m.	ob. c.	b.	b.	F.	M.	Am.													
4	Kittatinny	l.	r. c.	b.	b.	F. M.	M.	Am.													
5	New Rochelle or Lawton	l.	ov.	b.	g.	M.	L.	Am.													
6	Snyder	m.	r. ov.	b.	v. g.	F. M.	E.	Am.													
7	Wilson's Early	l.	ob. ov.	b.	v. g.	M.	E.	Am.													

1 Of fine flavor

2 Mainly valued for market.

V. — CHERRIES.

The columns explain as follows: SIZE—l., large; m., medium; s., small. FORM—ob. h., obtuse heart shape; r.ob.h., roundish obtuse heart shape; r. h., roundish heart shape; r., roundish or round. COLOR—l. r., lively bright red; d. r., dark red, almost black; a. m., amber mottled with red; y. r., yellow ground shaded and marbled with red. CLASS—H., Hearts, or tender fleshed sweet cherries; B., Bigarreau, or firm fleshed cherries; D., Dukes, having a character in tree and fruit midway between the Hearts and Morellos; M., Morellos, having acid fruit, and the tree of small, slender growth. USE—F., family, for dessert; F. M., family or market; K. M., for cooking or market; M., market. SEASON—E., early; M., medium; L., late. ORIGIN—F., Foreign; Am., American.

NUMBER	NAMES	DESCRIPTION.						ORIGIN.	I. Northern Division—between 42°												
		SIZE.	FORM.	COLOR.	CLASS.	USE.	SEASON.		Nova Scotia.	New Brunswick.	Maine.	New Hampshire.	Vermont.	Massachusetts.	Rhode Island.	Connecticut.	New York.	Ontario.	Michigan.	Wisconsin.	
1	Arch Duke	l.	ob. h.	d. r.	D.	K. M.	L.	F.													
2	Belle Magnifique	l.	r. h.	l. r.	D.	K. M.	L.	F.													
3	Belle de Choisy	m.	r.	a. m.	D.	F.	M.	F.													
4	Belle d'Orleans	m.	r. h.	y. r.	H.	F. M.	E.	F.													
5	Bigarreau <i>Graffion, Yellow Spanish.</i>	l.	ob. h.	y. r.	B.	F. M.	M.	F.	*												
6	Bigarreau of Mezel <i>Monstrucuse de Mezel, Bigarreau Gaubalis</i>	l.	ob. h.	d. r.	B.	F. M.	M.	F.													
7	Black Eagle	l.	ob. h.	d. r.	B.	F. M.	M.	F.													
8	Black Heart	l.	r. h.	d. r.	H.	F. M.	M.	F.													
9	Black Republican	l.	r. h.	b.	G.	F. M.	L.	Am.													
10	Black Tartarian	l.	r. h.	d. r.	H.	F. M.	M.	F.	*												
11	Buttner's Yellow	m.	r.	y.	G.	F. M.	L.	F.													
12	Carnation	m.	r.	a. m.	D.	K. M.	L.	F.													
13	Coe's Transparent	m.	r.	a. m.	H.	F.	M.	Am.													
14	Donna Maria	m.	r.	d. r.	M.	K. M.	L.	F.													
15	Downer's Late	m.	r. h.	y. r.	H.	F. M.	L.	Am.	*												
16	Early Purple Guigne	m.	r. h.	d. r.	H.	F. M.	E.	F.													
17	Early Richmond	s.	r.	l. r.	M.	K. M.	E.	F.													
18	Elton	l.	r. h.	y. r.	B.	F. M.	M.	F.		*											
19	Governor Wood	l.	r. h.	y. r.	H.	F. M.	M.	Am.													
20	Gridley	m.	r.	d. r.	B.	M.	M.	Am.													
21	Hovey	l.	r. h.	y. r.	B.	F. M.	M.	Am.													
22	Knight's Early Black	l.	ob. h.	d. r.	H.	F. M.	E.	F.													
23	Late Duke	l.	ob. h.	d. r.	D.	K. M.	L.	F.		*											
24	Late Kentish	m.	r.	r.	G.	K.	M.	F.													
25	Louis Phillippe	l.	r.	d. r.	D.	K. M.	L.	F.		*											
26	May Duke	l.	rob. h.	d. r.	D.	K. M.	E.	F.	*	*											
27	Morello <i>English Morello, Large Morello.</i>	l.	r. h.	d. r.	M.	K. M.	L.	F.	*	*											
28	Napoleon <i>Royal Ann, in California and Oregon.</i>	l.	rob. h.	y. r.	B.	F. M.	M.	F.			*										
29	Oscoda	l.	r. h.	d. r.	H.	F. M.	M.	Am.													
30	Ohio Beauty	l.	ob. h.	y. r.	H.	F. M.	M.	Am.													
31	Plumstone Morello	l.	r.	d. r.	M.	K. M.	L.	F.		*											
32	Pontiac	l.	ob. h.	d. r.	H.	F. M.	M.	Am.													
33	Red Jacket	l.	ob. h.	y. r.	H.	F. M.	L.	Am.													
34	Reine Hortense	l.	r.	l. r.	D.	F. M.	L.	F.		*											
35	Rockport	l.	rob. h.	a. m.	B.	F. M.	E.	Am.													
36	Royal Duke	l.	r.	d. r.	D.	K. M.	M.	F.													
37	Teemusch	m.	ob. h.	d. r.	H.	M.	L.	Am.													
38	Tradesant's Black Heart <i>Elkhorn, Large Black Bigarreau.</i>	l.	r. h.	d. r.	B.	M.	L.	F.													

* A fine old variety, but by many supposed superseded. 14 Very hardy and productive. 29 An old variety, very firm flesh; carries well to market.

V.—CHERRIES.

The columns explain as follows: SIZE—l., large; m., medium; s., small. FORM—ob. h., obtuse heart shape; r. ob. h., roundish obtuse heart shape; r. h., roundish heart shape; r., roundish or round. COLOR—l. r., lively bright red; d. r. dark red, almost black; a. m., amber mottled with red; y. r., yellow ground shaded and marbled with red. CLASS—H., Hearts, or tender fleshed sweet cherries; B., Bigarreau, or firm fleshed cherries; D., Dukas, having a character in tree and fruit midway between the Hearts and Morellos; M., Morellos, having acid fruit, and the tree of small, slender growth. USE—F., family, for dessert; F. M., family or market; K. M., for cooking or market; M., market. SEASON—E., early; M., medium; L., late. ORIGIN—F., Foreign; Am., American.

NUMBER.	and 49°										II.—Central Division—Between 35° and 40°										III.—South. Div.—b. 28° & 35°																			
	Minnesota.	Dakota.	Montana.	Wyoming.	Idaho.	Washington.	Oregon.	Pennsylvania.	New Jersey.	Delaware.	Maryland & D. C.	Virginia.	North Carolina.	Ohio.	Indiana.	West Virginia.	Kentucky.	Tennessee.	Illinois.	Iowa.	Missouri.	Nebraska.	Kansas.	Colorado.	Utah.	Nevada.	California.	South Carolina.	Georgia.	Alabama.	Florida.	Indian Territory.	Arkansas.	Mississippi.	Louisiana.	Texas.	New Mexico.	Arizona.		
1																																								
2								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
3								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
4								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
5								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
6								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
7								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
9								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
24								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
25								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
26								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
27								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
28								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
29								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
30								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
31								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
32								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
33								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
34								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
35								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
36								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
37								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
38								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

25 An old excellent sort; little known.

33 The latest ripening large sweet cherry

VI.—CURRANTS.

The columns explain. SIZE—l, large; m., medium; s., small. FORM—with reference to form of bunch—l, long; v. l., very long; s., short; m., medium. COLOR—r., red; b., black; w., white. QUALITY—a., acid; m. a., moderately acid; v. a., very acid. USE—K. M., kitchen and market; F. M., family and market; M., market. SEASON—E., early; M., medium; L., late. ORIGIN—F., foreign.

NUMBER	NAMES	DESCRIPTION.						1.—Northern Division—Between 42°												
		SIZE.	FORM.	COLOR.	QUALITY.	USE.	SEASON.	ORIGIN.	Nova Scotia.	New Brunswick.	Maine.	New Hampshire.	Vermont.	Massachusetts.	Rhode Island.	Connecticut.	New York.	Ontario.	Michigan.	Wisconsin.
1	Black Naples	l.	s.	b.	m. a.	K. M.	M.	F.	*											
2	Cherry	l.	s.	r.	v. a.	M.	M.	F.												
3	Common Black <i>Black English.</i>	s.	s.	b.	m. a.	K. M.	M.	F.					*	*	*	*	*	*	*	*
4	Fertile de Palluan	l.	l.	r.	a.	F. M.	M.	F.			*									
5	Fertile d'Angers	l.	l.	r.	m. a.	F. M.	M.	F.			*									
6	Knight's Large Red	l.	m.	r.	m. a.	F.	M.	F.			*									
7	La Versaillaise	l.	s.	r.	a.	M.	M.	F.			*									
8	Prince Albert	l.	l.	r.	m. a.	M.	L.	F.			*									
9	Red Dutch	m.	m.	r.	m. a.	F. M.	E.	F.	*				*	*	*	*	*	*	*	*
10	Red Grape	m.	m.	r.	m. a.	F. M.	E.	F.	*				*	*	*	*	*	*	*	*
11	White Dutch	m.	m.	w.	m. a.	F. M.	E.	F.	*		*		*	*	*	*	*	*	*	*
12	White Grape	m.	m.	w.	m. a.	F. M.	E.	F.	*		*		*	*	*	*	*	*	*	*
13	Victoria <i>Ruby Castle.</i>	l.	v. l.	r.	a.	F. M.	L.	F.			*		*	*	*	*	*	*	*	*

VII.—GOOSEBERRIES.

The columns explain. SIZE—l, large; m., medium; s., small. FORM—r., round; o., oval; r. o., roundish oval. COLOR—r., reddish, when fully ripe; g., greenish yellow, when fully ripe. QUALITY—g., good; v. g., very good; b., best. USE—K., kitchen; M., market. SEASON—E., early; M., medium; M. L., medium late. ORIGIN—Am., American; F., foreign.

NUMBER	NAMES	DESCRIPTION.						1.—Northern Division—Between 42°												
		SIZE.	FORM.	COLOR.	QUALITY.	USE.	SEASON.	ORIGIN.	Nova Scotia.	New Brunswick.	Maine.	New Hampshire.	Vermont.	Massachusetts.	Rhode Island.	Connecticut.	New York.	Ontario.	Michigan.	Wisconsin.
1	Crown Bob	l.	ob.	r	v. g.	K. M.	M.	F.	*											
2	Downing	m.	r. o.	g.	v. g.	K.	M. L.	Am.					*	*	*	*	*	*	*	*
3	Houghton	s.	r. o.	r.	v. g.	K. M.	E.	Am.			*				*	*	*	*	*	*
4	Mountain	l.	o.	r.	v. g.	M.	M.	Am.					*	*	*	*	*	*	*	*
5	Orange	m.	r.	g.	v. g.	K. M.	E.	Am.					*	*	*	*	*	*	*	*
6	Pale Red, <i>Cluster, Am. Seedling</i>	m.	r. o.	r.	v. g.	K. M.	E.	F.					*	*	*	*	*	*	*	*
7	Roaring Lion	l.	ob.	r.	v. g.	K. M.	M.	F.					*	*	*	*	*	*	*	*
8	Smith's Improved	l.	o.	g.	v. g.	K. M.	M.	Am.					*	*	*	*	*	*	*	*
9	Woodward's Whitesmith	l.	o.	g.	v. g.	K. M.		F.					*	*	*	*	*	*	*	*

2 A little liable to sunburn or blister.

4 A strong growing bush—berry with a very thick skin

6 An old sort, entirely free from mildew—more upright than Houghton.

VI.—CURRANTS.

The columns explain: SIZE—l., large; m., medium; s., small. FORM—with reference to the form of bunch—l. long; v. l., very long; s., short; m., medium. COLOR—r., red; b., black; w., white. QUALITY—a., acid; m. a., moderately acid; v. a., very acid. SEASON—E., early; M., medium; L., late. USE—K. M., kitchen and market; F. M. family and market; M., market. ORIGIN—F., foreign.

and 49°		II.—Central Division—Between 35° and 42°		III.—South. Div.—b. 28° & 35°	
NUMBER.		NUMBER.		NUMBER.	
1	Minnesota.	1	Pennsylvania.	1	South Carolina.
2	Dakota.	2	New Jersey.	2	Georgia.
3	Montana.	3	Delaware.	3	Alabama.
4	Wyoming.	4	Maryland & D. C.	4	Florida.
5	Idaho.	5	Virginia.	5	Indian Territory.
6	Washington.	6	North Carolina.	6	Arkansas.
7	Oregon.	7	Ohio.	7	Mississippi.
8		8	Indiana.	8	Louisiana.
9		9	West Virginia.	9	Texas.
10		10	Kentucky.	10	New Mexico.
11		11	Tennessee.	11	Arizona.
12		12	Illinois.		
13		13	Iowa.		
			Missouri.		
			Nebraska.		
			Kansas.		
			Colorado.		
			Utah.		
			Nevada.		
			California.		

VII.—GOOSEBERRIES.

The columns explain: SIZE—l., large; m., medium; s., small. FORM—r., round; o., oval; r. o., roundish oval. COLOR—r., reddish when fully ripe; g., greenish yellow, when fully ripe. QUALITY—g., good; v. g., very good; b., best. USE—K., kitchen; M., market. SEASON—E., early; M., medium; M. L., medium late. ORIGIN—Am., American; F., foreign.

and 49°		II.—Central Division—Between 35° and 42°		III.—South. Div.—b. 28° & 35°	
NUMBER.		NUMBER.		NUMBER.	
1	Minnesota.	1	Pennsylvania.	1	South Carolina.
2	Dakota.	2	New Jersey.	2	Georgia.
3	Montana.	3	Delaware.	3	Alabama.
4	Wyoming.	4	Maryland & D. C.	4	Florida.
5	Idaho.	5	Virginia.	5	Indian Territory.
6	Washington.	6	North Carolina.	6	Arkansas.
7	Oregon.	7	Ohio.	7	Mississippi.
8		8	Indiana.	8	Louisiana.
9		9	West Virginia.	9	Texas.
		10	Kentucky.	10	New Mexico.
		11	Tennessee.	11	Arizona.
		12	Illinois.		
		13	Iowa.		
			Missouri.		
			Nebraska.		
			Kansas.		
			Colorado.		
			Utah.		
			Nevada.		
			California.		

8 New and promising.

9 The best of all the foreign large sorts in its immunity from mildew

VIII.—GRAPES—NATIVE.

The columns explain as follows: SIZE—with reference to the berry, l., large; m., medium; s., small. FORM—with reference to bunch and berry, s. r., short bunch, round berry; l. r., large and round; m. r. o., medium bunch, roundish oval berry; m. r., medium bunch, round berry. COLOR—b., black or nearly so when fully ripe; r., reddish or coppery brownish red; g., greenish white or yellowish. QUALITY—g., good; v. g., very good; b., best. USE—T., table; M., market; W., wine. SEASON—E., early; M., medium; L., late. ORIGIN—Am., American.

NUMBER	NAMES	DESCRIPTION.						I.—Northern Division—Between 42°													
		SIZE.	FORM.	COLOR.	QUALITY.	USE.	SEASON.	ORIGIN.	Nova Scotia.	New Brunswick.	Maine.	New Hampshire.	Vermont.	Massachusetts.	Rhode Island.	Connecticut.	New York.	Ontario.	Michigan.	Wisconsin.	
1	Adirondac	m.	m. r.	b.	v. g.	T.	E.	Am.													
2	Agawam <i>Rogers' No. 15</i>	l.	s. r. o.	r.	g.	F. M.	M.	Am.													
3	Alvey	s.	m. r.	b.	v. g.	T.	E.	Am.													
4	Barry <i>Rogers' No. 43.</i>	l.	r.	b.	g.	T. M.	M.	Am.													
5	Catawba	l.	m. r. o.	r.	b.	T. M. W.	L.	Am.													
6	Clinton	s.	m. r.	b.	v. g.	T. W.	L.	Am.	*												
7	Concord	l.	l. r.	b.	v. g.	T. M. W.	M.	Am.	*												
8	Croveling	m.	m. r. o.	b.	v. g.	T.	E.	Am.	*												
9	Croton	s.	l. r. o.	g.	b.	T.	E.	Am.													
10	Delaware	s.	s. s.	r.	b.	T. M. W.	M.	Am.													
11	Diana	m.	s. r. o.	r.	v. g.	T. M.	L.	Am.	*												
12	Elsinburgh	s.	m. r.	b.	v. g.	T.	E.	Am.	*												
13	Essex <i>Rogers' No. 41</i>	l.	r.	b.	g.	T. M.	M.	Am.													
14	Eumelan	m.	r.	b.	v. g.	T.	M.	Am.													
15	Goethe <i>Rogers' No. 1.</i>	l.	l. r. o.	g.	v. g.	T. W.	L.	Am.													
16	Hartford Prolific	l.	m. r. o.	b.	v. g.	M.	E.	Am.	*												
17	Herbmont, Warren, &c.	s.	m. r.	b.	v. g.	T. W.	L.	Am.													
18	Iona	m.	m. r. o.	r.	b.	T. M. W.	L.	Am.													
19	Israella	m.	s. r. o.	b.	v. g.	T.	M.	Am.													
20	Isabella	l.	m. r. o.	b.	v. g.	T. M.	L.	Am.	*												
21	Ives	m.	m. r. o.	b.	g.	M. W.	M.	Am.													
22	Johnson <i>S. C. Scolling.</i>																				
23	Lindley <i>Rogers' No. 9</i>	m.	m. r. o.	r.	g.	F. M.	M.	Am.													
24	Massasoit <i>Rogers' No. 3.</i>	l.	m. r.	r.	g.	F. M.	M.	Am.													
25	Martha	l.	s. r.	g.	v. g.	M. W.	M.	Am.													
26	Maxatawney	m.	m. r. o.	g.	v. g.	T.	M.	Am.													
27	Merrimack <i>Rogers' No. 19</i>	l.	s. r.	b.	g.	M.	M.	Am.													
28	Miles	s.	m. r.	b.	g.	T.	E.	Am.													
29	Norton's Virginia	s.	m. r.	b.	v. g.	W.	L.	Am.													
30	Perkins	l.	r.	r.	v. g.	T. M.	E.	Am.													
31	Peter Wylie <i>Doctor Wylie.</i>	m.	r.	w.	v. g.	T.															
32	Rebecca	m.	s. r.	g.	v. g.	T.	M.	Am.													
33	Salem <i>Rogers' No. 22.</i>	l.	r.	p.	g.	M.	M.	Am.	†												
34	Scuppermong	l.	r.	r.	g.	W.	M.	Am.													
35	Telegraph <i>Christine.</i>	l.	m. r. o.	b.	v. g.	T. M.	E.	Am.													
36	Union Village <i>Ontario.</i>	l.	s. r. o.	b.	g.	M.	M.	Am.													
37	Walter	m.	s. r.	r.	b.	T. M. W.	M.	Am.													
38	Wilber <i>Rogers' No. 1.</i>	l.	l. r.	b.	v. g.	T. M.	M.	Am.													

1 Unreliable.
2 Too small.
3 Suited only to clayey loams and certain localities.

4 Hardy everywhere.
5 Succeeds everywhere.
6 Bunches imperfect.

7 The most promising white variety.
8 Wants rich soil and high culture.
9 liable to drop from the bunch.

XII.—ORANGES AND LEMONS.

NUMBER.	NAMES.	DESCRIPTION.						1.—Northern Division—Between 42°												
		SIZE.	FORM.	COLOR.	QUALITY.	USE.	SEASON.	ORIGIN.	Nova Scotia.	New Brunswick.	Maine.	New Hampshire.	Vermont.	Massachusetts.	Rhode Island.	Connecticut.	New York.	Ontario.	Michigan.	Wisconsin.
1	Brazilian																			
2	Louisiana Creole																			
3	Mandarin																			
4	Florida Lemon																			
5	Sicily Lemon																			

XIII.—PEACHES.

The columns explain. SIZE—l, large; m, medium; s, small. CLASS—F, freestone; C, clingstone. COLOR—relative to the flesh, w, white or pale colored; y, yellow or yellowish; g, greenish white, red at stone. QUALITY—j, v., juicy, vinous; m, j, r., melting, juicy, rich; s, j., sweet and juicy; s, j, h., sweet, juicy and high flavored. GLANDS—s., serrated, without glands; g., glands globose; r., glands reniform. SEASON—the Season of maturity, as Early, Medium or Late; those designated as Early, ripen in lat. 43 deg. previous to or about Sept. 1st; Medium, those ripening from 1st to 15th of Sept., and Late those after that period; a few of the Very Early and Very Late are so designated—E., early; M., medium; L., late; V. E., very early; V. L., very late. ORIGIN—Am., American; F., Foreign.

NUMBER.	NAMES.	DESCRIPTION.						1.—Northern Division—Between 42°												
		SIZE.	CLASS.	COLOR.	QUALITY.	GLANDS.	SEASON.	ORIGIN.	Nova Scotia.	New Brunswick.	Maine.	New Hampshire.	Vermont.	Massachusetts.	Rhode Island.	Connecticut.	New York.	Ontario.	Michigan.	Wisconsin.
1	Allen's October						L.	Am.												
2	Amelia	l.	F.	w.	m, j, r.	r.	E.	Am.												
3	Austin's Late Red	l.	C.	w.	j, v.	r.	L.	Am.												
4	Baldwin's Late	l.	F.	w.	j, m.	r.	L.	Am.												
5	Barnard	m.	F.	y.	j, v.	g.	E.													
6	Beer's Smock	l.	F.	y.	j, v.		L.	Am.												**
7	Bellegarde	l.	F.	g.	s, j.	g.	M.	F.												
8	Bergen's Yellow	m.	F.	y.	j, v.	r.	M.	Am.					*			*				*
9	Bordeaux	l.	C.	y.	j.	r.	E.	Am.					*							
10	Catharine	l.	C.	y, g.	j, r.	r.	M.	Am.												
11	Chinese Cling	l.	C.	g.	j, v.	r.	M.													
12	Cole's Early Red	m.	F.	w.	m, j, r.	g.	V. E.	Am.									*		*	*
13	Columbia	l.	F.	y.	j, v.	r.	M.	Am.									*		*	*
14	Coolidge's Favorite	l.	F.	w.	s, j, h.	g.	M.	Am.					**	*	*	*	*	*	*	*
15	Con's Cling												**	*	*	*	*	*	*	*
16	Crawford's Early	l.	F.	y.	j, v.	g.	M.	Am.					**	**	**	**	**	**	**	**
17	Crawford's Late	l.	F.	y.	j, v.	g.	L.	Am.					**	**	**	**	**	**	**	**
18	Deming's Orange	l.	C.	y, v.	j, r.		L.	Am.					*	*	*	*	*	*	*	*
	<i>Deming's Sept.</i>																			
19	Druid Hill	l.	F.	g.	m, j, r.	g.	V. L.	Am.									*		*	*
20	Early Beatrice	s.	F.	w.	m, j.	r.	V. E.	Eng.									*		*	*
21	Early Louise	m.	F.	w.	m, j.	r.	E.	Eng.									*		*	*
22	Early Newington Free	l.	F.	g.	j, v.	g.	E.	Am.									*		*	*
23	Early Rivers	l.	F.	p, y.	m, r.	r.	E.	Eng.									*		*	*
24	Early Tillotson	m.	F.	g.	m, j, r.	s.	V. E.	Am.						*						

2 This originated in South Carolina, and differs from the Missouri Amelia.
 18 Resembles Lemon Cling.

11 Berckmans thinks it is same as Shanghai.

NUMBER.	NAMES.	DESCRIPTION.						I.—Northern Division—between 42°												
		SIZE.	CLASS.	COLOR.	QUALITY.	CLANDS.	SEASON.	ORIGIN.	Nova Scotia.	New Brunswick.	Maine.	New Hampshire.	Vermont.	Massachusetts.	Rhode Island.	Connecticut.	New York.	Ontario.	Michigan.	Wisconsin.
25	Early York	m.	F.	w.	m.j.r	r	V. E.	Am.												
26	Eaton's Golden	m.	C.	y.	s.j.	r	L.	Am.						*	*		**	*		
27	Flewollen	l.	C.	y.	j.r.		E.	Am.												
28	Foster	l.	F.	y.	j.v.		L.	Am.						†			†		*	
29	George the Fourth	m.	F.	y.	m.j.r		M.	Am.						*	*		*	*	*	*
30	Grosse Mignonne <i>Royal Kensington.</i>	l.	F.	w.	s.j.h.	fg	M.	F.						*	*		*	*	*	*
31	Haine's Early Red	m.	F.	fg	s.j.	fg	V. E.	Am.									*	*	*	*
32	Hale's Early	m.	F.	w.	m.j.r.	fg	V. E.	Am.						*	*		*	*	*	*
33	Heath Cling	l.	C.	fg	s.j.h.	r.	V. L.	Am.						*	*		*	*	*	*
34	Hill's Chili	m.	F.					Am.												**
35	Hoover's Late Heath																			
36	Hyslop Cling	l.	C.	w.	m.j.r.	r.	V. L.	Am.												
37	Indian Blood Cling	l.	C.	y.	j.v.	r.	L.	Am.												
38	Indian Blood Freestone	l.	F.					Am.												*
39	Jacques	l.	F.	y.	j.v.	r.	M.	Am.						*			*		**	*
40	Kentrick's Heath <i>Heath Freestone.</i>	l.	F.	g.	j.v.	r.	L.	Am.						*			*		**	*
41	Keypoint White	l.	F.	w.r.	m.j.	r.	V. L.	Am.											*	
42	Lady Parham	m.	F.	g.	j.v.	r.	V. L.	Am.											*	
43	LaGrange	l.	F.	w.	s.j.h.	r.	V. L.	Am.											*	
44	Large Early York	m.	F.	w.	s.j.h.	fg	V. E.	Am.									**	*	*	*
45	Large White Cling	l.	C.	w.	s.j.	fg	L.	Am.									*	*	*	*
46	Late Red Rareripe	l.	F.	w.	s.j.h.	fg	M.	Am.							*		*	*	*	*
47	Late Admirable	v.l.	F.	y.g.	m.h.	fg	M.	F.						*			*	*	*	*
48	Lemon Cling	l.	C.	y.	j.v.	r.	L.	Am.									*	*	*	*
49	Leopold I. <i>Leopold Freestone.</i>	l.	F.	y.	j.v.	r.	M.	F.											*	*
50	Malta	l.	F.	g.	m.j.r.	r	M.	F.												
51	Mammoth Freestone	v.l.	F.																	
52	Mitchell's Mammoth	l.	C.	fg.w.	m.j.		L.	Am.												
53	Molden's White	l.	F.	w.	s.j.	r.	L.	Am.										*		
54	Montgomery's Late	l.	F.	w.r.	m.j.	r.	L.	Am.												
55	Morris' White	m.	F.	w.	m.j.r.	r.	M.	Am.						*			*	*	*	*
56	Mountain Rose	m.	F.	w.	s.j.	fg	M.	Am.						†			†		*	*
57	Noblesse	l.	F.	w.	s.j.	fg	M.	F.									*	*	*	*
58	Old Mixon Free	l.	F.	fg.	s.j.h.		M.	Am.						*	*	*	*	*	*	*
59	Old Mixon Cling	l.	C.	w.	m.j.r.	fg	M.	Am.						*	*	*	*	*	*	*
60	Picquett's Late	l.	F.	y.	s.j.	r.	M.	Am.						*			*	*	*	*
61	President	l.	F.	w.	m.j.r.	fg	M.	Am.						*			*	*	*	*
62	Pucelle de Malines	l.	F.	w.r.	m.j.	r	M.	Am.									*	*	*	*
63	Raymond Cling	l.	C.																	
64	Red Check Melocoton	l.	F.	y.	j.v.	fg	M.	Am.						*			*	*	*	*
65	Reeves' Favorite	l.	F.	y.r.	m.j.	fg	M.	Am.									*	*	*	*
66	Rollman's Cling	l.	C.	w.	j.v.	r.	L.	Am.												
67	Royal George	m.	F.	w.	m.j.r	r	E.	F.									*	*	*	*
68	Salway	l.	F.	y.r.	m.j.	r.	M.	Am.						*			*	*	*	*
69	Scott's October	m.	C.	y.			V. L.													
70	Shockley's Early																			
71	Smock	l.	F.	y.	j.v.	r.	L.	Am.											*	*
72	Snow	m.	F.	w.	s.j.	r.	M.	Am.									*	*	*	*
73	Snow's Orange	m.	F.	y.	m.j.	r.	M.	Am.							*	*	*	*	*	*
74	Stump the World	l.	F.	w.	s.j.h.	fg	L.	Am.						*			*	*	*	*
75	Sturtevant	m.	F.	y.	s.j.h.	fg	M.	Am.						*			*	*	*	*
76	Susquehanna	l.	F.	y.	s.j.v.	fg	M.	Am.						*			*	*	*	*
77	Tippecanoe	l.	C.	y.	j.v.	r.	L.	Am.						*			*	*	*	*
78	Troth's Early	m.	F.	w.	s.j.	fg	E.	Am.						*	*	*	*	*	*	*
79	Tuskena Cling													*	*	*	*	*	*	*
80	Van Zandt's Superb	m.	F.	w.	m.j.r	fg	M.	Am.						*	*	*	*	*	*	*
81	Ward's Late Free	l.	F.	w.	r.j.s	r.	L.	Am.									*	*	*	*
82	Washington Cling	m.	C.	y.r.	m.j.	r.	L.	Am.									*	*	*	*
83	Wheeler's Early	s	F.	w.r.	m.j.		V. E.	Am.												
84	White Imperial	m.	F.	w.	m.j.r	fg	E.	Am.									*	*	*	*
85	Yellow Alberge	m.	F.	y.	s.j.	fg	E.	F.						*	*	*	*	*	*	*
86	Yellow Rareripe	l.	F.	y.	j.v.	fg	E.	Am.						*	*	*	*	*	*	*
87	Yellow St. John <i>Flider's, Flider's St. John.</i>	l.	F.	y.	s.j.	fg	V. E.	Am.						*	*	*	*	*	*	*

52 Resembles Heath Cling, but later.

XIV.—PEARS.

The columns explain as follows: SIZE—s., small; l., large; m., medium. FORM—p., pyriform; r. o. p., roundish obtuse pyriform; r. a. p., roundish acute pyriform; ob. p., obtuse pyriform; ob. o. p., oblong obtuse pyriform; r., roundish; r. ob., roundish obtuse. COLOR—y. g., yellow or yellowish green with a red or russet-red cheek; y. r., yellow and russet; y., when mostly yellow or yellowish. QUALITY—g., good; v. g., very good; b., best. USE—F., valuable family dessert; K. M., kitchen and market; F. M., family and market. SEASON—S., summer; L. S., late summer; A., autumn; E. A., early autumn; L. A., late autumn; W., winter. ORIGIN—En., English; Am., American; F., French; Fl., Flemish; B., Belgium; H., Holland.

NUMBER.	NAMES.	DESCRIPTION.						I.—Northern Division—Between 42°												
		SIZE.	FORM.	COLOR.	QUALITY.	USE.	SEASON.	ORIGIN.	Nova Scotia.	New Brunswick.	Maine.	New Hampshire.	Vermont.	Massachusetts.	Rhode Island.	Connecticut.	New York.	Ontario.	Michigan.	Wisconsin.
1	Abbott	m.	ob. p.	y. r.	v. g.	F.	E. A.	Am.												
2	Ananas d'Ete	l.	p.	y. g.	v. g.	F. M.	E. A.	H.												
3	Andrews	l.	p.	y. g.	v. g.	F.	E. A.	Am.	†											
4	Bartlett	l.	ob. o. p.	y.	v. g.	F. M.	L. S.	En.												
5	Baronne de Mello	m.	r. a. p.	y. r.	v. g.	F. M.	E. A.	B.												
6	Belle Lucrative <i>Fondante d'Automne.</i>	m.	r. o. p.	y. g.	b.	F.	E. A.	Fl.												
7	Belle Epine Dumas <i>Duc de Bordeaux.</i>	m.	r. o. p.	y.	v. g.	F.	L. A.													†
8	Bergen <i>Island.</i>	l.	p. y. r.	y. g.	g.	F. M.	E. A.	Am.												
9	Beurre Bose	l.	p.	y. r.	b.	F. M.	L. A.	B.	†											
10	Beurre Clairgeau	l.	p.	y. r.	g.	M.	L. A.	F.												
11	Beurre d'Anjou	l.	ob. p.	y. g.	v. g.	M. F.	L. A.	F.	†											
12	Beurre d'Amanlis	l.	r. o. p.	y. g.	g.	M.	E. A.	B.												
13	Beurre de Brignais <i>Des Nonnes.</i>	m.	r. ob.	y.	v. g.	F.	E. A.													
14	Beurre Diel	l.	r. ob. p.	y. r.	v. g.	F. M.	L. A.	B.												
15	Beurre Giffard	m.	p.	y. g.	v. g.	F. M.	S.	F.												
16	Beurre Goubault	m.	ob. r.	g. y.	g.	F.	L. S.	F.												
17	Beurre Hardy	l.	ob. p.	y. g.	v. g.	F. M.	E. A.		†											
18	Beurre Langelier	m.	ob. p.	y. r.	v. g.	F. M.	W.	F.												
19	Beurre Precoce	m.	ob. p.	y. r.	g.	F. M.	S.	For.												
20	Beurre Superfin	m.	r. p.	y. r.	v. g.	F.	A.	F.												
21	Bloodgood	m.	r.	y. r.	v. g.	F.	S.	Am.												
22	Brandywine	m.	r. ob. p.	y. g.	v. g.	F. M.	S.	Am.												
23	Brialmont	l.	ob. p.	y. r.	v. g.	F. M.	A.	B.												
24	British Queen	l.	ob. p.	y. r.	v. g.	F. M.	A.	En.												
25	Buffum	m.	r. o. p.	y. g.	g.	M.	E. A.	Am.												
26	Caen du France	m.	ob. p.	y. r.	v. g.	F. M.	W.	F.												
27	Catillac	l.	r. a. p.	y.	g.	K. M.	W.	F.												
28	Chambers	m.	ob. v.	y.	g.	F. M.	S.	Am.												
29	Clapp's Favorite	l.	ob. o. p.	y. g.	v. g.	F. M.	S.	Am.												
30	Columbia	l.	r. o. p.	y.	g.	M. K.	W.	Am.												
31	Dallas	l.	ob. p.	y. g.	v. g.	F. M.	L. A.	Am.												
32	Dana's Hovey	s.	r. ob. p.	y. g.	b.	F.	W.	Am.												
33	Dearborn's Seedling	s.	r. p.	y.	v. g.	F.	S.	Am.												
34	Dix	l.	ob. p.	y.	b.	F. M.	L. A.	Am.												
35	Dr. Bachman (Docah)							Am.												
36	Doctor Reeder	s.	r. o. p.	y. r.	b.	F.	L. A.	Am.												
37	Doyenne Boussock	l.	r. o. p.	y. r.	v. g.	F. M.	E. A.	B.	†											
38	Doyenne d'Alencon	m.	r. p.	y. r.	v. g.	F. M.	W.													
39	Doyenne du Comice	l.	r. o. p.	y. g.	b.	F. M.	L. A.	F.												
40	Doyenne d'Ete	s.	r. o. p.	y. g.	v. g.	F.	S.	B.												
41	Duchesse d'Angoulême	l.	ob. o. p.	y.	v. g.	F. M.	A.	F.												
42	Duchesse de Bordeaux	m.	r.	y. r.	g.	M.	W.	F.												
43	Duchesse Precoce	l.	p. y. r.	y. g.	g.	F. M.	E. A.	For.												
44	Easter Beurre	l.	r. ob. p.	y. r.	v. g.	F.	W.	B.												
45	Emile d'Heyst	l.	ob. p.	y. r.	b.	F.	L. A.	B.												
46	Flemish Beauty	l.	r. ob. p.	y. g.	v. g.	F. M.	E. A.	B.												
47	Fulton	s.	r. ob.	y. r.	v. g.	F.	A.	Am.												
48	Golden Beurre of Billou	m.	p.	y.	v. g.	F.	E. A.													
49	Glout Moreau	l.	ob. p.	y.	g.	L. A.														

3 Like all pears, should be gathered ere fully ripe, or liable to decay at core.
 4 Not profitable for market.
 12 Quality inferior.

20 Trees very healthy.
 25 Liable to drop ere ripe.
 36 Delicious, but too small to meet the present market wants.

XIV. — PEARS.

The columns explain as follows: SIZE—s., small; l., large; m., medium. FORM—p., pyriform; r. o. p., roundish obtuse pyriform; r. a. p., roundish acute pyriform; ob. p., obtuse pyriform; ob. o. p., oblong obtuse pyriform; r., roundish; r. ob., roundish obtuse. COLOR—y. g., yellow or yellowish green with a red or russet red cheek; y. r., yellow and russet; y., when mostly yellow or yellowish. QUALITY—g., good; v. g., very good; b., best. USE—F., valuable family dessert; K. M., kitchen and market; F. M., family and market. SEASON—S., summer; L. S., late summer; A., autumn; E. A., early autumn; L. A., late autumn; W., winter. ORIGIN—En., English; Am., American; F., French; Fl., Flemish; B., Belgium; H., Holland.

Number.	II.—Central Division—Between 37° and 47°										III.—South. Div. b. 28° and 35°																														
	Minnesota and 49°	Dakota.	Montana.	Wyoming.	Idaho.	Washington.	Oregon.	Pennsylvania.	New Jersey.	Delaware.	Maryland & D. C.	Virginia.	North Carolina.	Ohio.	Indiana.	West Virginia.	Kentucky.	Tennessee.	Alabama.	Missouri.	Nebraska.	Kansas.	Colorado.	Utah.	Nevada.	California.	South Carolina.	Georgia.	Alabama.	Florida.	Ind. Territory.	Arkansas.	Mississippi.	Louisiana.	Texas.	New Mexico.	Arizona.				
1																																									
2								*																																	
3								*																																	
4								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
5								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
6								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
7								*																																	
8								*																																	
9								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
10								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
11								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
12								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
13								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
14								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
15								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
16								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
17								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
18								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22	*							*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
24								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
25								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
26								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
27								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
28								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
29								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
30								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
31								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
32								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
33								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
34								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
35								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
36								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
37								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
38								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
39								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
40								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
41								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
42								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
43								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
44								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
45								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
46	*							*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
47								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
48								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
49								*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

46 Begins to fall fast. 47 A hardy, productive tree. 49 Unreliable at the North.

NUMBER.	NAMES.	DESCRIPTION.						I. — Northern Division—Between 42°													
		SIZE.	FORM.	COLOR.	QUALITY.	USE.	SEASON.	ORIG.	Nova Scotia.	New Brunswick.	Maine.	New Hampshire.	Vermont.	Massachusetts.	Rhode Island.	Connecticut.	New York.	Ontario.	Michigan.	Wisconsin.	
50	Goodale	l.	ob. p.	y. g.	v. g.	F. M.	A.	Am.													
51	Gray Doyenne	m.	r.	y. r.	b.	F. M.	L. A.	F.													
52	Henkel	l.	r. ob. p.	y. r.	v. g.	F.	E. A.	B.													
53	Hosenschenck <i>Moore's Pomme.</i>	m.	r. ob.	y.	g.	M.	S.	Am.													
54	Howell	l.	r. p.	y. g.	v. g.	F. M.	E. A.	Am.	†												
55	Jalousie de Fontenay Vendee	m.	r. a. p.	y. r.	v. g.	F. M.	A.	F.													
56	Jaminiette	m.	r. ob.	y. r.	v. g.	F. M.	W.														
57	John Williams	m.		y.	v. g.		W.	Am.													
58	Josephine de Malines	m.	r. ob. p.	y. r.	v. g.	F. M.	W.	F.													
59	Julienne	s.	r. ob.	y. r.	v. g.	F. M.	S.														
60	King's-sing	l.	ob. p.	y.	v. g.	F. M.	E. A.	Am.													
61	Kirtland	m.	r. ob.	y. r.	v. g.	F. M.	E. A.	Am.													
62	Knight's <i>Knight's Seedling.</i>	m.	r. ob.	y. r.	g.	M.	A.	Am.													
63	Lawrence	m.	r. ob. p.	y. r.	v. g.	F. M.	W.	Am.													
64	Louise Bonne de Jersey	l.	ob. p.	y. g.	v. g.	F. M.	E. A.	F.													
65	Madeleine	m.	p.	y. g.	v. g.	F. M.	S.	F.													
66	Madame Eliza	l.	r. a. p.	y. r.	v. g.	F. M.	A.	B.													
67	Manning's Elizabeth	s.	ob. p.	y. r.	v. g.	F.	S.														
68	Marie Louise	l.	p.	y. r.	v. g.	F.	A.	B.													
69	McLaughlin	l.	ob. p.	y. g.	v. g.	F. M.	W.	Am.													
70	Merriam	m.	r. ob.	y. r.	v. g.	F. M.	A.	Am.													
71	Mount Vernon	m.	r. ob. p.	y. r.	v. g.	F. M.	L. A.	Am.													
72	Napoleon	l.	ob. p.	y.	v. g.	M.	A.	B.													
73	Nouveau Poiteau	l.	p.	y.	v. g.	M.	L. A.	B.													
74	Onondaga <i>Saran's Orange</i>	l.	ob. p.	y. g.	v. g.	F. M.	L. A.	Am.	*												
75	Osbard's Summer	s.	r. p.	y. g.	v. g.	F.	S.	Am.	†												
76	Ott	s.	r.	y. g.	v. g.	F.	S.	Am.													
77	Paradis d'Automne	l.	r. a. p.	y. r.	v. g.	F.	E. A.	B.													
78	Passe Colmar	l.	r. ob. p.	y.	v. g.	M.	W.	B.													
79	Pinneo or Boston	s.	r. ob.	y. g.	v. g.		S.	Am.													
80	Pound <i>Belle Angere, Winter Belle, Uredale's St. Germain.</i>	l.	p.	y.	g.	K. M.	W.														
81	Pratt	m.	ob. p.	y. r.	g.	M.	E. A.	Am.													
82	Reading	l.	ob. p.	y. r.	v. g.	F. M.	W.	Am.													
83	Rostiezer	s.	p.	y. g.	b.	F.	S.														
84	Rutter	m.	r. ob.	y. g.	v. g.	F. M.	A.	Am.													
85	St. Ghislain	m.	p.	y.	v. g.	F. M.	E. A.	B.													
86	St. Michael Archangel	l.	r. p.	y. g.	v. g.	F. M.	A.	F.													
87	Seckel	s.	r.	y. g.	v. g.	F. M.	A.	Am.													
88	Sheldon	m.	r.	y. g.	v. g.	F. M.	A.	Am.													
89	Souvenir du Congres	l.	p. y. r.	y. g.	v. g.	F. M.	S.	For.													
90	Sterling	m.	r.	y. g.	v. g.	F. M.	E. A.	Am.													
91	Steven's Genesee	l.	r.	y.	v. g.	F. M.	E. A.	Am.	†												
92	Supreme de Quimper	m.	r. p.	y. g.	v. g.	F.	S.	B.													
93	Triomphe de Jodoigne	l.	ob. p.	y. g.	v. g.	F. M.	A.	B.													
94	Tyson	m.	r. a. p.	y. g.	b.	F.	S.	Am.													
95	Upper Crust (local)	m.	r.	g. rus.	poor.		S.	Am.													
96	Urbaniste	m.	p.	y. g.	v. g.	F. M.	A.	B.													
97	Vicar of Winkfield <i>Le Carr.</i>	l.	p.	y.	g.	K. M.	W.	F.													
98	Washington	m.	ob. o. p.	y.	v. g.	F. M.	E. A.	Am.													
99	White Doyenne <i>Viregalica.</i>	m.	ob. p.	y. g.	b.	F. M.	A.	F.													
100	Wilbur	s.	r.	y. r.	g.		E. A.	Am.													
101	Willemoz	l.	ob. p.	y. r.	v. g.	M.	L. A.	B.													
102	Winter Jonah	l.		y.	v. g.	F. M.	W.	Am.													
103	Winter Nelis	m.	ob. p.	y. r.	b.	F. M.	W.	B.													
104	Windsor <i>Summer Bell.</i>	l.	p.	g.	g.	M.	S.														

51 Falls in Eastern States
52 Fine for the table.
53 A profitable market sort, in some localities.
56 An old variety; very healthy and productive.

58 The finest late winter melting pear, where it succeeds.
63 A hardy tree; valuable.
64 Very productive and profitable.
65 Some say liable to blight.

68 A capital pear, but unreliable.
69 Hardy and promising.
70 Valuable for market.
74 The more known the more esteemed.

XVI.—QUINCES.

The columns explain. SIZE—l., large; m., medium; v. l., very large. FORM—ob. p., oblate pyriform; r., roundish; r. ob. p., roundish obtuse pyriform. COLOR—y., yellowish or yellowish green. QUALITY—t., tender; h. t., half tender. USE—K., kitchen; M., market. SEASON—E., early; E. to L., early to late. ORIGIN—Am., American; F., Foreign.

Number.	NAMES.	DESCRIPTION.							I.—Northern Division—Between 42°												
		SIZE.	FORM.	COLOR.	QUALITY.	USE.	SEASON.	ORIGIN.	Nova Scotia.	New Brunswick.	Maine.	New Hampshire.	Vermont.	Massachusetts.	Rhode Island.	Connecticut.	New York.	Ontario.	Michigan.	Wisconsin.	
1	Angers	v. l.	ob. p.	y.	t.	M. K.	E to L.	F.													
2	Apple or Orange	l.	r.	y.	h. t.	M. K.	E to L.	F.													
3	Portugal	v. l.	ob. p.	y.	t.	M. K.	E.	F.													
4	Rea's Seedling	l.	r. ob. p.	y.	h. t.	M. K.	E.	Am.													

XVII.—RASPBERRIES.

The columns explain. SIZE—l., large; m., medium; s., small. FORM—r., roundish; r. c., roundish conical; c., conical; ob. c., obtuse conical. COLOR—b., black; r., reddish; p., purplish; y., yellow. QUALITY—g., good; v. g., very good; b., best. USE—M., most profitable for market; F. M., of value for family and market; F., mostly valued for the family dessert. SEASON—E., early; L., late; M., medium. ORIGIN—Am., American; F., foreign.

Number.	NAMES.	DESCRIPTION.							I.—Northern Division—Between 42°												
		SIZE.	FORM.	COLOR.	QUALITY.	USE.	SEASON.	ORIGIN.	Nova Scotia.	New Brunswick.	Maine.	New Hampshire.	Vermont.	Massachusetts.	Rhode Island.	Connecticut.	New York.	Ontario.	Michigan.	Wisconsin.	
1	American Black	s.	r.	b.	g.	M.	M.	Am.													
2	Belle de Palluan	l.	c.	r.	v. g.	F.	M.	F.			*		*		*		*		*		*
3	Belle de Fontenay	l.	c.	r.	g.	F.	L.	F.													
4	Catawissa	m.	r.	p.	g.	F.	L.	Am.			*										
5	Clarke	m.	r.	r.	g.	F. M.	E.	Am.													
6	Dayison's Thornless	m.	r.	b.	g.	F. M.	E.	Am.													
7	Eastoff	l.	r. c.	r.	v. g.	F.	M.	F.													
8	Franconia	l.	r. c.	p.	v. g.	F. M.	M.	F.													
9	French	m.	r.	r.	v. g.	F.	M.	Am.			*										
10	Golden Thornless	m.	r.	y.	g.	F.	M.	Am.													
11	Golden Cap	m.	r.	y.	g.	F.	M.	Am.													
12	Herstine	l.	ob. b.	r.	v. g.	F. M.	M.	Am.													
13	Hornet	l.	c.	r.	v. g.	F. M.	M.	F.													
14	Hudson River Antwerp	l.	c.	r.	h.	F. M.	M.	Am.													
15	Knevett's Giant	l.	ob. c.	r.	b.	F.	M.	F.													
16	Merveille de 4 Saisons. <i>October Red</i>	l.	r. c.	r.	v. g.	F.	L.	F.								*					
17	McCormick <i>Mananoll Cluster.</i>	m.	ob. c.	b.	v. g.	F. M.	L.	Am.			*		*		*	*	*	*	*	*	*
18	Miami	m.	r.	b.	g.	F. M.	M.	Am.													
19	Orange	l.	c.	y.	h.	F.	M.	Am.			*		*		*	*	*	*	*	*	*
20	Ohio Everbearing	m.	c.	b.	g.	F. M.	L.	Am.													
21	Philadelphia	m.	r.	p.	g.	M.	M.	Am.			*		*		*	*	*	*	*	*	*
22	Purple Cane	m.	r.	p.	g.	M.	M.	Am.									*				

3 Best of autumnal bearing sorts.
4 Deep, rich soil, or not profitable

16 Not profitable.
17 Profitable market sort

XVI.—QUINCES.

The columns explain: SIZE—l, large; m., medium; v. l., very large. FORM—ob. p., oblate pyriform; r., roundish; r. ob. p., roundish obtuse pyriform. COLOR—y., yellowish or yellowish green. QUALITY—t., tender; h. t., half tender. USE—K., kitchen; M., market. SEASON—E., early; E. to L., early to late. ORIGIN—Am., American; F., foreign.

NUMBER.	II. Central Division—Between 37° and 42°											III. South. Div.—b. 28° & 35°																												
	Minnesota.	Dakota.	Montana.	Wyoming.	Idaho.	Washington.	Oregon.	Pennsylvania.	New Jersey.	Delaware.	Maryland & D. C.	Virginia.	North Carolina.	Ohio.	Indiana.	West Virginia.	Kentucky.	Tennessee.	Illinois.	Iowa.	Missouri.	Nebraska.	Kansas.	Colorado.	Utah.	Nevada.	California.	South Carolina.	Georgia.	Alabama.	Florida.	Indian Territory.	Arkansas.	Mississippi.	Louisiana.	Texas.	New Mexico.	Arizona.		
1								*	*				*				*																							
2								*	*				*				*																							
3								*	*				*				*																							
4								*	*				*				*																							

XVII.—RASPBERRIES.

The columns explain: SIZE—l, large; m., medium; s., small. FORM—r., roundish; r. c., roundish conical; c., conical; ob. c., obtuse conical. COLOR—b., black; r., reddish; p., purplish; y., yellow. QUALITY—g., good; v. g., very good; h., best. USE—M., most profitable for market; F. M., of value for family and market; F., mostly valued for the family dessert. SEASON—E., early; L., late; M., medium. ORIGIN—Am., American; F., foreign.

NUMBER.	II. Central Division—between 36° and 42°											III. South. Div.—b. 28° & 35°																											
	Minnesota.	Dakota.	Montana.	Wyoming.	Idaho.	Washington.	Oregon.	Pennsylvania.	New Jersey.	Delaware.	Maryland & D. C.	Virginia.	North Carolina.	Ohio.	Indiana.	West Virginia.	Kentucky.	Tennessee.	Illinois.	Iowa.	Missouri.	Nebraska.	Kansas.	Colorado.	Utah.	Nevada.	California.	South Carolina.	Georgia.	Alabama.	Florida.	Indian Territory.	Arkansas.	Mississippi.	Louisiana.	Texas.	New Mexico.	Arizona.	
1								*	*				*				*																						
2								*	*				*				*																						
3								*	*				*				*																						
4								*	*				*				*																						
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8								*	*				*				*																						
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12								*	*				*				*																						
13								*	*				*				*																						
14								*	*				*				*																						
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16								*	*				*				*																						
17								*	*				*				*																						
18								*	*				*				*																						
19								*	*				*				*																						
20								*	*				*				*																						
21								*	*				*				*																						
22								*	*				*				*																						

19 Valued for family use
20 Not profitable
21 Very productive.

22 An old variety, by many thought to be superseded

XVIII.—STRAWBERRIES.

The columns explain: SIZE—l., large; s., small; m., medium. SEX—H., hermaphrodite; P., pistillate. COLOR—d. c., deep crimson; d. s., deep scarlet; b. s., bright scarlet; w. t., whitish tinted with red; l. c., light crimson. FORM—r. c., roundish conical; o. c., obtuse conical or coxcomb form; c., conical; r., roundish; r. o. c., roundish obtuse conical. FLESH—s., soft; f., firm. SEASON—E., early; M., medium; L., late; E. L., early to late. ORIGIN—Am., American; F., foreign.

NUMBER.	NAMES.	DESCRIPTION.							I.—Northern Division—Between 42°											
		SIZE.	SEX.	COLOR.	FORM.	FLESH.	SEASON.	ORIGIN.	Nova Scotia.	New Brunswick.	Maine.	New Hampshire.	Vermont.	Massachusetts.	Rhode Island.	Connecticut.	New York.	Ontario.	Michigan.	Wisconsin.
1	Agriculturist	l.	P.	d. c.	r. c.	f.	M.	Am.												
2	America	l.		d. c.	r. c.	f.	E.	Am.												
3	Boston Pine	l.	H.	d. c.	r. c.	f.	M.	Am.												
4	Black Defiance	l.	H.	d. r.	r. o. c.	f.	M.	Am.												
5	Charles Downing	l.	H.	d. s.	c.	f.	M.	Am.			*									
6	Col. Cheney	l.	P.	r. ov.	b. s.	f.		Am.												
7	Col. Ellsworth	m.	P.	d. s.	r. c.	f.	M.	Am.												
8	Downer's Prolific	m.	H.	b. s.	r. c.	s.	E.	Am.												
9	Early Washington	m.					V. E.	Am.							*	*	*	*	*	*
10	Fillmore	m.	P.	d. s.	o. c.	f.	M.	Am.												
11	French's Seedling	m.	H.	b. s.	r. c.	s.	M.	Am.							*					
12	Green Prolific	l.	P.	l. c.	r. o. c.	s.	M. L.	Am.												
13	Hovey's Seedling	l.	P.	b. s.	r.	f.	M.	Am.												
14	Ida	m.	H.	d. s.	r. c.	f.	E. L.	Am.				*	*	*	*	*	*	*	*	*
15	Jenny Lind	m.	H.	d. c.	c.	f.	E.	Am.				*	*	*	*	*	*	*	*	*
16	Jucunda	l.	H.	b. s.	o. c.	f.	L.	Am.												*
17	Kentucky	l.	H.	b. s.	r. c.	f.	L.	Am.												*
18	Large Early Scarlet	s.	H.	l. s.	r. c.	s.	E.	Am.		*	*	*	*	*	*	*	*	*	*	*
19	Lennig's White	l.	H.	w. t.	r. o. c.	s.	M.	Am.												*
20	Longworth's Prolific	l.	H.	l. c.	r.	f.	L. M.	Am.			*	*	*	*	*	*	*	*	*	*
21	Mary Stewart									*	*	*	*	*	*	*	*	*	*	*
22	Monarch of the West	v. l.		b. r.		f.		Am.							*					
23	Napoleon III	l.	H.	b. s.	c.	f.	L.	Am.												
24	Nicator	m.	H.	b. s.	r. o. c.	f.	E. L.	Am.												*
25	Peabody	l.	H.	r.	g.	f.	M.	Am.												*
26	President Wilder	l.	H.	b. s.	r. o. c.	f.	M.	Am.												*
27	Russell's Prolific	l.	P.	r.	g.	s.	M.	Am.			*	*	*	*	*	*	*	*	*	*
28	Seth Boyden	l.	H.	r.	o. c.	f.	M.	Am.												*
29	Triomphe de Gand	l.	H.	l. c.	o. c.	f.	M.	F.			*	*	*	*	*	*	*	*	*	*
30	Victoria	l.	H.	l. c.	r. c.	f.	M.	F.		*	*	*	*	*	*	*	*	*	*	*
31	Wilson's Albany	l.	H.	d. c.	r. c.	f.	E. L.	Am.		*	*	*	*	*	*	*	*	*	*	*

13 An old highly valued sort
14 Very productive

19 Only valued for the amateur
24 One of the best early sorts, and fine for canning.

30 Esteemed as a family sort.
31 Poor quality; hardy and productive.

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