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AMERICAN POMOLOGICAL SOCIETY.

PROCEEDINGS

OF THE

SIXTEENTH SESSION

OF THE

American Pomological Society

HELD IN

BALTIMORE, MARYLAND.

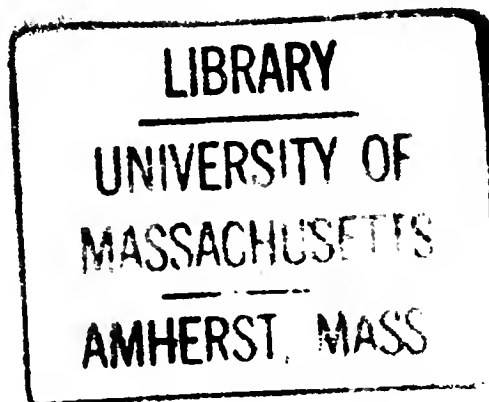
September 12th, 13th and 14th, 1877.

EDITED BY THE SECRETARY.

PUBLISHED BY THE SOCIETY,
1877.

65

"These trees are suggestive of the farm and its pleasant appurtenances, rather than rude nature; but so closely allied is Nature to the farm, when under the care of a simple tiller of the soil and unbedizened by taste, that its accompaniments seem a rightful part of her domain. The simplicity of the rustic farm is in consonance with the fresh glowing charms of Nature herself. A row of apple trees overshadowing the wayside forms an abode in which the rural deities might revel as in their own sylvan retreats; and Nature wears a more charming appearance when, to her own rude costume, she adds a wreath trimmed by the rosy fingers of Pomona."—WILSON FLAGG, on "Orchard Trees."



CIRCULAR.

AMERICAN POMOLOGICAL SOCIETY.

ORGANIZED 1848.

...

SIXTEENTH SESSION.

...

THE American Pomological Society having accepted the invitation of the Maryland Horticultural Society, the undersigned give notice that the Sixteenth Session of this National Association will be held in Baltimore, commencing *Wednesday, September Twelfth, 1877*, 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.

It is confidently anticipated 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 inquiry; and it is desirable that these inquiries should be answered at an early day. The various State and Local Committees are urged to respond to the circulars as soon as practicable.

The coming session will derive a special interest from its location in the midst of the great fruit-growing region of the Atlantic coast, and also from the fact that it is the first meeting held since the expiration of the first century of our national history. It is desired, in this connection, that the Vice-Presidents of the several States, Territories, and Provinces, should furnish or procure, as far as possible, short historical sketches of the rise and progress of fruit-culture in their respective districts, from their settlement up to the year 1876, to the end that the forthcoming report may give a complete view of the pomological history of the various parts of the country. State and local Horticultural Societies are respectfully requested to co-operate and aid in this work.

Arrangements will be made with hotels, and, as far as possible, with the various railroad lines terminating in Baltimore, 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 Baltimore 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 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, from Sept. 11 to 14 inclusive, the Maryland Horticultural Society will hold a Grand Exhibition of Fruits, 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 the contributors, may be addressed as follows: "AMERICAN POMOLOGICAL SOCIETY, care of WILLIAM B. SANDS, Baltimore."

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; Appointment of Place for the next Meeting of the Society.

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. 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 and Centennial Sketches by Vice-Presidents and others; 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 accepted by the following named gentlemen to prepare papers:—

Prof. W. J. BEAL of the Agricultural College, Lansing, Mich., will prepare a paper on "The Classification of Apples."

Prof. A. N. PRENTISS of Cornell University, Ithaca, N. Y., will prepare a paper on "The Pathology of Cultivated Plants."

It is expected that other gentlemen of experience and skill will present papers on Practical or Historical subjects connected with Fruit-Culture, such as "The Species of the Apple," "The Bitter Rot of the Apple," etc.

OFFICERS

OF THE

AMERICAN POMOLOGICAL SOCIETY.

1877-9.

—♦♦♦—

President.

HON. MARSHALL PINCKNEY WILDER, BOSTON, *Massachusetts*.

Vice-Presidents.

<i>Alabama</i>	C. C. LANGDON,	Mobile.	<i>Montana</i>	JOHN JONES	Helena.
<i>Arizona</i>	A. P. R. SPAFFORD	Tucson.	<i>Nebraska</i>	R. W. FURNAS	Brownville.
<i>Arkansas</i>	C. C. BLISS	Little Rock.	<i>Nevada</i>	L. R. BRADLEY	Carson City.
<i>California</i>	B. S. FOX	San José.	<i>New Brunswick</i>	JUDGE WILMOT	Fredericton.
<i>Colorado</i>	N. C. MEEKER	Greeley.	<i>New Hampshire</i>	WATERMAN SMITH	Manchester.
<i>Connecticut</i>	F. TROWBRIDGE	New Haven.	<i>New Jersey</i>	WILLIAM PARRY	Cinnaminson.
<i>Dakota</i>	L. D. F. POORE	Springfield.	<i>New Mexico</i>	W. F. M. ARNY	Santa Fé.
<i>Delaware</i>	EDWARD TATNALL	Wilmington.	<i>New York</i>	CHARLES DOWNING	Newburg.
<i>District Columbia</i>	WILLIAM SAUNDERS	Washington.	<i>North Carolina</i>	WALTER L. STEELE	Rockingham.
<i>Florida</i>	H. L. HART	Palatka.	<i>New Scotland</i>	C. C. HAMILTON	Cornwallis.
<i>Georgia</i>	J. M. STUBBS	Savannah.	<i>Ohio</i>	JOHN A. WARDER	Cleves.
<i>Idaho</i>	WILLIAM H. DRAKE	Boise City.	<i>Ontario</i>	ROBERT BURNET	Hamilton.
<i>Illinois</i>	ARTHUR BRYANT, SR.	Princeton.	<i>Oregon</i>	A. J. DUFER	Portland.
<i>Indiana</i>	S. P. JOHNSON	Irvington.	<i>Pennsylvania</i>	ROBERT BUIST, SR.	Philadelphia.
<i>Indian Territory</i>	JOHN A. FOREMAN	Muscoga.	<i>Quebec</i>	JUDGE DUNKIN	Knowlton.
<i>Iowa</i>	JAMES SMITH	Des Moines.	<i>Rhode Island</i>	SILAS MOORE	Providence.
<i>Kansas</i>	J. S. STAYMAN	Leavenworth.	<i>South Carolina</i>	A. P. WYLIE	Chester.
<i>Kentucky</i>	THOS. S. KENNEDY	Louisville.	<i>Tennessee</i>	B. F. TRANSOR	Humboldt.
<i>Louisiana</i>	R. H. DAY	Baton Rouge.	<i>Texas</i>	WM. WATSON	Brenham.
<i>Maine</i>	Z. A. GILBERT	East Turner.	<i>Utah</i>	J. E. JOHNSON	St. George.
<i>Maryland</i>	W. D. BRACKENRIDGE	Govinstown.	<i>Vermont</i>	LAWRENCE BRAINERD	St. Albans.
<i>Massachusetts</i>	C. M. HOVEY	Cambridge.	<i>Virginia</i>	G. F. B. LEIGHTON	Norfolk.
<i>Michigan</i>	T. T. LYON	South Haven.	<i>Washington</i>	WASHINGTON BLUM	Seabeck.
<i>Minnesota</i>	J. S. HARRIS	La Cresecent.	<i>West Virginia</i>	D. H. STROTHER	Berkeley Spas.
<i>Mississippi</i>	GEO. S. GAINES	State Line.	<i>Wisconsin</i>	GEORGE P. PEPPER	Pewaukee.
<i>Missouri</i>	GEO. HUSMANN	Sedalia.	<i>Wyoming</i>	JUDGE CARTER	Carter's Station.

Treasurer.

THOMAS P. JAMES,

Cambridge, Mass.

Secretary.

W. C. FLAGG,

Moro, Ill.

Executive Committee.

PRESIDENT and VICE-PRESIDENTS, <i>ex-officio</i> .		J. F. C. HYDE,	Newton	<i>Massachusetts</i> .
J. E. MITCHELL	Philadelphia	P. J. BERCKMANS	Augusta	<i>Georgia</i> .
GEORGE THURBER	New York	J. H. MASTERS	Nebraska City	<i>Nebraska</i> .

General Fruit Committee.

Chairman . . . P. BARRY, . . . ROCHESTER, N. Y.

<i>Alabama</i>	R. R. HUNLEY	Talladega.	<i>Montana</i>	J. D. MCCAMMAN	Bozeman.
<i>Arizona</i>	WARREN FOOTE	St. Thomas.	<i>Nebraska</i>	J. H. MASTERS	Nebraska City.
<i>Arkansas</i>	S. J. MATTHEWS	Monticello.	<i>Nevada</i>	A. J. HATCH	Reno.
<i>California</i>	DR. F. STRENTZEL	Martinez.	<i>New Brunswick</i>	J. L. INCHES	Fredericton.
<i>Colorado</i>	H. B. BEARCE	Denver.	<i>New Hampshire</i>	JAMES M. HAYES	Dover.
<i>Connecticut</i>	T. S. GOLD	West Cornwall.	<i>New Jersey</i>	A. S. FULLER	Ridgewood.
<i>Dakota</i>	LOTT I. BAYLEF	Yankton.	<i>New Mexico</i>	THOMAS J. BUEL	Mesilla.
<i>Delaware</i>	EDWARD TATNALL	Wilmington.	<i>New York</i>	E. MOODY	Lockport.
<i>District Columbia</i>	JOHN SAUL	Washington.	<i>North Carolina</i>	EDWARD KIDDER	Wilmington.
<i>Florida</i>	P. P. BISHOP	San Mateo.	<i>North Scotia</i>	CHARLES E. BROWN	Yarmouth.
<i>Georgia</i>	P. J. BERCKMANS	Augusta.	<i>Ohio</i>	M. B. BATEHAM	Painesville.
<i>Idaho</i>	T. W. BENNETT	Boise City.	<i>Ontario</i>	D. W. BEADLE	St. Catharines.
<i>Illinois</i>	O. B. GALUSHA	Morris.	<i>Oregon</i>	ANDREW J. DUFUR	Portland.
<i>Indiana</i>	ALEN FURNAS	Danville.	<i>Pennsylvania</i>	H. M. ENGLE	Marietta.
<i>Indian Territory</i>	WILLIAM P. ROSS	Muskogee.	<i>Quebec</i>	HENRY S. EVANS	Montreal.
<i>Iowa</i>	G. B. BRACKETT	Denmark.	<i>Rhode Island</i>	JOSEPH H. BOURNE	Providence.
<i>Kansas</i>	WILLIAM M. HOWSLEY	Leavenworth.	<i>South Carolina</i>	D. H. JACQUES	Charleston.
<i>Kentucky</i>	W. A. HUGGINS	Glasgow.	<i>Tennessee</i>	J. W. ROSEMOUNT	Gadsden.
<i>Louisiana</i>	DR. H. A. SWASEY	New Orleans.	<i>Texas</i>	WILLIAM WATSON	Brenham.
<i>Maine</i>	HENRY McLAUGHLIN	Bangor.	<i>Utah</i>	J. E. JOHNSON	St. George.
<i>Maryland</i>	W. D. BRACKENRIDGE	Govaustown.	<i>Vermont</i>	H. G. ROOT	Bennington.
<i>Massachusetts</i>	ROBERT MANNING	Salem.	<i>Virginia</i>	FRANKLIN DAVIS	Richmond.
<i>Michigan</i>	H. DALE ADAMS	Galesburg.	<i>Washington</i>	C. W. LAWTON	Seattle.
<i>Minnesota</i>	WYMAN ELLIOT	Minneapolis.	<i>West Virginia</i>	D. H. STROTHER	Berkeley Springs.
<i>Mississippi</i>	W. H. CASSELL	Canton.	<i>Wisconsin</i>	J. C. PLUMB	Milton.
<i>Missouri</i>	WILLIAM MITR	Fox Creek.	<i>Wyoming</i>	J. A. CAMPBELL	Cheyenne.

Committee on Native Fruits.

P. J. BERCKMANS	Augusta, Ga.	Southern Division.	FRANKLIN DAVIS	Richmond, Va.	Eastern Middle Div.
P. T. QUINN	Newark, N. J.	Northern "	WM. WATSON	Brenham, Tex.	South-western "
CHAS. DOWNING	Newbury, N. Y.	" "	T. T. LYON	South Haven, Mich.	North-western "
R. MANNING	Salem, Mass.	Eastern "	EDMOND H. HART	Federal Point, Fla.	Sub-tropical "
J. H. MASTERS	Nebraska City, Neb.	Western "	DR. F. STRENTZEL	Martinez, Cal.	Pacific "
B. F. TRANSOC	Humboldt, Tenn.	Western Middle Div.			

Committee on Foreign Fruits.

GEORGE ELLWANGER	Rochester, N. Y.	G. F. B. LEIGHTON	Norfolk, Va.
C. M. HOVEY	Boston, Mass.	EDWIN SATTERTHWAITE	Philadelphia, Penn.
PARKER EARLE	South Pass, Ill.	C. C. HAMILTON	Covarrallis, N. S.
JOHN A. WARDER	Chico, O.		

Committee on Synonyms and Rejected Fruits.

JOHN J. THOMAS	Union Springs, N. Y.	WILLIAM SAUNDERS	Washington, D. C.
JOHN A. WARDER	Chico, O.	W. C. BARRY	Rochester, N. Y.
TYLER McWHORTER	Helo, Ill.	W. M. HOWSLEY	Leavenworth, Kas.
ROBERT MANNING	Salem, Mass.		

Committee on Revision of Catalogue.

PRESIDENT, <i>ex officio</i> .		W. C. FLAGG	Moro, Ill.
P. BARRY	Rochester, N. Y.	ROBERT MANNING	Salem, Mass.
JOSIAH HOOPES	West Chester, Penn.	P. J. BERCKMANS	Augusta, Ga.
CHARLES DOWNING	Newbury, N. Y.	H. A. SWASEY	New Orleans, La.

1

CONSTITUTION AND BY-LAWS

OF THE

AMERICAN POMOLOGICAL SOCIETY,

As Amended September 12, 1877,

AT BALTIMORE.

CONSTITUTION.

ARTICLE 1. The name of this Association shall be the AMERICAN POMOLOGICAL SOCIETY.

2. Its object shall be the advancement of the science of Pomology.

3. It shall consist of Delegates appointed by Horticultural, Agricultural, and kindred Societies in the United States and British America, and of such other persons as take an interest in the welfare of the Association, and are desirous of promoting its aims.

4. The meetings shall be held biennially, at such time and place as may be designated by the Society; and special meetings may be convened at any time on the call of the President.

5. The officers shall consist of a President, one Vice-President from every State, Territory and Province, a Treasurer and a Secretary; and shall be elected by ballot or otherwise at every biennial meeting.

BY-LAWS.

1. The President shall have a general superintendence of the affairs of the Society during its vacation; give due public notice of the time and place of meeting; preside at its deliberations; deliver an Address on some subject relating to Pomology, at every biennial meeting; and appoint all Committees, unless otherwise directed.

2. In case of the death, sickness or inability of the President, his official duties shall devolve on such one of the Vice-Presidents as the Society may elect by ballot or otherwise.

3. The Treasurer shall receive all moneys belonging to the Society, and pay over the same on the written orders of the President.

4. The Secretary shall, with the assistance of a reporter appointed by him, keep a record of the transactions of the Society for publication.

5. There shall be an Executive Committee consisting of five members, together with the President and Vice-Presidents, *ex-officio*, five of whom shall

constitute a quorum, who shall manage the affairs of the Society during its vacation.

6. Chairmen of Fruit Committees, for every State, Territory and Province, and a general Chairman over all, shall be appointed biennially. It shall be the duty of each of such Chairmen to appoint four additional members of his committee, and with their aid, and with such other information as he can procure, to forward to the general Chairman one month before every biennial meeting, State Pomological Reports, to be condensed by him for publication.

7. A standing Committee on Native Fruits, consisting of eleven members, shall be appointed by the President immediately after his election. It shall be the duty of this Committee to report annually on native fruits, and also to examine, and before the close of session, report on all new seedling varieties that may be exhibited; and to make an *ad interim* report on those that were exhibited in an unripe condition at the meeting of the Society, but had subsequently attained a state of maturity; and on such other seedlings as may have been submitted to their inspection during the Society's vacation.

8. A standing Committee on Foreign Fruits, consisting of seven members, shall be appointed, whose duties shall be similar to those of the committee in by-law seven.

9. A standing Committee on Synonyms, consisting of seven members, shall be appointed biennially.

10. Vacancies occurring in committees shall be filled by the chairman of each, and in case of his death or inability to serve, his place shall be supplied by the President of the Society.

11. The members of this Society shall pay four dollars biennially; and twenty dollars paid at one time shall constitute one life membership.

12. The order of business for each meeting shall be arranged by the Executive Committee.

13. The Constitution and By-Laws may be altered or amended, at any regular biennial meeting, by a vote of two-thirds of the members present.

LIST OF MEMBERS.

The following List comprises the names of the Members of the American Pomological Society.

Life.

EDWIN ALLEN	New Bruswick	New Jersey.	ALEXANDER DICKINSON	Cambridgep't	Massachusetts.
FRANK W. ANDREW	Boston	Massachusetts.	ROBERT DOUGLASS	Waukegan	Illinois.
E. F. BABCOCK	Little Rock	Arkansas.	CHARLES DOWNING	Newburg	New York.
CHAS. R. BAKER	Dorchester	Massachusetts.	W. S. DUNHAM	New York	New York.
WILLIAM E. BAKER	Wellesley	Massachusetts.	GEO. B. DURFEE	Fall River	Massachusetts.
GEORGE BANCROFT	New York	New York.	PARKER EARLE	Cobden	Illinois.
PATRICK BARRY	Rochester	New York.	GEO. ELLWANGER	Rochester	New York.
WILLIAM C. BARRY	Rochester	New York.	CHARLES ELY	West Springfield	Missouri.
D. W. BEADLE	St. Catherines	Ontario.	HENRY M. ENGLE	Marietta	Pennsylvania.
W. J. BEAL	Lansing	Michigan.	HIRAM ENGLE	Marietta	Pennsylvania.
PROSPER J. BERCKMANS	Augusta	Georgia.	AARON ERICKSON	Rochester	New York.
KADER BIGGS	Norfolk	Virginia.	JOHN K. ESHLEMAN, M. D.	Downingtwn	Pennsylvania.
WM. S. BISSELL	Pittsburg	Pennsylvania.	ARTHUR W. FELTON	West Newton	Massachusetts.
B. K. BLISS	New York	New York.	E. T. FIELD	Red Bank	New Jersey.
JOS. H. BOURNE	Providence	Rhode Island.	JOHN FISHER	Batavia	New York.
E. F. BOWDITCH	Boston	Massachusetts.	W. C. FLAGG	Moro	Illinois.
J. BRAINERD	Washington	Dist. Columbia.	DAVID B. FLINT	Mount Auburn	Massachusetts.
HENRY A. BREED	Lynn	Massachusetts.	T. S. FORCE	Newburg	New York.
JOHN R. BREWER	Boston	Massachusetts.	C. GILBERT FOWLER	Newburg	New York.
ALFRED BRIDGEMAN	New York	New York.	BERNARD S. FOX	San Jose	California.
FRANCIS BRILL	Newark	New Jersey.	JACOB FRANTZ	Lemon Place	Pennsylvania.
CHAS. E. BROWN	Yarmouth	Nova Scotia.	JOHNATHAN FRENCH	Boston	Massachusetts.
ISAAC BUCHANAN	New York	New York.	ISAAC H. FROTHINGHAM	Boston	Massachusetts.
S. S. BUCKLIN	Boston	Massachusetts.	ANDREW S. FULLER	Ridgewood	New Jersey.
ROBERT BUIST	Philadelphia	Pennsylvania.	R. W. FURNAS	Brownville	Nebraska.
RAPHAEL BUSH	Bushberg	Missouri.	E. B. GARDETTE, M. D.	Philadelphia	Pennsylvania.
E. W. BUSWELL	Boston	Massachusetts.	HENRY J. GARDNER	Boston	Massachusetts.
CHARLES BUTLER	New York	New York.	CHARLES GIBB	Abbotsford	Quebec.
JAMES CALDER, D. D.	Agric'l College	Pennsylvania.	T. S. GOLD	West Cornwall	Connecticut.
JOHN S. CALKINS	Bricksburg	New Jersey.	S. S. GRAVES	Geneva	New York.
GEO. W. CAMPBELL	Delaware	Ohio.	WILLIAM GRIFFITH	North East	Pennsylvania.
OTIS CARY	Foxborough	Massachusetts.	SAMUEL H. GRUBB	Roxborough	Pennsylvania.
CHARLES CARPENTER	Kelly's Island	Ohio.	T. W. GUY	Sulphur Springs	Missouri.
GEO. D. CHAMBERLAIN	Cambridge	Massachusetts.	WILLIAM HACKER	Philadelphia	Pennsylvania.
BENJ. P. CHENEY	Boston	Massachusetts.	O. B. HADWEN	Worcester	Massachusetts.
F. AUGUSTUS CLAPP	Boston	Massachusetts.	JOHN S. HAINES	Germantown	Pennsylvania.
LEMUEL CLAPP	Boston	Massachusetts.	HENRY C. HAINES	Germantown	Pennsylvania.
WM. CHANNING CLAPP	Boston	Massachusetts.	BENJ. B. HANCOCK	Red Bank	New Jersey.
EDMUND S. CLARK	Framingham	Massachusetts.	EDWARD HARRIES	Buffalo	New York.
EDSON H. CLARK	Newburg	New York.	THOMAS M. HARVEY	West Grove	Pennsylvania.
ELIZUR E. CLARK	New Haven	Connecticut.	GEO. HASKELL	Ipswich	Massachusetts.
JAMES W. CLARK	Framingham	Massachusetts.	J. W. HELMER	Lockport	New York.
ASA CLEMENT	Draeut	Massachusetts.	WM. HERDMAN	Eaton	Ohio.
GEO. S. CONOVER	Geneva	New York.	DR. F. M. HEXAMER	New Castle	New York.
N. J. COLEMAN	St. Louis	Missouri.	GEO. HOADLEY	Cincinnati	Ohio.
M. S. COOK	Avondale	Pennsylvania.	C. L. HOAG	Lockport	New York.
ROBERT CORNELIUS	Philadelphia	Pennsylvania.	THOMAS HOGG	New York	New York.
A. COX	Walnut City	Kansas.	E. S. HOLMES	Grand Rapids	Michigan.
JNO. A. J. CRESSWELL	Elkton	Maryland.	WARREN HOLTON	Hamilton	Ontario.
JAMES CRICKSHANKS	Chelsea	Massachusetts.	C. M. HOVEY	Cambridge	Massachusetts.
A. P. CUMMINGS	New York	New York.	JOHN C. HOVEY	Cambridge	Massachusetts.
FRANKLIN DAVIS	Richmond	Virginia.	JOHN J. HOWE	Birmingham	Connecticut.
HERVEY DAVIS	Cambridge	Massachusetts.	T. S. HUBBARD	Fredonia	New York.
J. C. BANCROFT DAVIS	New Hamburg	New York.	H. H. HUNSEWELL	Wellesley	Massachusetts.
ARTHUR F. DEXTER	Providence	Rhode Island.	JOHN M. HUNTER	Ashley	Illinois.

J. F. C. HYDE	Newton	Massachusetts.	WILLIAM SAUNDERS	Washington, Dist. Columbia.
TINSLEY JETER	Bethlehem	Pennsylvania.	GEO. B. SAWYER	Wiscasset, Maine.
JAMES JONES	Leiperville	Pennsylvania.	W. SCARBOROUGH	Cincinnati, Ohio.
EDWARD KENDALL	Cambridge	Massachusetts.	WILLIAM SCHLEY	New York, New York.
GEO. F. KENDALL	Cambridge	Massachusetts.	DAVID A. SCOTT	Newburg, New York.
JOSEPH H. KENT	Russellville	Pennsylvania.	EDWARD C. SELOVER	Auburn, New York.
SAMUEL C. KENT	Richmond	Virginia.	C. C. SHAW	Milford, New Hampshire.
JOHN A. KING	Great Neck, L. I.	New York.	J. R. SHOTWELL	Railway, New Jersey.
JOHN H. KING	Washington	Dist. Columbia.	C. SOUTHWORTH	Stoughton, Massachusetts.
R. B. KOEN	Memphis	Tennessee.	B. SMITH	Cuba, Missouri.
HARTMAN KUHN	Philadelphia	Pennsylvania.	BENJ. G. SMITH	Cambridge, Massachusetts.
A. D. LAING	Stratford	Connecticut.	W. SMITH	Geneva, New York.
C. C. LANGDON	Mobile	Alabama.	WM. BROWN SMITH	Syracuse, New York.
WILLIAM LAWTON	New Rochelle	New York.	WM. ELIOT SMITH	Alton, Illinois.
A. M. LAWVER	Galena	Illinois.	WING R. SMITH	Syracuse, New York.
G. F. B. LEIGHTON	Norfolk	Virginia.	GEO. SPARHAWK	Lexington, Massachusetts.
HENRY LITTLE	Boston	Massachusetts.	ROBERT W. STARR	Cornwallis, Nova Scotia.
ELIJAH H. LUKE	Cambridgept	Massachusetts.	BRYCE STEWART	Clarksville, Tennessee.
JAMES M. LYONS	New Bedford	Massachusetts.	HENRY L. STEWART	Middle Haddam, Connecticut.
T. T. LYON	South Haven	Michigan.	C. W. SPAULDING, M. D.	St. Louis, Missouri.
DAVID McFERRON	Alleghany City	Pennsylvania.	J. L. STEPHENS	Booneville, Missouri.
WILLIAM R. MANN	Sharon	Massachusetts.	W. C. STRONG	Brighton, Massachusetts.
ROBERT MANNING	Salem	Massachusetts.	J. M. STONE	Calhoun Station, Mississippi.
JAMES H. MASTERS	Nebraska City	Nebraska.	HOWARD SWINEFORD	Richmond, Virginia.
J. M. McCULLOCH	Cincinnati	Ohio.	EDWARD P. TAFT	Providence, Rhode Island.
HENRY McLAUGHLIN	Bangor	Maine.	THOMAS TALBOT	Billerica, Massachusetts.
THOMAS MEEHAN	Germantown	Pennsylvania.	EDWARD TATNALL	Wilmington, Delaware.
F. R. MILLER	Sugar Grove	Pennsylvania.	JOHN N. TAYLOR	Brooklyn, New York.
W. H. MILLS	Hamilton	Ontario.	DR. THOMAS TAYLOR	Washington, Dist. Columbia.
J. E. MITCHELL	Philadelphia	Pennsylvania.	JOSEPH O. TAYLOR	Newport, Kentucky.
SILAS MOORE	Providence	Rhode Island.	JOHN T. TEMPLE	Davenport, Iowa.
HENRY T. MIDD	St. Louis	Missouri.	J. J. THOMAS	Union Springs, New York.
D. O. MUNSON	Fall's Church	Virginia.	MILTON THOMAS	Los Angeles, California.
DAVID S. MYER	Bridgeville	Delaware.	GEO. THURBER	New York, New York.
I. D. G. NELSON	Fort Wayne	Indiana.	B. C. TOWNSEND	New York, New York.
J. S. NEWMAN	Sparta	Georgia.	F. TROWBRIDGE	Milford, Connecticut.
SAMUEL W. NOBLE	Jenkintown	Pennsylvania.	CARLTON A. UBER	Christiansburgh, Virginia.
J. G. ORTON, M. D.	Binghamton	New York.	GEO. R. UNDERHILL	Loanst Valley, New York.
CHARLES OSBORNE	N. Vassalboro	Maine.	JACOB VAN GELDER	Saugerties, New York.
WILLIAM PARRY	Cinnaminson	New Jersey.	J. A. WARDER, M. D.	Cleves, Ohio.
R. B. PARSONS	Flushing, L. I.	New York.	W. H. WARDWELL	Boston, Massachusetts.
WILLIAM PARSONS	Newton	Massachusetts.	WILLIAM WATSON	Brenham, Texas.
JAMES M. PAUL	North Adams	Massachusetts.	D. B. WIER	Lacon, Illinois.
SAMUEL R. PAYSON	Boston	Massachusetts.	AARON D. WELD	Boston, Massachusetts.
EDWARD D. PEARCE	Providence	Rhode Island.	JESSE M. WELLBORN	Covycets, Georgia.
JOHN M. PEARSON	Godfrey	Illinois.	LEANDER WETHERELL	Boston, Massachusetts.
SAMUEL F. PERLEY	Naples	Maine.	JOSEPH V. WHELAN	Montgomery, New York.
JONATHAN PERIAM	Chicago	Illinois.	JOHN B. WHITEHEAD	Norfolk, Virginia.
WILLIAM H. PEROT	Baltimore	Maryland.	CHARLES O. WHITMORE	Boston, Massachusetts.
R. PETERS	Atlanta	Georgia.	JOHN WIELAND	Farmersville, Ohio.
F. K. PHOENIX	Bloomington	Illinois.	EDWARD B. WILDER	Dorchester, Massachusetts.
HENRY L. PIERCE	Boston	Massachusetts.	MARSHALL P. WILDER	Dorchester, Massachusetts.
WILLIAM A. PILE	St. Louis	Missouri.	MARSHALL P. WILDER, Jr.	Dorchester, Massachusetts.
J. PICKERING PUTNAM	Boston	Massachusetts.	HENRY T. WILLIAMS	New York, New York.
P. T. QUINN	Newark	New Jersey.	W. C. WILSON	Baltimore, Maryland.
I. D. RICHARDSON	Clarksville	Nebraska.	O. F. WINCHESTER	New Haven, Connecticut.
E. A. RIEHL	Alton	Illinois.	JOHN D. WOLFE	New York, New York.
EDMUND LAW ROGERS	Baltimore	Maryland.	A. WORK	New York, New York.
SAMUEL H. RUMPH	Marshallville	Georgia.	DR. A. P. WALLI	Chester, South Carolina.
GURDON W. RUSSELL, M. D.	Hartford	Connecticut.	W. H. YEOMANS	Columbia, Connecticut.
H. S. RUSSELL	Milton	Massachusetts.	J. M. W. YERRINGTON	Boston, Massachusetts.
STEPHEN SALISBURY	Worcester	Massachusetts.	JAMES YOUNGLOVE	Bowling Green, Kentucky.
F. G. SAMPSON	Micanopy	Florida.		

Biennial.

ISAAC ANDERSON.....	New Haven.....	Connecticut.	THOMAS S. KENNEDY.....	Louisville.....	Kentucky.
P. M. AUGUR.....	Middlefield.....	Connecticut.	FRED. W. KELSEY.....	Rochester.....	New York.
HELEN V. AUSTIN.....	Richmond.....	Indiana.	M. D. KENDIG.....	Cresswell.....	Pennsylvania.
J. LYMAN BABCOCK.....	Norfolk.....	Virginia.	EDWARD KIDDER.....	Wilmington.....	N. Carolina.
GEORGE BALDERSTON.....	Colora.....	Maryland.	J. W. MANNING.....	Reading.....	Massachusetts.
WILLIAM N. BARNETT.....	West Haven.....	Connecticut.	J. S. MCCALLA.....	Philadelphia.....	Pennsylvania.
W. P. BISSELL.....	Richmond.....	Virginia.	EDWARD M. MOODY.....	Lockport.....	New York.
W. D. BRACKENRIDGE.....	Govanstown.....	Maryland.	ELISHA MOODY.....	Lockport.....	New York.
G. B. BRACKETT.....	Denmark.....	Iowa.	GEO. H. MOODY.....	Lockport.....	New York.
MOSES BRINTON.....	Octorara.....	Pennsylvania.	JOHN B. MOORE.....	Concord.....	Massachusetts.
WILLIAM BROCKSBANK.....	Hudson.....	New York.	R. A. MOORE.....	Kensington.....	Connecticut.
A. BRYANT, SR.....	Princeton.....	Illinois.	JOSIAH NEWHALL.....	Lynnfield.....	Massachusetts.
REV. ROBERT BURNET.....	Hamilton.....	Ontario.	EZRA A. OSBORN.....	Middleton.....	New Jersey.
ISIDOR BUSH.....	Bushberg.....	Missouri.	AMBROSE F. PAGE.....	Billerica.....	Massachusetts.
AARON D. CAPEN.....	Boston.....	Massachusetts.	S. PATTERSON.....	Lynchburg.....	Virginia.
HOWARD A. CHASE.....	Philadelphia.....	Pennsylvania.	GEO. P. PEFFER.....	Pewaukee.....	Wisconsin.
LEWIS CHASE.....	Rochester.....	New York.	JAMES PENTLAND.....	Baltimore.....	Maryland.
ELIPHALET CLARK, M. D.....	Portland.....	Maine.	RANDOLPH PETERS.....	Wilmington.....	Delaware.
C. S. COLE.....	Spencerport.....	New York.	W. H. RAGAN.....	Clayton.....	Indiana.
JOHN S. COLLIS.....	Moorestown.....	New Jersey.	JAMES H. RICKETTS.....	Newburg.....	New York.
W. A. M. CURLBURT, M. D.....	Newburg.....	New York.	PROF. C. V. RILEY.....	St. Louis.....	Missouri.
D. S. CURTIS.....	Paris.....	Illinois.	JOHN SAUL.....	Washington.....	Dist. Columbia.
D. M. DEWEY.....	Rochester.....	New York.	WILLIAM L. SCHAEFFER.....	Philadelphia.....	Pennsylvania.
DANIEL S. DEWEY.....	Hartford.....	Connecticut.	R. M. SIMMS.....	S. Carolina.
E. W. DURAND.....	Irvington.....	New Jersey.	HIRAM H. SMITH.....	West Haven.....	Connecticut.
EDWARD J. EVANS.....	York.....	Pennsylvania.	JAMES SMITH.....	Des Moines.....	Iowa.
H. H. FARLEY.....	Union Springs.....	New York.	WATERMAN SMITH.....	Manchester.....	New Hampshire.
REV. A. FURNAS.....	Danville.....	Indiana.	W. H. SMITH.....	Geneva.....	New York.
LEVERETT GROVER.....	Windsor.....	Ohio.	THOMAS SMITH.....	Geneva.....	New York.
DR. C. C. HAMILTON.....	Cornwallis.....	Nova Scotia.	J. E. SNODGRASS.....	Washington.....	Dist. Columbia.
SAMUEL HAPE.....	Atlanta.....	Georgia.	DR. F. STRENTZEL.....	Martinez.....	California.
A. W. HARRISON.....	Philadelphia.....	Pennsylvania.	DR. E. L. STURTEVANT.....	S. Framingham.....	Mass.
J. J. HARRISON.....	Painesville.....	Ohio.	JOHN M. STUBBS.....	Dublin.....	Georgia.
PETER HENDERSON.....	Jersey City.....	New Jersey.	DR. E. WARE SYLVESTER.....	Lyons.....	New York.
H. E. HOOKER.....	Rochester.....	New York.	GEO. B. THOMAS.....	West Chester.....	Pennsylvania.
JOSIAH HOOPES.....	West Chester.....	Pennsylvania.	B. F. TRANSOU.....	Humbolt.....	Tennessee.
WILLIAM HOWE.....	North Salem.....	New York.	EDWARD WHITNEY.....	Boston.....	Massachusetts.
STEPHEN HOYT.....	New Canaan.....	Connecticut.	EZRA WHITMAN.....	Baltimore.....	Maryland.
THOMAS P. JAMES.....	Cambridge.....	Massachusetts.	S. D. WILLARD.....	Geneva.....	New York.
THOMAS P. JAMES.....	Atlanta.....	Georgia.	E. WILLIAMS.....	Montclair.....	New Jersey.
S. T. JENKINS.....	Atlanta.....	Georgia.			

PROCEEDINGS
OF THE
AMERICAN POMOLOGICAL SOCIETY.
1877.

FIRST DAY—MORNING SESSION.

BALTIMORE, MARYLAND, September, 12, 1877.

The Society met in the Concert Hall of the Academy of Music at 10 A. M., and in the absence of the President, the Honorable MARSHALL P. WILDER, who was prevented by sudden illness from attending, was called to order by the Secretary.

C. M. HOVEY, Vice-President for Massachusetts, was elected to preside during the meeting.

On motion of Mr. Schaffer, of Pennsylvania, a telegram was ordered to be transmitted to the President, expressive of regret at his absence and hoping for his speedy restoration to health.

Mr. W. H. PEROT, President of the Maryland Horticultural Society, welcomed the Society to the city of Baltimore, in an appropriate and cordial manner.

Mr. HOVEY responded on behalf of the Society, thanking the Maryland Horticultural Society for the courtesy extended to the American Pomological Society.

The following Committee on Credentials was, on motion, appointed by the presiding officer: Josiah Hoopes, of Pennsylvania; George Ellwanger, of New York, and O. B. Hadwen, of Massachusetts.

Benjamin G. Smith, of Massachusetts, in the absence of the Treasurer, Mr. James, who was detained by sickness, was chosen Treasurer *pro-tem*.

On motion of Mr. Barry, of New York, delegates were invited to come forward and enroll their names and pay their dues, and a short recess was taken for that purpose.

The following Committee on Record of Fruits exhibited, was appointed by the chair: P. J. Berekmans, of Georgia; George B. Thomas, of Pennsylvania; Charles Downing, of New York; George W. Campbell, of Ohio, and H. McLaughlin, of Maine.

The following Committee was appointed on Award of Wilder Medal: A. W. Harrison, of Pennsylvania; Elisha Moody, of New York; William L. Schaffer, of Pennsylvania; William Watson, of Texas, and B. F. Transon, of Tennessee.

A Committee on Revision of Constitution, consisting of P. Barry, of New York; P. J. Berekmans, of Georgia, and John A. Warder, of Ohio, was appointed.

The following Committee on Nominations was appointed: Josiah Hoopes, of Pennsylvania; F. Trowbridge, of Connecticut; John Saul, of the District of Columbia; W. H. Ragan, of Indiana; G. B. Brackett, of Iowa; H. McLaughlin, of Maine; James Pentland, of Maryland; O. B. Hadwen, of Massachusetts; George Thurber, of New Jersey; George Ellwanger, of New York; G. W. Campbell, of Ohio; Silas Moore, of Rhode Island; R. M. Simms of South Carolina; B. F. Transon, of Tennessee; William Watson, of Texas, and Franklin Davis, of Virginia.

Mr. Perot, on behalf of the Maryland Horticultural Society, extended an invitation to the members to participate in a steamboat excursion to Riverside, and the peach orchards of Col. Wilkins, in Kent County. The invitation was accepted with thanks.

On motion of Mr. Barry it was voted that evening meetings be held at the Carrollton House, and Mr. Pentland was appointed a Committee to obtain a suitable room.

The Report of the Treasurer was then called for, and the following letter and report were read by the Secretary. The letter was referred to the Committee on Nominations.

HON. MARSHALL P. WILDER:

CAMBRIDGE, September 8th, 1877.

MY DEAR SIR:—I enclose my Report of Receipts and Expenditures of the funds of the American Pomological Society, as Treasurer of the Association. Also my check on the Charles River National Bank, to your order, for the sum of Three Hundred and Sixty-nine $\frac{37}{100}$ dollars, the amount of balance in my hands, of the Society's funds. I hold the stock of proceedings of the association subject to your order.

I am sorry to inform you that the state of my health is such that I am admonished to decline a reelection to the office of Treasurer of an association which I have held *ab initio*.

With sentiment of the highest respect, I remain most truly yours,

THOMAS P. JAMES.

TREASURER'S REPORT.

CAMBRIDGE, September, 1877.

To the President and Members of the American Pomological Society:

GENTLEMEN:—I submit a statement as Treasurer, of the Receipts and Disbursements of the funds of the Association during the term of 1876-1877, viz:

RECEIPTS.		DISBURSEMENTS.		
1875.		1875.	By amount forward,.....	
Sept. 11.	To balance on hand, per last report,....	\$471 56	Mar. 27.	By cash paid E. R. Andrews, for printing, etc., of the proceedings of the 15th session, by order of the President,.....
1877.			Apr 11.	By cash paid for printing, call on members for postage etc., including 300 postal cards,.....
Sept. 11.	To cash received for eighteen life memberships, \$20 each,.....	360 00		By cash paid for paper, for envelopes and help,.....
	To cash received for one hundred and thirty-three biennial memberships \$4 each,.....	532 00	1876.	
	To cash for sale of a catalogue,.....	50	April,	By cash paid express charges on proceedings to Boston and Cambridge,...
	To cash for a copy of proceedings to a member having mislaid his copy,....	1 00	1877.	
	To cash for a full set of the proceedings by permission of the President to the Nebraska State Horticultural Society,.....	20 00	Mar.	By cash paid for 400 one cent stamps on circulars sent to members,.....
		\$1,385 06	April,	By cash paid to Rand & Avery for printing, etc., circulars to members, \$29, and for envelopes, \$4,.....
			Sept.	By cash for note paper, envelopes, stationary, etc.,.....
1875.				By cash paid for printing a notice of session at Baltimore, including 500 postal cards,.....
Sept.	By cash refunded to W. C. Flagg, Secretary, for postage stamps, by order of the President,.....	15 00		By cash paid for printing notice of hotel rates at Baltimore, including 400 postal cards,.....
	By cash paid C. E. Southard for 875 copies of fruits, by order,.....	21 00		By cash paid for postage on proceedings sent to life and other members during the term, \$6.88; do on 48 letters, 3 cts. each, \$1.44; do on 7 postal cards, 7 cts.,.....
Oct. 9.	By cash paid for printing 150 slips and on 120 postal cards,.....	3 25		By balance on hand,.....
Nov. 15.	By cash paid Prof. C. V. Riley for the wood cut of the Canker worm, by order of the President,.....	18 15		
	By cash paid Rand & Avery for printing circulars, etc., by order of the President,.....	55 75		
		113 15		

Respectfully submitted,

THOMAS P. JAMES, *Treasurer*.

The Report was accepted, but the Society could not allow Mr. James to retire from an office which he had so honorably filled from its origin.

The subject of the next place of meeting being taken up, Nashville was urged by Messrs. Transou, Berckmans and Brainerd, and the claims of Rochester advocated by Messrs. Moody, Hooker and Barry. On motion of Mr. Pentland, action was postponed until afternoon.

Adjourned to 3 o'clock P. M.

FIRST DAY—AFTERNOON SESSION.

ADDRESS OF THE HON. MARSHALL P. WILDER.

In the absence of the President his address was read as follows :

Gentlemen of the American Pomological Society :—This is the the sixteenth session of our Association. We meet here by the invitation of the Maryland Horticultural Society, through whose courtesy and liberality we have been provided with most ample accomodations for the occasion.

Most heartily do I rejoice in the privilege and pleasure of taking by the hand so many with whom I have been associated in the past for the promotion of the objects of this Association, and from whom I have received so many expressions of confidence, and so much assistance in the discharge of my duties.

Once more, through the loving kindness of Him who again hath restored my health, I rise to perform a service which the Constitution of our Society devolves upon me. Almost a generation of men have passed from the stage of action since its formation, but, thanks to a merciful Providence, some still live who assisted in its organization, and are here to-day. To these and to all who have come here to cooperate with us I extend a most hearty welcome.

Amidst the strides of scientific research and a higher state of civilization, which has distinguished the present century, in nothing is progress more apparent than in the advancement of pomological knowledge on this continent. I have spoken of this on former occasions, but now, as we are entering on the second century in the history of our republic, I have thought that a review of what has been accomplished, even at the expense of repeating something which I may have uttered before, would be both interesting and instructive.

THE GROWTH, EXPANSION AND INFLUENCE OF THE AMERICAN POMOLOGICAL SOCIETY,
AND KINDRED ASSOCIATIONS.

Frequent allusion has been made to the remarkable growth and influence of our Association.

At the first meeting of the Society, in the year 1848, there were but twelve States represented by delegates, while at our last session in Chicago, in 1875, there were, as may be seen by the Report on Credentials, twenty-eight States, Territories and Provinces represented in person, and nine by letters of correspondence, making a grand total of thirty-seven. In 1848 the attendance was limited by the number of delegates present from these twelve States, and the jurisdiction of the Society by the area which they represented. Now we have on our roll the names of three hundred and thirty-eight members, and its field covers the entire territory from Canada to Texas—from Nova Scotia to California. From nearly all of these States and districts reports are regularly received of the progress and condition of fruit culture therein, with fruits for identification and comparison, and with lists of those adapted to their several localities. And here let us acknowledge with gratitude the noble and generous manner in which the various State Societies and Fruit-Growers' Associations have coöperated with our institution to bring about the grand results which we have witnessed.

With the close of the present session the Society will have held sixteen conventions, and will have entered on the thirtieth year of its existence. Three sessions of the Society have been held in the city of New York, three in Philadelphia, three in Boston, two in Rochester, N. Y., one each in the cities of Cincinnati, St. Louis, Richmond and Chicago, to which will soon be added the city of Baltimore. These sessions have been marked by evidently rapid and most gratifying progress, both as regards the informa-

tion acquired and disseminated, as well as by the improved workings of the Society, and the character and usefulness of its publications. This progress has been essentially promoted by the holding of its meetings in distant cities of the United States.

From this fact the Society has been called a national institution. But it is more than national. It is continental, embracing within its fold not only the States of the Union, but the British Provinces on our border. Its latitude extends over twenty-five degrees, and its longitude the entire breadth of this continent. Its area embraces almost every variety of soil and temperature, where almost all of the fruits of the various zones may be grown, from the apples of Canada, to the oranges, figs and bananas of Florida, Louisiana and California. It is therefore properly styled an American Society. Its field is not merely the American Union, it is our continent. Its men and means have been more effective than were ever before used for the promotion of Pomology. The capabilities and probabilities of its field for progress were never surpassed by any country, affording, as it does, ample scope for testing the fruits adapted to the various climates, temperatures and soils of our widely extended domain.

THE EXTENSION OF FRUIT CULTURE, AND THE IMMENSE CROPS OF OUR COUNTRY.

As the source of light and heat travels from the East, completing its daily circuit on our Western shore, there to rejoice in all his strength, so fruit culture has crossed our continent to the Pacific slope, there to produce almost all the fruits of the habitable globe, and finally to permeate, enrich and adorn our whole land.

At the time of the organization of our Society, the cultivation of fruits for the market, or for exportation, was limited to a few of the older States. In Mr. Coxe's opinion the fine apple growing section was bounded by the Mohawk river in the North, and the James river in the South. Fruit growing in this section was confined principally to apples and peaches; but very few of the latter found their way to the markets of the North, while strawberries and other small fruits were scarcely to be seen, except in the locality where they were raised.

But now, almost every steamer from New York for Liverpool or London, in the fall and winter months, takes apples varying from five hundred to three thousand barrels. Shipments have been made from other ports, and as late as last May there were fifteen hundred barrels sent to England from Philadelphia. In December last, ninety thousand barrels of American apples were landed at Liverpool. Very little difficulty is experienced in the winter months, but arrangements have been made to ship in warm weather by vessels with refrigerator compartments.

As the refrigerating process becomes more and more perfect it will aid largely the exportation, not only of apples, but of more delicate fruits. Pears, peaches and grapes have been sent to England in good order, and it is confidently expected that American peaches will soon be well known in the markets of England.

But what shall we say of Canada, Iowa, Wisconsin, Minnesota, Kansas, Nebraska, California, Oregon and other sections, and other new States and Territories, where the cultivation of fruits had scarcely commenced when this Society was established! Who that witnessed the exhibitions of fruit from the States first mentioned at our various sessions in Richmond, Boston, Chicago, and at the Centennial in Philadelphia, has not been surprised at the progress already made.

At the time this Society was formed the area of fruit culture and the value of our fruits was so limited that it was not thought worth while to collect the statistics. Then many States, Canada and Nova Scotia, had given but little attention to fruit culture, except that of apples. These and other sections were deemed too far North for successful fruit cultivation. Now they produce large quantities of fine fruits, the Nova Scotia Society having received four medals from the Royal Horticultural Society of London, and the Ontario Society, at the Quarter Centennial session in Boston in 1873, the Wilder Medal, for the best collection.

The estimate by the Government for the Centennial, last year, furnished the following statistics (soon to be published), of the fruit culture of our country:

The number of acres under cultivation, in orchards, vines and small fruits, is estimated at 4,500,000. The number of trees is estimated as follows: apples, 112,000,000; pears, 28,260,000; peaches, 112,270,000; grapes, 141,260,000; total, 393,790,000. The estimated value of fruit products is: apples, \$50,400,000;

pears, \$14,130,000; peaches, \$56,135,000; grapes, \$2,118,900; strawberries, \$5,000,000; other fruits, \$10,432,800; making a grand total of \$138,216,700; or, nearly equal to one-half of the value of our average wheat crop. California, to say nothing of figs, oranges, olives and almonds, has nearly one-third of the whole grape area, sixty thousand acres of vineyards, and forty-three millions of vines, yielding annually, besides grapes and rasins for the market, ten millions of gallons of wines, to which may be added the wines of Missouri, Ohio and other States, the whole wine product being fifteen millions of gallons, as the annual crop.

The following are a few illustrations of the immense quantities of fruits which are sent to market in addition to what is consumed at home.

Of strawberries, there were received in one day, in the New York market at the height of the season, from all sources, 7,000 crates, averaging at least a bushel and a half each—more than 10,000 bushels. The crop of peaches raised in this country is so enormous that we hardly dare state the quantity. The largest crop was in 1875, and on the peninsula of Delaware and Maryland—alone was estimated at between 7,000,000 and 8,000,000 baskets.

From California, according to the statement furnished me by Mr. E. J. Hooper, editor of the California Horticulturist, there were sent East in 1876, three hundred and thirty-four car loads of fruit, of four hundred bushels each: an increase of more than one hundred per cent. over the previous year, one firm having sent seven hundred tons; and of the strawberry, it is estimated that from San Jose and vicinity, some days there were sent for home consumption forty tons of this fruit, and in a circuit of about five miles there are more than a thousand acres of this fruit under cultivation. Dr. Strentzel, our Chairman of the Fruit Committee for California, writes, that, at short notice, that State can furnish the whole continent with an overflowing supply of fruit.

From Virginia, Mr. Leighton, our Vice-President, writes, that the increase of Strawberry culture in the vicinity of Norfolk, is astonishing, completely heading the page of horticultural progress, and that it seems wonderful how the demand keeps pace so closely with the supply. The shipments this year have been over three millions of quarts. There were nearly 10,000 pickers in the field in one day. One grower had 135 acres. To Boston alone there have been shipped this year 11,547 crates, of 45 quarts each, or more than 16,000 bushels.

In Illinois very little fruit was raised, except for home use, until 1840, when, according to Mr. Flagg's interesting historical address before the State Horticultural Society, a new era in fruit culture commenced. Now there are 320,000 acres of orchards in that State. Mr. Parker Earle informs me that in a good season there have been sent from his station alone (Cobden) twenty-five car loads of fruit daily. Of strawberries, where scarcely any were raised sixteen years ago for exportation, within six or seven years the cultivation has increased at Cobden and vicinity to over one thousand acres, so that five or six car-loads daily are dispatched to the various markets.

From Georgia, Mr. Berekmans, President of the State Horticultural Society, writes as follows of the late exhibition of his Society:

"Many of our people of intelligence were amazed at our progress. The exhibition of fruits was grand. I am safe in saying that the display of peaches was never surpassed, if equalled, in any place in the past. I had fifty-six varieties of peaches, all ripe and in perfection; others had collections almost equal in number, and several surpassing in size. Many had peaches measuring twelve and one-half inches in circumference. The grape show was almost equal to the peach exhibit. Upwards of fifty varieties were exhibited. Some wonderfully fine Concords were shown, which weighed one pound to the bunch. Pears were fine, but not numerous as to varieties." He had forty varieties in eating condition, which, together with the balance of his collection, made nearly two hundred varieties of fruits.

The increase in the crops of apples, in New York, Michigan, and the more Western States, is wonderful.

From New York, it is estimated that in abundant years, one and a half millions of barrels, are exported in addition to those consumed at home, a single firm at Boston receiving from that State from 30,000 to 40,000 barrels of apples per year. In the best seasons, Monroe, Niagara and Orleans counties produce more than one million barrels of apples, and the value in one county is stated to be a million of dollars.

Michigan is a great fruit producing State and many parts of it fully up to New York. The crop of apples in this State, is estimated by Vice-President Lyon, at \$2,000,000 in value; peaches, \$1,000,000, and other fruits, \$1,000,000, or a total of \$4,000,000.

TROPICAL FRUITS.

The reports of Mr. Bishop, Chairman of the Fruit Committee for Florida, and of Mr. Redmond, Vice-President for Mississippi, give promise of a great increase in the cultivation of tropical fruit. This, says Mr. Berckmans, has revolutionized the State of Florida within the past ten years. It has long been known that the climate of Florida was well suited to the cultivation of the orange, but it is within the last few years that it has been practically demonstrated that this, as well as many other tropical fruits, could be grown with profitable results. Florida oranges were, until within a few years, seldom seen in our northern cities; now the bulk of the consumption is derived from the flowery State. In this, as in many other fruits in other sections of the continent, there has been great improvement; by selecting the best varieties for propagation, until the standard of quality of the orange in California is based upon that of Florida oranges. The lower portions of Mississippi and Louisiana produce large quantities of oranges, but they are seldom shipped to the northern cities, New Orleans consuming all that are produced in the surrounding parishes. Bananas are being extensively grown in lower Florida, and find ready sale at remunerative prices. Limes, shaddockes and lemons have received increased attention, while pineapples have been found to be very successful in the southern portion of Florida. The date begins to thrive successfully on the coast of lower Georgia and will doubtless ere long be extensively cultivated. California now raises seven millions of oranges annually, and it appears probable that this State, with the Gulf States, can furnish all the tropical fruits required for the consumption of the whole country.

The immense collection of fruit shown at the Centennial Exposition last year, surpassing even the great exhibitions of this Society at Boston and Chicago, deserves mention here. Mr. Parker Earle, one of the Judges, writes me, "I know that the judges examined over twelve thousand dishes of fruit during the week commencing the 10th of September, and I have no doubt that the entire exhibition during the season reached the grand number of over sixty thousand dishes, and over four hundred thousand specimens."

Such are some of the statistics which I have been able to gather, but it is hoped that the response of our own Vice-Presidents to our circular will make the report of our resources more complete.

In view of the wonderful progress which has already been made, we begin to realize the great importance of American Pomology, nor should we forget, as among the great benefits of fruit culture, the employment of thousands of men, women and children, or the immense amounts paid for freight on fruits to railroads, steamboats, etc., and the profits to dealers.

But who can estimate the amazing quantities of fruits that are to be produced on this continent, when the lands suited to fruit culture are brought into use! Look at the vast amount of these in the eastern slope of our country, and still more wonderful, the land on the Pacific slope. Of these, California alone has a territory 800 miles in length and 200 miles in breadth—three times as large as all of the New England States—four times as large as the State of New York or Pennsylvania, having millions of acres for fruit cultivation.

THE INTRODUCTION AND DISSEMINATION OF NEW AND VALUABLE AMERICAN FRUITS.

The introduction of new American varieties from seed, adapted to all sections of our vast territory, not only in itself, but as incentives to further progress, cannot be overrated. To this, more than to any other cause, are we indebted for the rapid progress of American Pomology. Fruits of foreign origin, although of great value in certain sections of our country, have not as a rule yielded such favorable results as those selected from our new and improved native fruits. By this means we have not only introduced new varieties, adapted to every section of our country, but varieties which have prolonged the season of fruits in some sections, either by early or late kinds, for one or more months. Especially is this to be seen in the peach, grape, and strawberry, so that many of our markets are supplied for a much longer period than ever before.

By the introduction of early peaches, the season for this fruit has been advanced nearly a month. In South Carolina and Georgia shipments have been made this year to northern markets as early as May 25th. Similar illustrations might be given of the prolongation of the season of the strawberry, the grape, and the pear, in our markets; those of the north being now supplied with the strawberry from the first of May to the middle of July; and with the grape and the pear from the first of July until April or May. And why may not those who have the means, supply their tables with fruits in some form through the year? Some of us already enjoy this luxury, beginning with the strawberry and following in succession with the other small fruits, the grape, the pear and the apple, thus furnishing a circle of fruits which delights the eye, gratifies the taste, improves the health, and crowns our daily meals throughout the year.

California seems to be the most favored spot on earth for the production of new varieties of fruits, if we may judge by such pears as the Fox, Barry, Wilder and others, raised from seed by Mr. Fox, our Vice-President for that State. If his success should be taken as a criterion, and these fruits should prove adapted to other climates, that State alone can supply the world with improved varieties, not only of the pear but of other fruits. Matured as the seed is in the warm, dry summers and autumns of California, we have reason to hope for great vigor and hardiness.

Great advances have been made in the improvement of our wild fruits, such as are seen in the varieties of the Chickasaw and Wild Goose plum, of which these are types, and the new varieties of grapes for the South, from which regular and profitable results are obtained, where none were before. In this connection we may also mention the crab apple, which, though not indigenous, has furnished, in its improved varieties and hybrids, fruit of the greatest value for the extreme north.

IMPROVEMENT IN PACKING AND TRANSPORTATION.

Much of our progress in pomology and horticulture is due to the increase of facilities for transportation afforded by railroads and steamboats. Especially is this the case in the Southern and Western States, and California. These railroad and steamboat facilities have induced fruit growers to increase their products, being assured they would arrive in good condition in distant markets. But these improvements in transportation would have been of but little advantage had they not been supplemented by careful packing. Steamers and cars are now provided with large refrigerators, by which delicate fruits can be sent long distances, even to Europe. The various styles of fruit packages, every class of fruit being provided with one suited to its character, are wonders of cheapness and efficiency. The obstacles with which we formerly had to contend have been mostly removed, so that fruits can be sent safely to very distant markets, where it was impossible to send them ten or fifteen years ago. This increased supply has increased consumption and caused a corresponding decrease in prices. It has made fruit almost a necessary portion of our daily meals, thus largely fostering its production. The packing of trees has also received more attention than formerly. Experience has taught us much on this point, especially in adapting it to the character of the voyage and the climate through which the trees are to pass. Thus trees shipped by our friends Ellwanger & Barry, to Australia, after a voyage of fifteen thousand miles and being one hundred and fifty-three days on the way, were received in safe condition. Only three trees out of one hundred and sixty were dead.

In this connection I desire to impress on the packers and shippers of fruit to foreign lands, since our best American apples have sold in London at much higher prices than English and French apples, the great importance of especial vigilance in seeing that no inferior fruit ever crosses the ocean, thus preserving the integrity of our fruit growers and dealers, and the reputation of our nation for the superiority of our fruits.

England esteems American apples above all others. As long ago as 1773, when the crop of apples had failed the previous year, English importations from this country had been made and were highly appreciated. In a letter from Michael Collinson to John Bartram, of Philadelphia, he writes as follows:—“Your American apples have been an admirable substitute this season, some of our merchants having imported great quantities of them. They are, notwithstanding, too expensive for common eating, being sold for two pence, three pence, and even four pence an apple. But their flavor is much superior to any thing we can pretend to, and I think even superior to the apples of Italy.”

THE PERFECTION ATTAINED IN THE CANNING AND DRYING OF FRUITS.

The canning process has been brought to great perfection, and that of drying promises to become even more useful, when it shall have arrived at its utmost development, possessing the great advantage for transportation of reducing the weight three-fourths or more by the removal of water, and rendering it capable of shipment to all climes, and of being preserved perfectly for years. We need not fear an overstock, as many new ways will doubtless be devised for its use. The extent of this business is already immense, but I have been unable to procure any statistics. Six canning firms in California employ two thousand women and children, and turn out from one and one-half to two millions of dollars yearly in amount of goods. Figs and grapes are being extensively dried in California. The quantity of raisins already produced annually is estimated at 400,000 pounds or more. Although not yet equal in quality to those imported from Europe, it is believed that with further experience they will be produced of the highest excellence. Of dried fruits there were cured in that State, by the Alden Company alone, seventy-five tons. As time advances there will doubtless be many other modes introduced for utilizing any surplus of abundant seasons. Well does a writer remark, "There ought to be a score of elegant and nutritious preparations in all our markets, thus adding to the variety of fresh and prepared fruits, and superseding the wretched pastry and other abominations now in vogue."

REVENUE FROM FRUIT CULTURE.

The foreign market for our fruits is now as well established as that for our wheat. Competent judges unite in the opinion that the European and Australian markets are prepared to take increasing quantities of fresh and dry fruit if landed in good condition. Australia and Germany will consume immense quantities of dried fruits, but England prefers fresh fruit.

There have been shipped to foreign ports from this country since last October three hundred and ninety-six thousand barrels of apples. In December last there were sent on an average over twenty thousand barrels per week, or ninety thousand barrels for the month. These consisted mostly of the Baldwin, Rhode Island Greening, and Newtown Pippin. The English like red apples best, and so it has been from the reign of Henry VIII, red apples generally commanding the best price. A decided preference is given to American apples. The English market can take from twelve to fifteen thousand barrels per week, and shipments sell readily, varying in price from three dollars and fifty cents to ten dollars per barrel.

The foreign market for peaches will be very great if prices can be made moderate, and when our refrigerating ships shall be perfected. England can take much of the surplus of our immense crops of this fruit. The same is true of pears, but all sales depend on the condition of the fruit.

Formerly a large crop was not a blessing, owing to limitation of the market and the expense of gathering the fruit, and it has been estimated that a loss of several millions of dollars has been sometimes sustained in an abundant year by the waste of fruit. The whole crop may now be saved and utilized by the new methods which are being constantly invented for curing and distributing this surplus. In fruit districts large amounts of capital are invested in establishments for the drying and canning of fruits, which promise to put the surplus of abundant seasons in condition for preservation till wanted for consumption or exportation. Some of these are yet to be tested, but no doubt exists that we shall eventually thus utilize our fruits, and make them not only profitable, but a source of increasing revenue to our country.

With reference to the demand for dried fruits the consumption is rapidly increasing, and if dried peaches can be furnished at as low prices as apples, the demand, it is thought, will be very great. Of dried fruits there were exported for the year ending June 30, 1877, 14,318,052 pounds. Of preserved and canned fruits, especially peaches, there have been exported 762,344 dollars' worth in the year ending June 30, 1877. The trade for these is well established and the demand is constantly increasing. Although the exportation of fruit has been going on quietly for a long time, it was not large till the year 1865; but since that time the trade has been rapidly developed. These exports have varied much in yearly amounts, occasioned by scarce or abundant seasons. In 1861 the amount was only \$269,000. In 1871 it was \$509,000, while for the year ending June 30, 1877, it amounted to \$2,937,025, as kindly furnished me by Dr. Young, chief of the Bureau of Statistics--showing an increase of more than five fold for the last five years.

CROSS-FERTILIZATION.

Whatever the fruit cultivators of ancient times may have known in regard to the cross-impregnation of varieties for their improvement, we have no evidence, if we may judge by the quality of the fruits which have come down to us, that they were acquainted with this process. The first experiment to ascertain the possibility of producing varieties by cross-fertilization appears to have been made in Germany, by Koelreuter, who published reports of his proceedings in the acts of the Petersburg Academy, about one hundred years ago. Knight, Herbert and the Lindleys commenced the work some fifty or sixty years since, but it had scarcely been recognized by Duhamel, Noisette, or Poiteau, in their writings, and Van Mons absolutely discouraged it. Poiteau remarked that all of the ameliorated and superior fruits had their origin in woods and hedges, where superior fruits were rare and unknown. Nor was it more than alluded to by Coxe, Lowell, Manning, Thomas, Prince, and such leaders in our own land. Coxe, who may be styled the first American pomologist, alluded to it as "a curious discovery which had been made by Mr. Knight in the natural history of fruit trees, by which one variety might be impregnated with the farina of another, some of the products partaking of the properties of the male, others of the female parent."

But with the publication of Hovey's Magazine of Horticulture, Downing's Fruit and Fruit Trees, and the Horticulturist, the experiments in hybridization became well known in our country. This process, applied to the grape, said Andrew Jackson Downing, thirty years ago, will give hundreds of hardy kinds, adapted to every orchard and garden in the Union. How fully this prediction has been fulfilled we have seen in the new varieties of hybrid grapes produced by Allen, Rogers, Moore, Campbell, and especially by Mr. Ricketts, whose wonderful success in cross-fertilization has been achieved on the very soil where this prophecy was made. With this knowledge commenced a new era in the production of improved varieties of fruits, flowers and vegetables; an era which has so enlarged the sphere of experiments in fertilization that its originators will ever be gratefully remembered as benefactors to mankind, who have illustrated one of those wonderful and beautiful laws by which the whole universe is regulated, and by which improvement in fruits, vegetables, and animal life may be advanced until absolute perfection is attained.

NOMENCLATURE.

The progress in correct nomenclature has been most gratifying, and the labors of the American Pomological Society, in connection with its great exhibitions of fruits, have had a prominent leading influence in this result.

Mr. John J. Thomas says, "I well remember the continued disappointments I met with when a young man in procuring trees that were true to the name—in some fruits accuracy seemed to be decidedly the exception. In corresponding on this subject some forty years ago with the elder Robert Manning, he remarked that the account of my disappointment was a history of his own." At the present time, all respectable nurseries are accurate throughout, and purchasers scarcely find an error. One of the objects of the founders of this Society was to correct the evils which formerly existed; to aid in determining the synonyms by which the same fruit was known, and thus to establish the correct names and impart a knowledge of the value of varieties.

Much has been accomplished by the Society's Catalogue, whereby a permanent foundation has been laid, which will eventually result in the complete abrogation of such names as are used without fitness, propriety or even truth. We especially desire, for the honor of our science, that all inelegant or absurd names, such as Cathead, Hogpen, Sheepnose, Stump the World, and the like, should no longer be applied to fruits. In this respect we have made great advances by the suppression of vulgar names and the adoption of such as have reference to the origin, introduction, or the characteristics of our fruits. How absurd to give to a luscious fruit, radiant with the loveliest tints of nature, and fragrant with the spices of Arabia—a fruit possessing almost supernal grace—such vulgar names. How inappropriate the dedication of fruits to warriors and statesmen, to generals and colonels, presidents and senators, or the long roll of titled nobility, which have no natural connection, or analogy, with fruits. How much more appropriate, for instance, are the names of the Baldwin and Porter apple, the Bartlett and Sheldon pear, the Early Crawford and Late Admirable peach, the Concord grape, and Wilson's Albany strawberry. Some of these have come down to us from former generations, and will survive as long as the varieties which bear them exist,

without the use of three hundred and seventy names for twenty-nine kinds of apples, as stated in Dr. Howsley's Report of 1875. Our catalogue already abounds with the names of fruits of American origin, and they will ere long surpass in number those of foreign climes. Let us, then, labor to establish a pure, proper and practical nomenclature of fruits for our land, which shall be correct, definite, intelligible, and which shall endure for all time.

Among the most important acts of this Society was the rejection, as unworthy of cultivation (in 1858, nineteen years since), of 625 varieties of fruits, then known in the catalogues of nurserymen, but since suppressed. Not less important was the adoption of its own Catalogue of varieties adapted to the various sections of our widely extended country. This took place in 1862, but it was reserved for the year 1871 to inaugurate the present grand quarto form, arranged in Northern, Southern and Central Divisions, similar in climate and other characters affecting fruit culture, with columns for fifty States and Territories, thus presenting to the world the most perfect and practical catalogue of fruits extant. Thus shall we improve our pomology and thus hand down inestimable blessings to the world; not for ourselves only, but to gladden the sight, gratify the taste, and cheer the hearts of the advancing millions that are to occupy this blessed land. And what more enduring memorial of valuable service to posterity can we render than to transmit a fine fruit which shall survive when we have passed from our labors on earth. The pleasures of sight enhance the pleasures of taste, and thus generation after generation will rejoice in the beauty as well as the richness of fruits which have adorned our orchards and cheered our social meal, and which, with each successive year, cause us to realize the thought of the poet, that

"A thing of beauty is a joy forever."

POMOLOGICAL LITERATURE.

Among the most important agencies which have contributed largely to the advancement of the pomology of our country, we desire to speak especially of its literature. One hundred years ago this had not begun to exist in our country. Then there was not an agricultural, horticultural or pomological society, not a periodical or paper devoted to the cause of terraculture. When the Philadelphia and the Massachusetts Societies for Promoting Agriculture were formed, our only pomological literature was limited to a small number of European works. These were, as far as possible, collected in the libraries of these societies, and we early trace the beginnings of an American pomological literature in papers contributed to the publications of these same societies. The first of these communications appeared in the Massachusetts Agricultural Repository in 1796, on the natural history of the canker worm. In this paper Prof. Peck gave a very full account of this insect, still so injurious to our apple trees. This attention on the part of agricultural societies to fruit culture has continued and increased to the present day, and I am of the opinion that however much we may be indebted to the State societies and other prominent organizations, we owe much to the unpretending reports of local societies for the interest which now pervades the masses and popularizes pomological knowledge. All of these may be counted in the history and literature of American Pomology. Many of these are not only examples of real practical knowledge, but are highly creditable for their literary and scientific character. From these, our own publications have derived much of the information which gives them their excellence, all combining to make up the literature of American pomology. Only fifty years ago, the difficulty of obtaining correct information from our own countrymen in regard to fruit trees and the culture of them, was almost insuperable, and we were compelled to resort to such European authors as we could obtain. But those of the seventeenth and eighteenth centuries, such as Merlet, Quintinye, Duhamel, and the like, were in foreign languages, and not generally available for our use, if we except the "Pomologia" of the Dutch gardener, Hermann Knoop, which had been translated. It was not, however, until about the beginning of the present century, even in these countries, that the new enterprise in fruit culture, which characterizes the present age, had sprung up. The publications of Van Mons in Belgium, Forsyth and Knight in England, and Poiteau and Noisette in France, awakened a new interest in their own and other lands, but it was reserved for a later day, when their successors, George Lindley, Thompson, Rivers and Hogg, of England; Esperen, Bivort and Berekmans, of Belgium; Decaisne, Leroy and Mas, of France, and others of our own land, should infuse into the minds of cultivators that new zeal in fruit culture which has now spread throughout our own continent. But it was not until the establishment of horticultural societies in the United States, such as the

New York, in 1818, the Pennsylvania and Massachusetts, in 1828 and 1829, and the publication of their proceedings, that the glorious era in which we live commenced the development of our wonderful fruit resources. The first strictly pomological work published in America was Cox's "View of the Cultivation of Fruit Trees," which appeared in 1817.

Through foreign correspondence and commercial intercourse, the zeal which had been awakened in Europe soon extended itself to our shores: trees, scions and pomological books of foreign origin, were freely added to our own collections. Societies were formed, new nurseries established, catalogues published, and a general desire manifested for new and improved fruits.

In this new enterprise, Cox, of New Jersey; Hosack, Buel and David Thomas, of New York; Mease, Carr and Landreth, of Pennsylvania; Lowell, Manning and Downer of Massachusetts; Young, of Kentucky; Smith, of Rhode Island; Ives and Munson, of Connecticut; Corse, of Canada; Hildreth, Longworth and Kirtland, of Ohio; Corse and Rogers, of Maryland; Kennicott and Dunlap, of Illinois, and others, soon became actively engaged.

We have spoken of the early publications of Horticultural Societies, but there is another class of publications to which we are even more indebted. In 1819, appeared the forerunner of the present host of Agricultural papers, the American Farmer, which still continues in a green old age, and it is a pleasant coincidence that we meet in the city where this first journal saw the light of day, and whose editor is the Secretary of the society whose hospitality we are now enjoying.

Then came the New England Farmer, the Genesee Farmer, and the Albany Cultivator, through whose columns information began to be widely disseminated. Then came the fruit books and publications of the elder and younger Prince, Thacher, Manning, Kenrick, the Downings, John J. Thomas, Hovey, Barry, Brincklé, Warder, Hooper, Elliot, Field, Fuller and others. Nor should we fail to mention as powerful agents in advancing the cause, Hovey's Magazine of Horticulture, the Horticulturist, the Gardener's Monthly, and the American Journal of Horticulture. Another class of pomological literature deserves prominent recognition, viz.: the host of descriptive catalogues of our nurserymen, many of which are of the most reliable, instructive and interesting character. Ultimately, as a consummation much to be desired, came the Proceedings of the American Pomological Society for the last twenty-nine years, embracing in consolidated form the reports of the various States and districts, the discussions, the catalogues of fruits adapted to each section of our country, and other information, such as is nowhere else to be found in the history of pomological literature. Through these publications the reputation of our American fruits has attracted the attention of foreigners, so that European catalogues now possess many names of American varieties.

NECROLOGY.

But while I congratulate you on the prosperity of our institution, on its increasing influence, and on the lively interest manifested in its objects throughout our country, I am reminded of the absence of some who have labored with us for the promotion of our cause. Since our last session, there have been removed by death the following persons, who have held official positions in the Society: Dr. BENJAMIN F. EDWARDS, of Missouri; WILLIAM BLANCHARD TOWNE, of New Hampshire; BARTLETT BRYANT, of Vermont; Dr. EDWIN S. HULL, of Illinois; DANIEL W. COFF, of Connecticut; and Dr. JOHN S. HOUGHTON, of Pennsylvania.

Dr. Benjamin F. Edwards, of Kirkwood, Missouri, held the office of Vice-President for that State from 1867 to '69, and again in 1875 and '77. He was born in Darnestown, Maryland, July 2, 1797, and died at his beautiful residence in Kirkwood, April 27, 1877, at the ripe age of 80 years. His love of horticulture and kindred pursuits commenced early in life. He was intimately associated in the culture of the grape with Mr. Longworth, of Ohio, receiving cuttings from him of all the native and foreign grapes, which he scattered among the most enterprising of his numerous patients, and which made Madison county one of the first in the State in grape culture. He established a large vineyard in Jefferson county, on the German plan of close planting, having fifty varieties of grapes, which he eventually reduced to four: the Concord, Ives, Norton and Herbemont. His interest in all matters pertaining to horticulture continued through life. Dr. Edwards had lived in Kentucky and Illinois for a time, but he finally removed to St. Louis, with a great reputation as a physician, which in after life he fully maintained. Even in his busy profession, he constantly sought to promote all benevolent and Christian

enterprises, believing "that what he had belonged to God, and was given to him to be used for His cause." He was carried to his grave in a full old age, universally beloved and respected. Many of us well remember his introduction as the oldest Vice-President at Chicago, and his appropriate reply; also his affectionate speech at St. Louis, as he placed a wreath presented by the ladies of that city on the head of your presiding officer.

William Blanchard Towne, a Vice-President of this Society for New Hampshire, was born in Bow, N. H., October 12, 1810, and died suddenly in Boston, April 10, 1876, aged 65. He was in early life employed in farming; afterwards a merchant in Boston. He was Treasurer of the New England Historic-Genealogical Society and one of its Vice-Presidents, and an active member of the New Hampshire Historical Society; President of the Skowhegan National Bank, and the Milford Five Cent Savings Institution, and member of the New Hampshire Legislature in 1872-'73. Some years ago he purchased his father's homestead in Milford, and took a deep interest in the exhibitions of his State and county. Mr. Towne was a very useful man, and universally respected.

Bartlett Bryant, a Vice-President of this Society for the State of Vermont, was born at Hanover, New Hampshire, February 26, 1822, and died at Derby Centre, April 26, 1876. He was from early life attached to the cultivation of fruits, and feeling the need of hardy fruits in his region he established nurseries in Stanstead, Canada, and in Derby Centre and Enosburg, Vermont, introducing new fruits, and doing a large business in the distribution of hardy trees in the north and north-west, especially with regard to our colder regions. No man, says a friend, has done more in the last twenty-two years in the promulgation of choice, hardy fruits than Mr. Bryant, for which his name will be honored in our north-eastern boundaries. His success in grafting the apple on the crab stock, to prevent injuries by frost, and the planting of large orchards of the crab varieties, and other very hardy apples, is well known. He was also much engaged in stock raising, especially of fine horses, possessing nine farms, and at the time of his death, large nurseries of fruit trees. He was a benevolent man, having made donations for schools, orphan children, etc., and his loss was much deplored.

Dr. Edwin S. Hull, of Alton, Illinois, was born in Connecticut, May, 1810, and died at his residence November 8, 1875. In 1844 he removed to the famous Hull farm, near Alton. He planted large orchards of fruit trees and soon became a leader in this line. As frequently is the case in new enterprises, he met with disappointments in his culture, but, never discouraged, he contended with the evils of insects, blight, etc., ever looking forward to better results, which made him an authority on such subjects. He gave much study to the character and depredation of insects, especially the currenlio, and invented methods for its destruction. He wrote extensively on the causes of pear blight, and his efforts by root-pruning to prevent it. He aided largely in founding the Alton Horticultural Society, of which he was President: was State Pomologist; a member of our Committee on Foreign Fruits for 1867 and '68, and President of the Illinois State Horticultural Society, and for several years was horticultural editor of the *Prairie Farmer*. Many of us will remember how courteously, as President of the Illinois Horticultural Society, he welcomed us at Chicago two years since, when he said, "These meetings bring us together from the North, South, East, West, and British Provinces, to form friendships stronger than any political ties," and expressed the hope that at no distant day we should meet again. These hopes were blasted, for in a few weeks he passed into the spirit world.

Daniel Wadsworth Coit, at the time of his decease, was the oldest person who had held membership or office in our Society. He was born in Norwich, Connecticut, in 1787, and died in that city on the 18th of July, 1876, under the majestic elms where his widow now resides, in the 90th year of his age. Early in life he was engaged in New York in commercial pursuits, and highly respected as a merchant. In 1819 he went to Peru, where he resided for some seven years, in business relations with England, America and Spain, having more than once crossed the Andes, visiting the mountains and the ruined cities of the Incas. He repeatedly visited Europe, and particularly Spain, in whose schools of art he took great interest. In 1840 he returned to his native home; but just before the breaking out of the war with Mexico he went to that city, where he was established in business for awhile. From Mexico he went by way of Acapulco to California, where he was for some years engaged in business. On his return to his home at Norwich, he devoted the remainder of his life to horticultural pursuits with as much energy and enterprise as he had given to mercantile affairs. As a cultivator of fruits and flowers he was one of the most scientific and successful of our times, proving all of the novelties and retaining only those in his opinion most worthy.

He was formerly Chairman of the Fruit Committee for Connecticut. His good taste and discrimination made him an authority in the selection of the finest fruits. Mr. Coit was somewhat distinguished as an artist, and during his wanderings exercised his skill in making sketches, which are of great merit. These, together with those which he had collected in Europe and America, he left to his family, among which are views in Lima and Mexico, the ruined cities of the Incas, of the Cordilleras, and especially sketches of San Francisco, then only a group of rough huts. His skill he retained to the close of life, and his works are prized not only as mementoes but as works of art.

Dr. John Skillin Houghton, of Philadelphia, was born in Dedham, Massachusetts, October 18, 1816, and died suddenly in Philadelphia, December 11, 1876. Dr. Houghton was an active worker in the field of pomology and horticulture, and was Chairman of the State Committee for Pennsylvania from 1869 to 1873. For many years he was a zealous experimenter in fruit culture, and although he failed to make it profitable he exerted an influence that was widely felt. His pear orchard consisted at one time of many thousand trees. He experimented extensively on the cutting and pinching-in system with pears, for the production of fruit, even at the expense of the vitality of the trees. He was a great worker and an invaluable member of the Pennsylvania Horticultural Society—full of enterprise, energy and despatch—and his death was much regretted.

Nor can I close this record without recognizing the sudden death of one of our members at Chicago, whither he went to attend our meeting. I allude to Mr. Samuel H. Colton, delegate from the Worcester Horticultural Society of Massachusetts, who died at the Grand Pacific Hotel in that city, on the 13th day of September, 1876. Mr. Colton was largely interested in horticultural pursuits and formerly in the nursery business. He was an influential member of the above named Society, and for many years its treasurer. He took great pleasure in discussing and disseminating native fruits, was a frequent correspondent of horticultural journals, and for some years editor of the Massachusetts Spy. He was also a director in the Quinsigamond Bank and treasurer of the People's Fire Insurance Company, and was a gentleman of sterling worth, most amiable in his disposition and upright in all the relations of life.

Thus, three Vice-Presidents, and three others who have held official relations, have been removed since our last meeting. They have gone before us, their places have been made vacant and are now filled by others. How long we shall remain, is only known to Him who holds the issues of life in his hands. Some of our lives are wellnigh spent, and ere we meet again our sun will have set below the horizon of this world. Let then these lessons of mortality prompt us to greater diligence for the promotion of our cause.

CONCLUSION.

Standing here as conservators of American Pomology, enjoying as we do such peculiar privileges for research and discovery, let us use every effort to advance our cause by diligent experiment and observation, so that as we come up from session to session, we may add something to the common stock of information, and thus develop for the good of mankind the rich treasures which our science has in store for the world. Thus let us work on, hand in hand, to scatter these blessings broadcast through the land. Others may seek for the honors of public life or the victories of war, which too often carry with them the recollection of wounded hearts and painful disappointments. But let us continue to work on, feeling assured that our labors will cause no regret. As Mrs. Sigourney has beautifully versified my former remark—

"No sting in the bosom of memory we're leaving,
No stain on the pinion of time."

Let us commence the new century in the history of our Republic with increased enterprise and zeal for the promotion of our cause, and should any of us be called from our labors on earth, let us feel assured that others will continue the work we have begun and carry it forward to still greater perfection. Let the successes of the past stimulate us to greater exertions for the future. Let us work on, full of hope, regardless of all obstacles,

"Still achieving, still pursuing,"

until we shall reach that better land where the garden shall have no blight, fruits no decay, and where no serpent lurks beneath the bower—where harvests are not ripened by the succession of seasons—where the joys of fruition shall not be measured by the lapse of time.

REPORTS OF COMMITTEES.

Report of Committee on Constitution.

The Report of the Committee on the Constitution was presented by Mr. Barry, read and adopted. [The Constitution as so amended is printed on the foregoing pages.]

Report of Committee on Credentials.

The Committee on Credentials made a partial report, which was received and the Committee continued. The following delegates were reported:

CONNECTICUT—*Board of Agriculture*—P. M. Anger, Wm. H. Barnett, F. Trowbrige, W. H. Yeomans, H. H. Smith, D. A. Lyman.

DELAWARE—Vice-President, Randolph Peters.

DISTRICT OF COLUMBIA—*Department of Agriculture*—William Saunders. *Potomac Fruit Growers Association*—Prof. J. Brainerd, Dr. J. E. Snodgrass, John Saul, George F. Needham.

GEORGIA—*State Horticultural Society*—P. J. Berckmans, Thos. P. Janes, J. S. Newman, S. P. Jenkins, Samuel Hape. *State Agricultural Society*—P. J. Berckmans.

ILLINOIS—*State Horticultural Society*—W. C. Flagg.

INDIANA—*State Horticultural Society*—W. H. Ragan.

IOWA—*State Horticultural Society*—G. B. Brackett.

MAINE—*Pomological Society*—Henry McLaughlin.

MARYLAND—*Horticultural Society*—W. H. Perot, W. D. Brackenridge, W. B. Sands, James Pentland.

MASSACHUSETTS—*Horticultural Society*—C. M. Hovey, John B. Moore, J. W. Manning, A. D. Capen, J. A. Warder, E. H. Luke, Robert Manning, B. G. Smith, E. L. Sturtevant, Amos Bates, H. McLaughlin. *Essex Institute*—Robert Manning.

NEW JERSEY—*State Agricultural Society*—P. T. Quinn, E. Williams, E. W. Durand, B. B. Hance, Jacob R. Shotwell. *New Jersey Cranberry Association*—J. P. Trimble, Prof. Taylor, Rev. Dr. Perry. *Burlington Co. Agricultural Society*—Dr. George C. Brown, Wm. Parry. *New Jersey Horticultural Society*—George Thurber, E. W. Durand, John S. Collins, E. T. Field, E. Williams.

NEW YORK—*Horticultural Society*—Peter Henderson, Robert B. Parsons, Isaac Buchanan, Thomas Hogg, F. M. Hexamer, B. K. Bliss. *Newburg Bay Horticultural Society*—Albert Bridgeman, Charles Downing, D. A. Scott, C. Gilbert Fowler, T. S. Force, J. H. Ricketts, A. J. Caywood, E. P. Roe, Rev. Dr. Forsyth, Thomas Hogg. *Western New York Horticultural Society*—P. Barry, J. J. Thomas, H. E. Hooker, George Ellwanger, E. W. Sylvester, E. Moody, Jacob Van Gelder.

OHIO—*State Horticultural Society*—Dr. John A. Warder, George W. Campbell.

PENNSYLVANIA—*Fruit Growers' Society*—Josiah Hoopes, Thomas Meehan, H. M. Engle, A. W. Harrison, L. S. Reist, Geo. B. Thomas, Calvin Cooper, W. L. Schaffer, E. J. Evans, John I. Carter. *Pennsylvania Horticultural Society*—Robert Buist, Josiah Hoopes, Wm. L. Schaffer, J. E. Mitchell, Wm. Parry, Robert Scott, James Ritchie, Samuel Noble. *Experimental Farm Club of Eastern Pennsylvania*—George Balderston, John I. Carter, Marcellus Cook, Taylor Brown. *Lancaster Co. Agricultural and Horticultural Society*—H. M. Engle, M. D. Kendig, L. S. Reist.

RHODE ISLAND—*Agricultural Society*—Silas Moore.

SOUTH CAROLINA—R. M. Sims.

TENNESSEE—B. F. Transou.

TEXAS—*State Horticultural and Pomological Society*—William Watson.

VIRGINIA—*Norfolk Horticultural and Pomological Society*—Joseph R. Spratley, J. R. Ludlow, Albert Dodge, W. T. Bradbrook, W. S. Butt, George E. Cromwell, G. F. B. Leighton, J. L. Babcock, G. W. Briggs. *Lynchburg Pomological Society*—W. Gordon Merrick, J. Patterson. *Potomac Fruit Growers Association*—Albert Chandler.

WISCONSIN—*State Horticultural Society*—Geo. P. Peffer.

Report of Committee on Nomination of Officers.

The Report of the Committee on Nomination of Officers was presented by Mr. Hoopes, Chairman of

the Committee, and received. There being several States in which no nominations of Vice-Presidents were made, the Executive Committee was authorized to fill such vacancies and the report of the Committee was adopted. [See page 7 for list of officers.]

Report of Committee on Room.

Mr. Pentland, from the Committee on room for evening meeting, reported that Colonel Colman, of the Carrollton Hotel, would furnish the gentlemen's parlor, or a larger room if necessary.

The place of the next meeting being the next thing in order, Mr. Moody, of New York, nominated Rochester, and Transon, of Tennessee, nominated Nashville. After discussion by Messrs. Barry, Transon, Saunders, Pentland, Warder and others, a vote was had with the following result: Nashville had 34 votes and Rochester 20.

In order to secure additional funds for the Society, it was voted that the Vice-Presidents be instructed and requested to solicit memberships.

Report of General Fruit Committee.

The Report of the General Fruit Committee was read by its Chairman, Mr. Barry, received and referred back to the Committee to be prepared for publication.

Revision of Catalogue Report.

The Report of the Committee on Revision of Catalogue, was also read by Mr. Barry, accepted and referred back to the Committee for preparation for publication.

Mr. Franklin Davis, of Virginia, desired if possible that the catalogue should be so arranged as to show the varieties of fruits succeeding best in different parts of the same State; upon which subject remarks were also made by Barry, Snodgrass of the District of Columbia, the purport of which was that it was desirable but difficult.

Adjourned to meet at eight o'clock P. M., at the Carrollton.

FIRST DAY--EVENING SESSION.



Society met in the breakfast room at the Carrollton.

It was moved to reconsider the vote whereby the place of next meeting was fixed at Nashville, and after some discussion the motion was carried by a vote of 23 to 20. The question of the place of next meeting then coming under consideration, speeches were made by Messrs. Mehan, Hoopes, Schley, Quinn, Hexamer, Berckmans, Snodgrass and others, and it was finally voted to go to Nashville by a vote of 47

to 10, which, on motion of the minority, was made unanimous.

The Secretary laid before the Society a table showing the species of native and introduced fruits and nuts growing in the United States and the Provinces, which, on motion of Mr. Barry, was referred to the Committee on Catalogue, with instructions to append it to the present lists.

Adjourned until nine o'clock to-morrow.

SECOND DAY—MORNING SESSION.

The Secretary laid before the Society a letter and enclosures from Isidor Bush of the Bushberg vineyards, Missouri, addressed to President Wilder, concerning the devastations of the grape rot in Missouri. Communication was referred to the Executive Committee for action.

Discussion of Fruits.

APPLES.

The Secretary proceeded to read the list of apples.

Baltzey.—WARDER. Follows after *Maiden's Blush*; it is looked on as the *succedaneum* for it, but is not fully tested.

Bonum.—WARDER. Should be starred for Ohio.

Carolina Red June.—WATSON, of Texas. Two stars.

Dr. BRIGGS, of Virginia. No longer succeeds in Virginia.

Chenango Strawberry.—BARRY, of New York. Very popular in Western New York for market.

WARDER. Only suited to near markets.

Cooper's Market.—NOBLE, of New Jersey. *Cooper's Market* is known as *Rigley*.

Cornell's Fancy.—BALDERSTON, of Maryland. Two stars for Maryland, Northern and Western.

BARRY. Do not early varieties succeed in all parts of the State?

NOBLE. A native of Bucks County, Virginia.

Cracking.—WARDER.—A poor tree: dies as soon as it begins to bear.

BRACKETT, of Iowa. It does well in Central Iowa, but has been struck from the State list.

Cullasaga.—WATSON. Two stars for Texas.

MYERS, of Delaware. Two stars.

Danvers' Winter Sweet.—ROGERS, of Maryland. Of no account here.

Duchesse of Oldenburg.—WATSON. One star for Texas.

BARRY. Destined to be the most popular apple everywhere.

Dyer.—WATSON. Two stars for Texas.

Early Strawberry.—TROWBRIDGE, of Connecticut. Very poor in Connecticut.

Edwards' Early.—HOWLAND, of Virginia. Does well in Virginia.

PARRY, of New Jersey. Does well, and should be starred for New Jersey.

Ewalt.—WARDER. Should be starred for Ohio.

ENGLE. Valuable in Pennsylvania.

Fallowater.—COOK, of Pennsylvania. Should be grafted on natural trees at shoulder height.

ENGLE. Suffers from the stem cracking.

Full Queen, or *Haas*.—PEFFER, of Wisconsin. One star for Wisconsin.

BARRY. It is recommended at the South and North. I think there must be two varieties.

PEFFER. The *Haas* is an upright tree and a fast grower.

WARDER. The young trees of *Full Queen* are upright and afterwards spreading: they are similar to the *Buckingham*. The leaf is peculiar.

Faneuse.—PEFFER. Two stars for Wisconsin.

Fourth of July.—WARDER. Very like *Tetofsky*.

BARRY. It is a better grower than *Tetofsky*.

Gilpin.—ROGERS. Two stars for Maryland.

Goff.—BRACKETT. On trial in Iowa.

Golden Russet of New York.—PEFFER. Two stars for Wisconsin.

Grimes' Golden.—HOOPES. One star for Pennsylvania.

PARRY. Ditto for New Jersey.

BALDERSTON. Same for Maryland.

Hall.—WARDER. Synonym *Hall's Red*. Too small.

Hamilton.—WARDER. Very superior.

Horse.—RAGAN, of Indiana. One star for Indiana. Now in season. A good keeper for a summer apple.

Hoover.—WATSON.—One star for Texas.

Hubbardston Nonsuch.—PARRY. One star for New Jersey.

COOK, of Pennsylvania. Also for Pennsylvania.

Hunt Russet.—BARRY. *Golden Russet of Massa-*

chusetts is placed as synonym; R. Manning thinks it is not; Hovey thinks it is.

Jefferson County.—BRACKETT. Strike out for Iowa.

Jeffers.—HOOPES. One of the very finest Two stars.

COOK. I indorse it for Pennsylvania.

Jewett's Fine Red.—BRACKETT. Strike out for Iowa.

Jonathan.—WARDER. Two stars for Ohio.

Julian.—WATSON. Two stars for Texas.

Keswick Codlin.—RAGAN. Drop one of the two stars for Indiana.

Key's Fall.—BARRY. In much confusion. It is called also *Key's White* and *Key's Winter*.

Kirkbride White.—BRACKETT. Strike out for Iowa.

Lady Apple.—BALDERSTON, of Maryland. Only bears once in fifteen years.

ROGERS, of Maryland. Does well in Maryland.

SNODGRASS. Star for Virginia.

BARRY. Valuable in Western New York. Was sold as high as sixteen dollars per barrel, and seldom for less than ten.

ENGLE, of Pennsylvania. Sometimes overbears.

HOOPES. Very unprofitable unless manured heavily and cultivated highly.

Lansingbury.—WARDER. One star for Ohio.

RAGAN. Same for Indiana.

Lawver.—MYERS, of Delaware. One star for Western Delaware. Has borne only one year.

BARRY. It is only on trial, being a new variety.

WARDER. Very beautiful.

Limbertwig.—RAGAN. Strike out for Indiana.

HOWLAND. One star for Virginia.

Loudon Pippin.—FLAGG. This name is properly *Loudoun Pippin*.

Major.—ENGLE. Not yet much disseminated. Very fine.

HOOPES.—Very promising. Very beautiful. Not to be mistaken for *Pennock* or *Dominie*.

McAfee's Nonsuch.—WARDER. Known in Ohio as *Large Striped Pearmain*.

RAGAN.—My father had much correspondence with Dr. Howsley; agreed it should be *McAfee's Nonsuch*.

Melon.—WARDER. One star for Ohio.

Michael Henry Pippin.—SNODGRASS. What is *Michael Henry Pippin*?

BARRY.—It is described by Cox, and is well known as an old apple.

FLAGG.—Has been confused with *White Winter Pearmain*.

DOWNING.—Recommends to strike from the list, and Barry agrees with him.

Milam.—WARDER. Let it stand for Ohio.

Newtown Pippin.—WARDER. Why *Newtown Pippin*, all under one head and number? There are two distinct ones. *Brookes' Pippin* answers to *Green*, and *Albemarle* to *Yellow Newtown Pippin*.

ROGERS.—One star for Maryland. I agree with Dr. Warder.

BARRY.—Variety was so placed for the sake of harmony.

On motion of Dr. Warder the subject of one or two *Newtown Pippins* was referred to the Committee on Synonyms.

Nickajack.—ENGLE. Hope it will not be starred for Pennsylvania.

WARDER.—One star for Ohio. Thrifty tree.

Northern Spy.—BALDERSTON. Not worth keeping in tide water Maryland. Rots worse than *King*.

AUGUR, of Connecticut. When in perfection, of superior quality, but rarely profitable. Subject to *eurelio* and rot. Some trees fifteen to twenty years old just beginning to bear.

BARRY.—That is about the usual time when they begin to bear full crops—fifteen years.

J. J. THOMAS.—Had a tree nine years old bear eighteen bushels of fruit.

BISSELL, of Virginia.—In Piedmont, Virginia, it bears well.

RAGAN.—Two stars for Indiana.

SNODGRASS.—Does well in Virginia. Entitled to at least one star. Shows well on table.

Hovey, of Massachusetts.—It will not do to be hasty in condemning *Dir* and other tardy bearing pears, or *Northern Spy*.

PEFFER.—In Wisconsin they commence bearing at from twelve to fifteen years of age; bear a few crops and die—I think from over bearing. When the limbs are well spread out they will bear in five or six years. It is their nature to grow long and then come into bearing. The fruit should be thinned when too full in order to save the tree.

Pewaukee.—PEFFER. Good for one star yet, in Wisconsin.

Pomme Grise.—AUGUR. One star for Connecticut.

Primate.—WATSON. One star for Texas.

Pryor's Red.—WARDER. Gone out in Kentucky. Going out in Ohio, owing to leaf malady. No tree has suffered so much. When the foliage is gone in August the fruit suffers. It may be grafted to other varieties.

BRACKETT.—Strike out the one star for Iowa.

RAGAN.—The same for Indiana. We are loth to do it.

Porter.—NOBLE. One star for Pennsylvania.

PARRY.—One for New Jersey.

Rawles' Genet.—WATSON. Star for Texas.

Red Astrachan.—MYERS, of Delaware. Star.

BARRY.—It succeeds wherever any apple will grow.

ENGLE.—A neighbor of mine planted twenty or thirty trees and cut them all away. They did not bear.

NOBLE.—Would recommend only one star for Pennsylvania.

Red Canada.—AUGUR. One star for Connecticut.

Red Crab.—WARDER. Great improvement on *Hewes'* for cider. It is not a Crab properly; bears earlier than *Hewes'* and is much larger. The Cider equally good.

Red Stripe.—BRACKETT. Two stars for Iowa.

Rhode Island Greening.—WARDER. I do not know why *Rhode Island Greening* has two stars for Ohio. It is not good in Central and Southern Ohio. It should have only one star.

Robertson's Superb.—BARRY. It should be *Robinson's Superb*.

Rock Pippin.—WARDER. Long keeper.

Shiawassee Beauty.—BARRY. It is of the *Fumeuse* character, and is very promising.

Smith's Cider.—SNODGRASS. My neighbor says, "plant seventy-five out of one hundred of this variety." Two stars for Virginia.

BALDERSTON, of Maryland.—It has been attacked by disease or insect, and can be told by the dead limbs in several counties. The disease seems to be confined to this variety. (Note. *Smith's Cider* is one of the varieties of apples most subject to blight in the North-west. Sec.).

MYERS.—The fruit is in great demand for drying.

Smokehouse.—PARRY. Should have one star for New Jersey.

ENGLE.—Two stars for Pennsylvania.

NOBLE.—Not a profitable apple, but otherwise good.

COOK.—Two stars for Pennsylvania. It is a good bearer in Chester County.

BALDERSTON.—Good for local market. Could not be sent to Baltimore.

Stark.—BARRY. It is distinct from *Pennock*.

HOVEY.—I would like to have the synonymy of the *Stark* and *Baldwin* looked into.

WARDER.—It is not valuable enough to recommend.

Summer Hugloc.—NOBLE. One star for Pennsylvania.

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

BARRY.—Splendid apple tree, a slow, erect grower with large foliage.

RAGAN.—One star for Indiana.

Summer Queen.—TROWBRIDGE. One star for Connecticut.

Summer Pound Royal.—WARDER. Known as *Pound Royal*; not *Summer*.

Teekesbury Winter Blush.—NEEDHAM of Virginia. One star.

SNODGRASS.—One star for Virginia.

Twenty Ounce Apple.—RAGAN. Strike out one of the stars for Indiana.

Wealthy.—PEFFER. Ranks next to *Duchess of Oldenburgh*. Two stars for Wisconsin. Tree is a fine grower.

BARRY.—Resembles the *Duchess of Oldenburgh*.

Winesap.—BURRELL, of Virginia.—Two stars for Virginia.

HOWLAND.—The Potomac Fruit Growers Association place it at the head.

COOK.—It continues to be the "Never fail."

PARRY.—One star for New Jersey.

Talman's Sweet.—J. J. THOMAS. A foot note in catalogue says, "valuable for stock feeding." The foot note should be removed.

BARRY.—It was placed there by Elliott. The question of removal has been up before.

WARDER.—In my latitude no man thinks of eating the *Talman*, but it is grown largely for stock.

HARRISON, of Penn.—I eat the *Talman* when baked, and never eat any other apple if I can get it.

MOODY.—Would like to have one thousand bushels of *Talman's*, and they would not be fed to cattle: children love them.

HOWLAND, of Virginia.—I cannot raise them.

WARDER.—There are other sweet apples valuable for stock. In my latitude people do not eat sweet apples.

RAGAN.—Hogs that have had the range of orchards have not been affected with cholera.

The foot notes, on motion of Quinn, of New Jersey, were referred to the Committee on Revision of Catalogue.

Crabs.—BALDERSTON. Why is so little said of Crabs?

BARRY.—Little is yet known of them, except of the old and popular ones, such as *Hyslop*, *Transcendent*, &c.

PEFFER.—There are in Wisconsin one hundred varieties ahead of *Hyslop* and *Transcendent*. There are twenty sweet ones. They are Hybrids mostly, and nearly as large as other apples. Some fully as valuable as other apples for eating.

HOVEY.—I would suggest that a foot note be added, that Crabs are only valuable where nothing else can be grown.

NEW APPLES.

Clark's Orange.—PEFFER. Went through a trial of five years. Is ripe in mid-winter. It is round, greenish and resembles the *Belmont*.

APRICOTS.

HOWLAND, of Virginia.—I have set out three thousand trees, and only eight hundred are alive. They have been an entire failure, on Peach and on Plum stocks, and on Apricots. I cannot ascertain the cause. They will bring five to ten dollars a bushel wholesale.

BARRY.—*St. Ambrose* is new and hardy. It ripens at the same time with *Early Golden*, and is equally hardy.

AUGUR, of Conn.—I get a good crop of *Early Golden* once in two or three years.

PARRY, of New Jersey.—The *Large Early* did well in the yard nailed to the house. One hundred trees in the orchard did nothing.

J. J. THOMAS.—I was familiar with an Apricot orchard forty years ago which bore by the cart load. Now we cannot get them.

ROGERS, of Maryland.—They grow six inches in circumference on the eastern shore, and the tree forty feet high, but they suffer from *eureulio*.

HOVEY, of Mass.—The trees are subject to injury by spring frost.

QUINN, of New Jersey.—Apricots fail without apparent cause.

SAUL, of the District of Columbia.—They are grown in perfection in some of the counties at the mouth of the Potomac. They are grown natural from selected seed. The dying off of the trees is not new. They die on walls in Europe. Also on the continent of Europe when grown in quantity.

HOWLAND.—I have tried many experiments. I have planted one thousand in a dense forest of Cedar.

SNODGRASS.—In Persia they are grown in small valleys. I would suggest that Mr. Howland plant in such localities instead of on the hill-tops.

BARRY.—They bear large crops in sheltered gardens and trained on south walls in Rochester.

SAUL.—I do not think the climate of Dr. Howland's location favorable to the Apricot, which is a native of the Levant.

CAMPBELL, of Ohio.—Only one star for *Large Early* in Ohio.

BLACKBERRIES.

MYERS, of Delaware.—*Wilson's Early* is failing in Southern Delaware.

WARDER.—Failure in bearing by the doubling of the flowers is common.

HEXAMER, New York.—Only one star for *Wilson* in New York.

PARRY, of New Jersey.—This is a very important fruit. If varieties do not succeed, new ones should be originated. The *Snyder* I have found perfectly healthy and hardy. The *Taylor* has never winter-killed. The *Wallace* is free from all insects and injury.

RAGAN, of Indiana.—*Snyder* and *Taylor* are natives of Indiana. I am favorably impressed with the *Snyder*. It is extremely hardy. *Taylor* is immensely productive, but looked rather seedy and dry.

SILVESTER, of New York.—*Snyder* is of fair quality and hardy, but not above half the size of *Kittatinny*.

HEXAMER.—*Snyder* is the hardiest of all, but too small for market. It is earlier than *Kittatinny* or *Dorchester*. A good family fruit. A strong grower, but not too much so.

HOVEY.—I would not add to the list of small fruits if the new were not superior to the old ones.

The Secretary inquired about orange rust.

PARRY.—I have suffered from it. The only remedy is to get new varieties which are free from it. The *Wilson* and *Snyder* do not suffer. The *Kittatinny* and *Dorchester* are affected with it most.

HOVEY.—The *Holcomb*, from Dr. Dewey, is better than *Lawton* or *Dorchester*. Very hardy, later than *Dorchester* and sweeter.

WILLIAMS, of New Jersey.—*Kittatinny* stands highest with New Jersey Horticultural Society. *Snyder* is adopted for trial.

AUGUR.—*Kittatinny* is preferred in Michigan except for the Orange Rust.

COLLINS, of New Jersey.—I think *Wilson* hard to beat. Five bushels are sent to Philadelphia market to one of all other kinds. One plantation of sixty acres produces good crops in spite of double blossom. Great quantities are sent to New York market. Old plantations winter-kill. One of the best is on high clay and gravel soil.

SYLVESTER.—It is too tender for Western New York.

CHERRIES.

Black Eagle.—ENGLE. Succeeds and is profitable in Pennsylvania.

SYLVESTER.—Gives satisfaction in Western New York.

Black Heart.—BERCKMANS. One of the best in Georgia. Is *Werder's Early Black* synonymous? Referred to Committee on Synonyms.

Butner's Yellow.—BERCKMANS. One of the sweetest of all early cherries.

Early Richmond.—BARRY. The name of *Early May* was dropped because it was supposed to be a synonym of *Early Richmond*, the weight of testimony being in favor of that course.

Gov. Wood.—ROGERS, of Maryland. Two stars for Maryland.

Hovey.—HOVEY. The *Hovey* cherry is distinct from the *Napoleon*.

Late Kentish.—BARRY. Supposed to be that known as the *Common Pie Cherry*.

SNODGRASS.—Two stars for *Late Kentish* for Virginia.

Reine Hortense.—ROGERS, of Maryland. Two stars for Maryland.

NEW VARIETIES.

Empress Eugenie.—BERCKMANS. A variety of *May Duke*, and superior in quality; very dwarf and not fit for orchards; adapted to gardens.

SAUL.—My experience is the same. It is very productive. Trees two years old, in the nursery, are loaded with fruit.

Russian Cherry.—ENGLE. We have a variety decidedly different from *Black Tartarian*, later and more hardy, but in flesh and quality similar to *Black Tartarian*.

Richardson Cherry.—HOVEY. This is a variety which appeared to be distinct from the *Black Tartarian*, and one of the finest I ever saw; but the birds take all the fruit.

A pamphlet by Prof. Brainerd, of Washington, D. C., on Pear Blight, was presented and referred to the Executive Committee.

Invitations were received inviting the attendance of members at the coming fairs and meetings of the New Jersey Agricultural Society, the New York Agricultural Society, the Massachusetts Horticultural Society and the Potomac Fruit Growers' Association.

Adjourned until 3 o'clock P. M.

SECOND DAY-AFTERNOON SESSION.

Vice-President Warder in the Chair.

The presiding officer announced that the breakfast room at the Carrollton had been secured for the evening meeting.

CURRANTS.

Cherry.—COOK, of Pennsylvania. Has succeeded admirably with me.

Lee's New Black.—SAUL, of D. C. I would suggest *Lee's New Black*, an English variety with larger bunches than the *Black Naples*, though it may prove to be an old sort under a new name. It is distinct from any on the catalogue, and should be added to the list for the District of Columbia.

Prince Albert.—BARRY. Is a very late variety, quite distinct in foliage and fruit.

GOOSEBERRIES.

Pale Red.—BARRY. Is confounded with *Houghton*, but is distinct and of upright growth.

Orange.—ENGLE. Originated in my neighborhood. I think very highly of it. Of orange color.

Early Kent.—SAUL. Originated in Kent County, Maryland. Of much merit. A little larger than the *Houghton*; of the same color and better quality.

PLUMS.

Chickasaw.—The Secretary suggested the propriety of omitting *Chickasaw*, which is the name of a species of which there are several varieties now upon our list.

WARDER.—The *Chickasaw* in Northern Illinois is not the *Prunus Chickasa*.

TRANSOU, of Tennessee.—The *Chickasaw*, erroneously so called, is not of the species.

FLAGG.—The prevailing type of wild plum in my region is the *Prunus Americana*. But the peach leaved sort, wherever I have seen it in our State, is one variety or another of the *Prunus Chickasa*.

TRANSOU.—The *Cowawa* is of the *Chickasaw* type, but quite distinct from the variety known as *Chickasaw*. It is probably a seedling of the *Chickasaw*. It is little injured by the curculio.

German Prune.—COOK. Wants to be starred for Pennsylvania.

ENGLE.—Indorses the opinion.

Huling's Superb.—SAUL. It grows and blooms profusely but I can get no fruit.

THOMAS.—I have a large tree 16 years old but it bears very little fruit.

BARRY.—Fruit and foliage are of immense size, and with us it bears fair crops.

Shropshire Damson.—SAUL. The plum shown at the Centennial last year as *Shropshire Damson* is not the true one.

WARDER.—The tree is larger than that of the old variety: clingstone and an immense bearer. I would change the dagger to a star for Ohio.

Peach.—BARRY. A splendid fruit, but the tree a little tender. Many erroneous varieties are disseminated under this name.

Wild Goose.—HAPE, of Georgia. Curculio proof and reproduces itself from seed. All of the types succeed in my locality. Color yellowish red.

THOMAS.—Much better in New York than I expected. The curculio stings it all over but never gets the twentieth of an inch inside. Will ripen after being picked a week. I would not class it higher than good.

HAPE.—It takes kindly to the peach stock.

MYERS, of Delaware.—With me, killed in the blossom. Valuable for market if I could grow it.

TRANSOU.—The most valuable plum we have. Brought six to eight dollars per bushel. Regard it as very good.

SAUL.—Bears early and abundantly and is simply good.

WARDER.—I cannot conceive of classifying an American plum as even good. The *Wild Goose* comes to Cincinnati by car loads and brings good prices.

TRANSOU.—Plums as well as apples differ much in quality according to location.

QUINCES.

Red's Seedling.—HAPE.—Promises well in Georgia. Not so easy to propagate, but a decided improvement on the *Apple* quince.

RASPBERRIES.

Calawissa.—SAUL. Would strike out *Calawissa* for the District of Columbia.

HARRISON.—Have had two crops lapping over; the quality not fine, but better than the *Black Caps*.

ENGLE.—Would not star it for Pennsylvania.

Clarke.—COOK, of Pennsylvania. I would strike out the star for *Clarke*.

BERCKMANS.—Ditto for Georgia.

Davison's Thornless.—HAPE. Worthless in Georgia. *Golden Thornless* the same.

THOMAS, of New York.—Fruit good for nothing.

BERCKMANS.—Raspberries in Georgia are restricted to three kinds: *Doolittle*, *Imperial Red*, and a nameless variety of the *Purple Cane* family.

Herstine.—COOK, of Pennsylvania. Succeeds well.

THOMAS.—Star for New York.

SAUL.—Ditto for the District.

WARDER.—Same for Ohio.

Hudson River Antwerp.—SAUL. Strike out star for District of Columbia.

SIMS, of South Carolina.—It gives satisfaction in the middle region of South Carolina.

THOMAS.—One star for New York is enough.

BARRY.—I prefer it to any other variety in my own garden.

CAYWOOD.—It is more largely planted than any other variety in the highlands of the Hudson.

Ohio Everbearing.—WARDER. Has almost disappeared. Many better varieties have originated from it.

BERCKMANS.—The *Purple Cane* is a type; it produces many varieties.

WARDER.—It is a variety of the *Rubus occidentalis*. Do not consider the variation worthy of notice.

BERCKMANS.—The *Philadelphia* is one of this class.

WARDER.—The *Philadelphia* does not belong even to the species.

CAYWOOD.—The *Purple Cane* roots from the tip. The *Philadelphia* does not.

FLAGG.—One star for *Turner* for Illinois.

COOK.—One star for *Brandywine* for Pennsylvania.

SAUL.—One star for District of Columbia.

PETERS, of Delaware.—Two stars for Delaware.

COLLINS, of New Jersey.—None do better in New Jersey. *Early Prolific* and *Rehama* promise well. In New Jersey they are both of better flavor than *Brandywine*, but are not so good everywhere. They are seedlings of the *Philadelphia*.

PETERS.—The *Brandywine* was first put out as the *Susqueco*, which is the Indian name of the river.

Mr. COLLINS named *Henrietta* as on exhibition from Connecticut.

PEACHES.

Amelia.—BERCKMANS. The *Amelia* is that known as *Orangeburg*. It is not the *Amelia* of Missouri. It has half a dozen synonyms. Is not fit for shipping. There are none superior in size or appearance. Second quality.

Austin's Red.—BERCKMANS. One of the best October clings.

Baldwin's Late.—Is the same, only a free-stone. It is reproduced from seed, and has been improved in size and flavor.

Barnard.—BERCKMANS. Would strike out *Barnard* for Georgia.

Beers' Smock.—ENGLE. One star for Pennsylvania.

PETERS.—One star for Delaware.

SAUL.—Of no value in the District of Columbia.

PETERS.—I think the *Beers' Smock* and the *Small Smock* the same.

ENGLE.—I think they are distinct.

BERCKMANS.—Knows an orchard of several hundred trees raised from seed.

MEYERS.—The difference is that *Beers' Smock* is slightly larger, but not so highly colored.

WARDER. One star for *Beers' Smock* for Ohio.

Bordeaux Cling.—BERCKMANS. Second quality; excellent market peach.

Chinese Cling.—BERCKMANS. Has been improved in Georgia. It is a strain. I have varieties ripening in succession from July 1st to the end of August—white flesh, yellow flesh; also freestones. The original kind is discarded. It is a poor grower, and rots.

SIMS, of South Carolina.—The general objection is that it is a poor bearer. It is a capital strain, and some of the seedlings are superior to the type.

HARRISON, of Pennsylvania. Think it would be better not to take up any fruit that has not yet received a name.

HAFE.—I would be in favor of removing one star from *Chinese Cling* for Georgia.

TRANSOU.—Stands to two stars in Tennessee. It is very popular and most excellent.

Cole's Early Red.—SAUL. Strike out star for District of Columbia.

BERCKMANS.—The list of peaches needs revision. It was made out years ago. There has been wonderful progress in the last five years. The peach season in Georgia lasts five months.

Columbia.—BERCKMANS. This is named for the county in Georgia where the variety originated. The stump lasted until twenty years ago. Millions have been propagated from it. It reproduces itself from the seed. It has thousands of names in Georgia, Alabama, Mississippi, Louisiana and Texas. The original name was *Pace* peach. Some varieties ripen in July and others keep till October. *Oseeola* is a fine variety of this strain.

FLAGG.—*Columbia* proper ripens with me from the 1st to the 10th of September. I have raised a hundred seedlings, varying in season, color and size, but all are essentially *Columbias*.

BERCKMANS.—We make up in *Columbia* what we lose on early peaches.

SCHLEY.—Very meritorious, but coarse, astringent, showy.

WARDER.—It is well known in Ohio. One star for Ohio.

SAUL.—One star for District of Columbia.

Coolidge's Favorite.—BERCKMANS. Strike off for Georgia.

TRANSOU.—The tree does not appear thrifty and hardy. The fruit is good.

DOWNING, of New York.—Says the same. The twigs often die.

Crawford's Late.—MYERS, of Delaware. I would like to give three stars for Southern Delaware.

BERCKMANS.—One star for Georgia.

Deming's Orange.—BERCKMANS. Same as *Lemon Cling*, but ripens in September.

Early Beatrice.—HAFE. It ships well. Ripens 16th of June; *Amsden* and *Alexander* on the 10th.

BERCKMANS.—It is in shipping order May 23d.

HAFE.—It is ripe May 26th on Chattahoochie river.

SAUL.—It is ripe in the District of Columbia June 20th.

MYERS.—In Southern Delaware from July 15th to 18th. Will bear more forcing than any other variety.

COL. DANIELS, of Virginia.—Very hardy; it bore abundantly when others were killed.

PETERS.—Orchard of 4,000 trees; productive; must be thinned. Will turn red when half grown. Is not as early as *Alexander* or *Amsden*, but will do to ship as early. Buyers soon get tired of such fruit.

Early Louise.—HAPE. It ripens June 23d. Is superior to *Beatrice*, but not so good for shipping.

BERCKMANS.—A little better than *Beatrice*; considerably larger. Not a shipping peach.

MYERS.—I kept *Beatrice* and *Louise* nine days. The *Louise* not so profitable as *Beatrice*: from three to five days later.

Early Rivers.—BERCKMANS. The best of Rivers' peaches in size and quality, but not so good for shipping. Ten and one-half inches in circumference. From seven to ten days after *Beatrice*. In eating condition before *Hale's* commences.

HAPE.—Concurs with Berckmans. Ripe June 26th, three days before *Hale's*.

SAUL.—The relative time of ripening is the same with me.

Flewollen.—BERCKMANS. It is a clingstone of the *Indian* type. It ships well.

Foster.—BERCKMANS. Similar to *Crawford's Early*, only three days earlier.

Haines' Early Red.—SAUL, District of Columbia, and

BERCKMANS, Georgia, would strike this out.

Hale's Early.—BERCKMANS. More money was made on this than on all others, this year in Georgia. Never missed but one crop in eleven years. Measured nine inches as early as June 16. Sold for nine dollars in New York. Have had them ripen as early as the 18th of June.

SCHLEY.—It does splendidly on the sea-coast.

BERCKMANS.—From the 18th of June to the 18th of August.

TRANSOU.—We have discarded it. It is fine and handsome, but rots. Would strike out both stars.

ENGLE.—Would strike out for Pennsylvania.

MYERS.—No star for Southern Delaware.

BERCKMANS.—It always comes up, and the more we talk the less we know of it. The crop is spoiled by high culture and manuring; the fruit rots. In a good year like this, when it hits, there is no more money in any variety. The conclusion in Georgia is, that there is as yet no peach more desirable for shipping, in Middle Georgia.

ROGERS, Maryland.—Some discrepancy in Maryland.

TRANSOU.—Would not strike it off the list for Tennessee, for there are some parts of the State in which it succeeds.

Heath Cling.—ROGERS. This peach is a native of Maryland.

Jacques.—BERCKMANS. Strike out for Georgia.

Kenrick's Heath.—BERCKMANS. This and *Lagrange* are synonyms.

FLAGG.—*Kenrick's Heath* is earlier than *Lagrange*.

HOVEY.—Thinks them distinct.

Lady Parham.—BERCKMANS. A very fine late peach.

Late Admirable.—BERCKMANS. One star for Middle Georgia, for home use.

Leopold I.—BERCKMANS. A dry, mealy free-stone. Strike out for Georgia.

Mitchell's Mammoth.—BERCKMANS. A reproduction of *Heath Cling*.

Morris' White.—PETERS.—Strike it out for Delaware; it cracks and rots badly.

ENGLE.—Strike it off for Pennsylvania.

Mountain Rose.—PETERS. I consider this one of the best. It ripens a few days after *Troth's Early*, and is now superseding it. It is extremely productive. As large in good culture as *Oldmixon Free*, and much the same in appearance. It ripens before *Large Early York*. Two stars for Delaware.

ENGLE.—One of the most valuable peaches. One star for Pennsylvania.

BERCKMANS.—Add one star for Georgia.

QUINN.—One star for New Jersey.

FIELD, of New Jersey.—It is becoming a leading variety for productiveness. A little smaller than the *Large Early York*, and a little earlier.

Noblesse.—BERCKMANS. One of the finest peaches, but very little cultivated.

SAUL.—I agree with Mr. Berckmans.

Oldmixon Free.—BERCKMANS. We have a variety grown by a successful cultivator in Georgia, distinct from the true kind.

WARDER.—One more upright and superior to the other.

PETERS.—*Moore's Favorite* ripens three days earlier than *Oldmixon*. *Oldmixon* leaves fade red; *Moore's Favorite* fade yellow; both ripen after *Crawford's Early*. Every twelve miles north or south makes a difference of a day in ripening peaches.

BERCKMANS.—Two or three days' difference in getting fruit into market is of great importance.

Salway and *Smock*.—BERCKMANS.—I have abandoned these in favor of *Picquel's Late*.

MYERS.—*Picquel's* is not even promising.

Reeves' Favorite.—PETERS. One of the finest peaches on the list. It has a large stone, but brings a good price.

BERCKMANS.—I fruited it six years and thought very little of it till this year; now I think very highly of it.

Scott's October.—BERCKMANS. A very late Cling, only fit for the South.

Stump the World.—BERCKMANS. One of the finest shipping peaches.

COL. DANIELS.—It does well in Fairfax County, Virginia.

FIELD, New Jersey.—It does well with us.

Susquehanna.—BERCKMANS. A splendid peach.

ROGERS.—Magnificent in Maryland.

SAUL.—Fine in District of Columbia, but a shy bearer.

MYERS.—It is thought by some superior to *Reeves' Favorite*.

ENGLE.—Sometimes a poor bearer, but unrivalled.

COL. DANIELS.—It is a shy bearer.

Tippecanoe.—BERCKMANS. Strike it off.

Troth's Early.—BERCKMANS. This peach is superseded by *Tillotson's*.

MYERS.—In Southern Delaware it is the most profitable of all.

ROGERS.—I could not be persuaded to abandon it, in Maryland.

SAUL.—I concur with Rogers.

COL. DANIELS.—Also concurs with Rogers.

TRANSOU.—It is fine in Tennessee.

Tuskena Cling.—BERCKMANS. This is a *Lemon Cling*, ripening as early as *Early Tillotson*. Two stars for middle region of Georgia.

Van Zandt's Superb.—PETERS. Too tender for anything; fruit too soft.

Ward's Late Free.—PETERS. This was formerly very popular, but now sheds its fruit. *Crawford's Late* and *Stump the World* both lap on to it.

White Imperial.—BERCKMANS. This, as disseminated from South Carolina, is *Health Cling*.

Yellow Alberge.—ELLWANGER. This is entirely distinct from *Jacques*. The latter is larger and redder.

Yellow St. John.—BERCKMANS. This ripens sometimes as early as *Early Tillotson*, and lasts longer. Is as large as *Early Crawford*. It is the earliest yellow freestone peach. It originated in Louisiana many years ago.

Adjourned till 8 P. M.

SECOND DAY—EVENING SESSION.

The Report of the Committee on Fruits on Exhibition was made by Mr. Berckmans. The Committee was continued and granted further time to finish their report.

Report of the Committee on Fruits Exhibited.

To the President and Members of the Pomological Society:

Your Committee beg leave to report as follows:

GRAPES.

Dr. Wm. A. M. Culbert, Newburgh, N. Y., exhibited six varieties of hybrid seedling grapes, very promising. Especial mention of *Early Dawn* and *Muscat of Newburgh*.

H. E. Hooker and C. M. Hooker, Rochester, N. Y., each two plates of *Brighton*. Very good.

James H. Ricketts, Newburgh, 64 varieties; most promising of the new ones are No. 305 and *Hybrid*

Concord; leaves shining, strong pubescence; Exotic seedling; parentage, *Pope's Hamburg* and *Cannon Hall Muscat*; No. 331, II. *Concord* and *Herbent Seedling*, most of which have heretofore been exhibited; promising for wine: No. 364, *Hybrid Clinton* and *Muscat*.

W. N. Barnett, West Haven, Conn., 22 varieties, some of which had been buried in sand and corn stalks about three weeks and remained in good condition.

Ellwanger & Barry, Rochester, N. Y. 23 varieties.

A. J. Caywood, Marlboro, N. Y. Seedling grape *Duchess*; color light green, promising.

John B. Moore, Concord, Mass. *Moore's Early*; promising early variety for northern latitudes.

W. D. Brackenridge, Govanstown, Md., five plates of grapes.

Dr. I. D. Thomson, Baltimore, fourteen vats of grapes.

Gen. L. Geddings, Annapolis Md., five plates *Concord*.

Exhibit No. 120, twenty-two plates.

Wm. S. Walter, Baltimore. A number of varieties of foreign grapes.

APPLES.

J. W. Kerr, Denton, Md., eighteen plates.

Geo. Balderston, Colera, Md., forty-six plates.

Pennsylvania Eastern Experimental Farm Club, West Grove, Pa., 86 varieties.

Franklin Davis & Co., Richmond. — plates.

James Fitz, Keswick, Va., one plate.

S. F. Jenkins, Cuthbert, Ga., one dish *Equinately*, well grown for so far South.

Wm. Gordon Merrick, Glendower, Va., seventeen plates.

Henry McLaughlin, Bangor, Me., fifteen plates.

PEARS.

G. F. B. Leighton, Norfolk, Va., eighteen plates *Duchesse, Bartlett and Seckel*. Very fine.

Wm. B. Weeks, Norfolk, Va., five plates *Sheldon*. Very fine.

J. H. Rowland, Norfolk, Va., two plates.

Wm. Fultz, Norfolk, Va., two plates.

Judge Geo. Bloom, Norfolk, Va., one plate.

C. F. M. Spotswood, Norfolk, Va., one plate.

Mrs. F. A. Hudgins, Hampton, Va., two plates.

Pennsylvania Eastern Experimental Farm Club, West Grove, Pa. 40 varieties.

F. Davis & Co., Richmond, Va. — plates.

R. S. Emery, Chestertown, Md., twenty-one plates.

Brace & Davis, Baltimore, Md., two plates *Duchesse*.

F. K. Steele, Annapolis, Md., plates.

Col. B. F. Taylor, Baltimore Co., Md., two plates.

Gen. L. Geddings, Annapolis, Md., three plates.

John Saul, Washington, D. C., ninety-six plates.

W. D. Brackenridge, Govanstown, Md., forty-seven plates.

Marshall P. Wilder, President of the Society, Boston, Mass., three hundred ten plates.

Ellwanger & Barry, Rochester, N. Y., one hundred sixty-seven plates.

H. M. Engle & Son, Marietta, Pa., sixteen plates

Dr. S. C. White, Matthews Co., Va., one plate.

D. S. Myers, Bridgeville, Del., one plate.

Wm. Fowler, Clifton, Md., twenty plates.

W. Gordon Merrick, Glendower, Va., two plates.

Benj. G. Smith, Cambridge, Mass., eighty-two plates.

Henry McLaughlin, Bangor, Me., eighteen plates.

Hovey & Co., Boston, Mass., one hundred thirty-nine plates.

PEACHES.

J. W. Kerr, Denton, Md., eighteen plates.

D. S. Myers, Bridgeville, Del., five plates.

F. Davis & Co., Richmond, Va. — plates.

Chas. L. Oudenslenys, Baltimore, Md., plate.

Gen. L. Geddings, Annapolis, Md., two plates.

W. D. Brackenridge, Govanstown, Md., twelve plates.

Wm. Gordon Merrick, Glendower, Va., one plate.

PLUMS.

Ellwanger & Barry, Rochester, N. Y., sixty varieties.

J. W. Kerr, Denton, Md., one plate.

FIGS.

Wm. Fowler, Clifton, Md., one plate.

Botanic Gardens, Washington, D. C. Collection of figs: one plate of East India mangoes.

The Committee regret to have been compelled to omit several exhibits which were without either names or numbers. Respectfully submitted.

BALTIMORE, Md., September 12th, 1877.

P. J. BERCKMANS,

GEO. B. THOMAS,

CHAS. DOWNING.

Pears exhibited by Mr. Edmund L. Rogers, of Baltimore, Md., 10 varieties:

Duchesse, Echasserie, St. Germain, Fulton, Henkel, Gen. Taylor, Fortune, Passe Colmar, Urbaniste, Winter Nelis. Also plate of figs.

Exhibition of fruits by Franklin Davis & Co., from their own specimen orchards:

65 varieties of pears; 3 varieties of quince; 2 varieties of peach, *Italian Dwarf*, and *Golden Dwarf*; 190 varieties of apples.

In addition to this individual collection, Franklin Davis & Co. exhibit the following Southern fruits sent to them by the following persons:

93 varieties of apples from Western North Carolina, from Natt. Atkinson, Asheville, N. C.

4 varieties of apples from C. L. Hollingsworth, Maryland.

5 varieties of apples, James Brickley, Roanoke Co., Virginia.

3 varieties of apples, Wm. Eggleston, Giles Co., Va.

3 varieties of apples, A. L. C. Garrett, Mossy Creek, Tennessee.

2 varieties of peaches, 2 of pears and 19 of apples, W. G. Merrick, Glendower, Va.

20 varieties of apples, L. W. Melton, Morgantown, North Carolina.

5 varieties of apples, J. F. Wayland, Albemarle Co., Va.

1 variety of apple, J. Fitz, Keswick, Va.

15 varieties of apples, Wm. O. Hurt & Son, Lone Pine, Va.

2 varieties of apples, A. F. Byrd, Temperanceville, Va.

70 varieties of apples, Geo. W. & H. C. Wysor, Dublin, Va.

Total—430 dishes of apples; 67 dishes of pears; 3 dishes of quinces and 4 dishes of peaches.

Levi S. Reist, Lancaster, Pa., 10 plates of apples; two apples, weight, 2 pounds 10 oz.

ADDITIONAL REPORT ON FRUITS ON EXHIBITION.

G. H. & J. H. Hale, South Glastonbury, Conn. Exhibit fine grown English *Pond's Seedling* plums.

Edmund Lee Rogers, Esq., Baltimore, Md., 17 varieties pears; we mention *Gen. Taylor* pear, from the original tree, as highly flavored.

B. S. Fox, San Jose, California. 46 varieties seedling pears. Special mention among this collection is made of a large dish each of B. S. Fox, Col. Wilder and P. Barry pears.

Dr. A. P. Wylie, Chester, S. C. A dish of seedling pears "*Annie Wylie*," of large size and excellent quality; one plate of apples.

P. J. BERCKMANS,

G. B. THOMAS,

CHAS. DOWNING,

H. McLAUGHLIN,

Committee.

These were put on exhibition after the Committee had reported to the meeting, and were examined in the evening after returning from our excursion to Col. Wilkins' orchard.

The Report of the Committee on awarding the Wilder Medal, was read by Mr. Harrison as follows, and accepted:

Report of Committee on Wilder Medal.

To the President of the American Pomological Society:

Your Committee for awarding the Wilder Medal, respectfully report that they have made the following awards of Silver Medals, the objects exhibited being all deemed worthy of that distinction:

To the Maryland Horticultural Society, for general horticultural display.

Eastern Experimental Farm, West Grove, Chester County, Penn., for general collection of fruits.

Ellwanger & Barry, Rochester, N. Y., for collection of 166 varieties of pears, 60 of plums and 25 of grapes.

Franklin Davis & Co., Richmond, Va., for general collection of fruits.

Hovey & Co., Boston, Mass., for collection of 120 varieties of pears.

Benjamin G. Smith, Cambridge, Mass., for collection of 82 varieties of pears.

John Saul, Washington, D. C., for collection of 100 varieties of pears.

Connecticut State Board of Agriculture, for general collection of pears, apples and grapes.

Natt. Atkinson, Asheville, N. C., for collection of 100 varieties of apples.

G. F. B. Leighton, Norfolk, Va., for collection of pears.

R. S. Emory, Chestertown, Md., for collection of 21 varieties of pears.

J. L. Babcock, Norfolk, Va., for *Bartlett*, *Duchesse* and *Seckel* pears.

Wm. B. Weeks, Norfolk, Va., for collection of pears.

Mrs. F. A. Hudgins, for 4 varieties of pears.

Alfred H. Page, Olinda, Va., for collection of *Seckel* and other pears.

William Fultz, Norfolk, Va., for *Duchesse d'Angouleme* pears.

William T. Walters, Baltimore, for Exotic grapes.

James H. Ricketts, Newburgh, N. Y., for Exotic Seedling grape, *Welcome*.

Henry E. Hooker, Rochester, N. Y., for *Brighton* grape.

S. T. Jenkins, Harvest Home, Atlanta, Ga., for *Equinety* apples.

Respectfully submitted,

W. S. SCHAFFER,

ELISHA MOODY,

A. W. HARRISON,

B. F. TRANSOU.

Report of Committee on Native Fruits.

The report of the Committee on Native Fruits was submitted as follows:

APPLES.

Hames' Seedling.—Large to very large, oblong conical, regular in shape; skin pale whitish yellow, with a light crimson cheek and darker carmine stripes on the side exposed to the sun; a few white dots; calyx open, in a deep, broad cavity. Stalk three-fourths inch long, thick, inserted in a shallow basin. Flesh rather coarse-grained, white, quite acid, quality good. Ripens from middle to end of June. Origin, West Point, Ga.; a seedling of Mr. H. S. Hames. This apple is very profitable as a market variety, it being the largest very early variety known. Is claimed to be a seedling of *Caroline Red June*, and has been fruited to some extent since 1872. Growth vigorous and foliage dark green.

Moon.—Large to very large, conical; skin light yellow, washed crimson, and with deep crimson stripes. Calyx closed in a deep, narrow basin. Stalk very short, in a narrow cavity. Flesh white, brittle, sub-acid, good flavor, a little coarse, quality good. Origin, a chance seedling originated on the farm of Mr. W. J. Moon, Monroe, Walton Co., Ga. First year of production, 1873.

[NOTE.—A very showy fruit, of good quality, with the peculiarity of having its fruit to commence ripening June 10th, and continuing through the entire summer, the last ripening about October 10th. Ripe and green apples on the tree indiscriminately during four months.]

Saunderson.—We have been furnished specimens of this new early apple by A. Q. Withers, of Holly Springs, Miss., who informs me that it was found by Col. D. D. Saunderson in an adjoining field owned by Miss Ella Gray, of the same place, and that the tree is a moderate grower, somewhat spreading, an annual bearer, and ripens just as the *Red Astrachan* is done, and is a profitable early apple for that section. Fruit medium to large, roundish, inclining to oblong; skin whitish, shaded and striped with light and dark rich red, some specimens entirely covered with deep red or crimson; flesh white, half fine, tender, juicy, agreeably sub-acid; core rather small.

Large Summer Queen.—This fine, large, early apple is supposed to be of North Carolina origin, but the exact locality not known. The tree is said to be very vigorous, upright at first, but with age spreading and irregular; an early and abundant bearer, and valuable in its locality for its time of

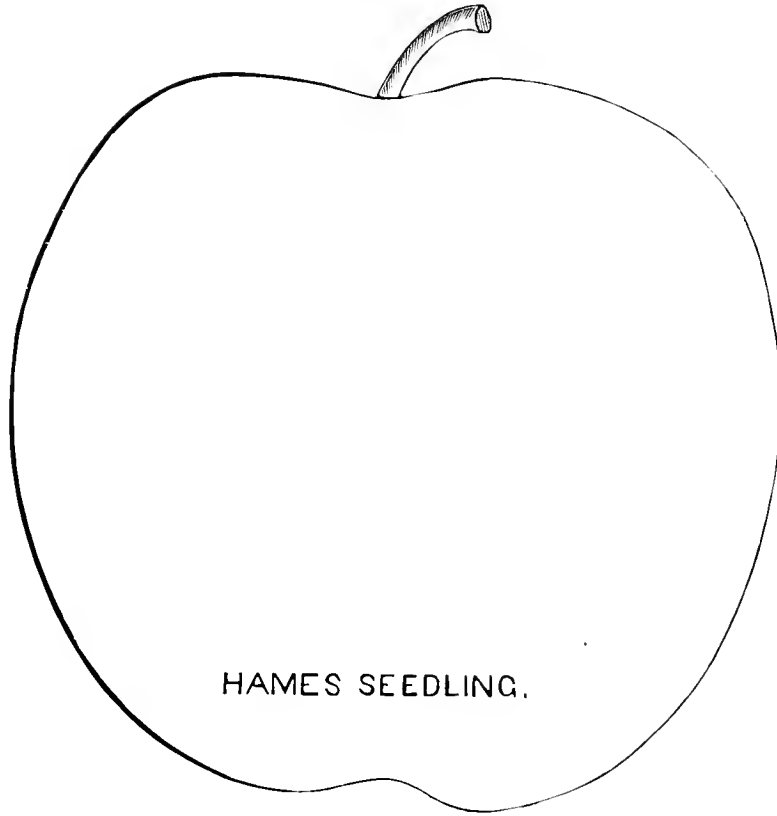
ripening. Fruit large to very large, roundish oblate. Skin pale greenish yellow, shaded, striped and splashed with pale red. Flesh white, fine, tender, juicy, rich, mild sub-acid, slightly aromatic; very good. Ripe from the last of July till the first of September, or about the time of the *American Summer Pearmain*.

Kinkead.—A very promising new apple which originated on the grounds of J. C. Kinkead, of Lancaster, Ohio; the tree is said to be a vigorous, upright grower, and a good bearer annually; an excellent apple for family use and for market. It was thought at one time to be the *Western Beauty*, but it has proved to be distinct. The skin is of a brighter color, better in quality and a little earlier. Fruit large, varying in form from oblate to roundish oblate. Skin whitish, striped, splashed and mottled nearly over the whole surface with light and dark bright red. Flesh white, half fine, very tender, juicy, sprightly sub-acid; very good. Core small. Ripens from the last of August to the 1st of October.

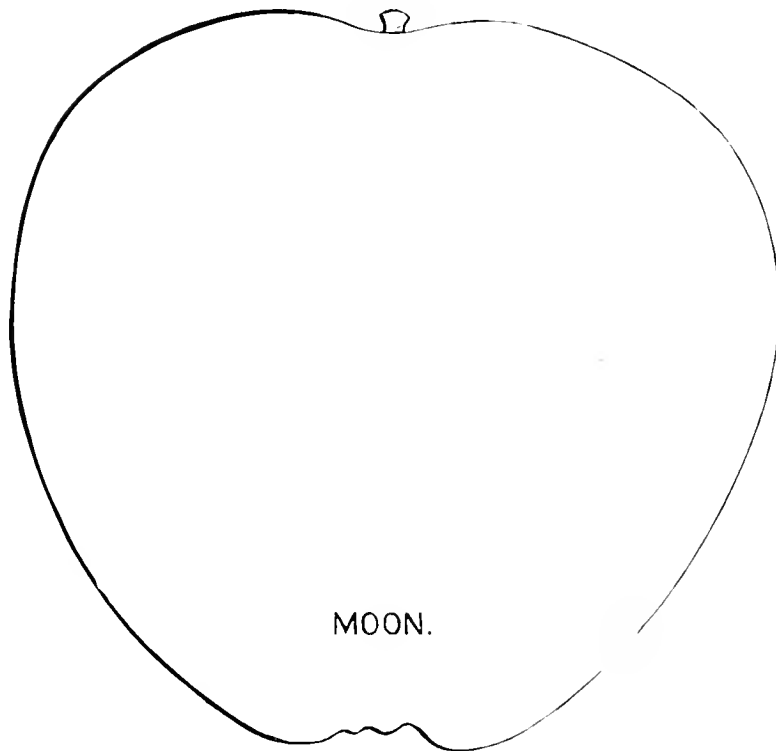
Bushnell.—Origin, on the homestead of Gen. Andrew Bushnell, of Hartford, Ohio, now in possession of his son, Seth A. Bushnell, who kindly sent us specimens and writes that the tree is hardy, a moderate grower, an early and profuse bearer, and valuable for its season. Fruit medium, or nearly so; oblate, slightly angular. Skin whitish yellow. Flesh white, fine, tender, juicy, mild, pleasant sub-acid; very good; core rather small. Ripens from the first of August to the middle of September.

Imperial Rambo.—A new variety raised by O. T. Hobbs, Randolph, Penn., which he esteems highly and thinks it will supersede the old *Rambo* as an eating apple. Tree a strong grower, and so far, a regular and moderate bearer. Fruit medium, oblate, oblique. Skin smooth, whitish yellow, shaded, splashed and mottled rather thinly over most of the surface. Flesh white, fine, crisp, tender, juicy, pleasant, sprightly sub-acid; core small. Ripens from October to February.

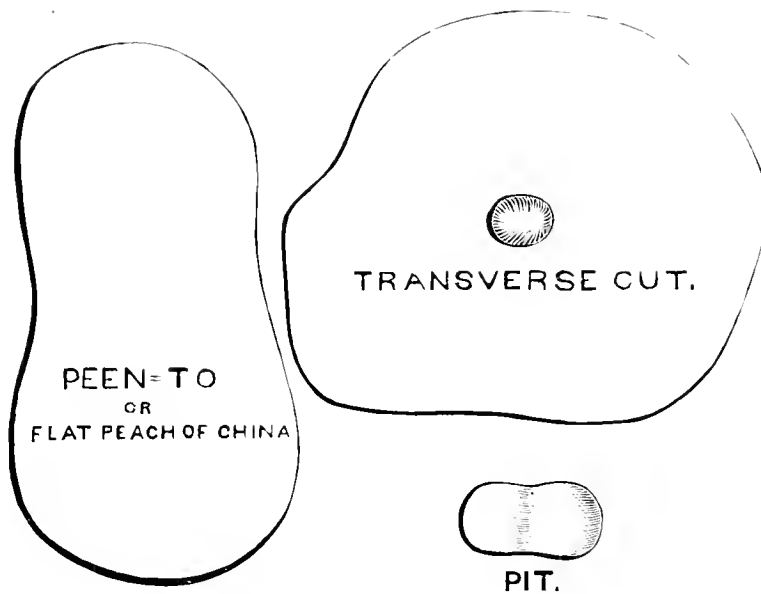
Dawes.—*Dawes' Porter*—*Dawes' Nonsuch*—A chance seedling on the farm of Francis H. Dawes, Cummington, Mass., who considers it equal, if not superior, to the *Porter* for that locality. The tree is vigorous, healthy, hardy, and forms a large round head; a profuse bearer; ripening in October and November. Fruit medium, roundish oblate, conic. Skin light yellow, shaded with light purplish red, sometimes a few rather obscure splashes and blotches. Flesh whitish yellow, half fine, tender, juicy, sprightly sub-acid; very good; core medium.



HAMES SEEDLING.



MOON.



PEACHES.

Peen-To, or Flat Peach of China.—Size, two inches in diameter. Shape, irregularly round, very much flattened; one inch and a half through on one side, and one inch on the other; suture or furrow very deep, extending from the stem around thinnest side to the calyx; calycinal cavity narrow and deep; skin greenish yellow, washed and delicately pencilled carmine, peels readily at maturity; flesh very finely grained, juicy and dissolving, with a delicate almond aroma; quality best; cling-stone; stone very flat, $\frac{5}{8}$ inch thick; flowers large, glands reniform; maturity, May 24th to end of June, in Florida.

[NOTE.—The original tree originated by P. J. Berckmans, Augusta, Ga., from pits received from Australia in 1869; but from its habit of blooming in January, is unsuited to open air culture in the middle section of the State. Trees sent to Florida have fruited abundantly and prove to be adapted to the sub-tropical zone, where varieties of the Persian or common strain, as cultivated throughout the United States, are worthless. In Gainesville, Florida, this variety ripened May 24th, 1877, the growing season being thirty days later than ever known before. The supposition is that its maturity there would, in ordinary seasons, be about May 1st. In Pensacola, a three-years-old tree produced 1200 specimens.]

Briggs' May.—Medium, round, slightly irregular; suture distinct, $\frac{3}{4}$ inch; skin greenish white, nearly

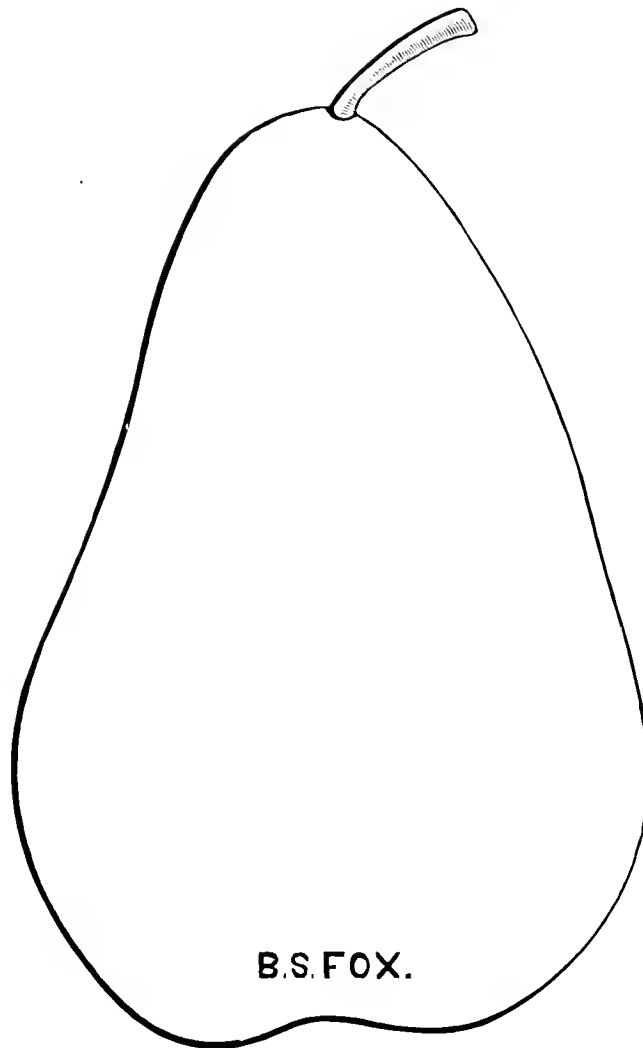
covered with red, and a deep crimson cheek; flesh greenish white, adhering much to the stone; juicy, vinous and of good flavor; quality very good. Maturity in Augusta, in 1877, June 1, or one week later than *Amsden* and *Alexander*. Flowers—leaves serrate. Origin, G. W. Briggs, California.

Zelia, Cora and *Olya.*—Three new seedlings of *Baldwin's Late* and *Lady Parham*, to which they are superior in quality and size. All are white fleshed freestones, and mature South end of September to middle of October. Originated by L. E. Berckmans, Rome, Ga., in 1873.

Annie Wylie.—Large, round, sometimes flattened; skin creamy white, with crimson cheek; flesh fine grained, melting, vinous; very good to best; cling-stone; maturity September 5th to 10th, in South Carolina. Origin, Chester, S. C.

STRAWBERRIES.

Forest Rose.—A new variety from Lancaster, Ohio, originated on the farm of J. A. Fetters. Plant healthy, vigorous; foliage good; trusses high; flower perfect; fruit large, regular, obtuse conic; heavy, bright red; moderately pitted; flesh reddish, solid to the paler center, juicy, sufficiently acid, rich; very good. A very promising variety.



PEARS.

B. S. Fox.—Large, oblong pyriform; skin yellow, covered with russet and green splashes; calyx closed in a shallow basin; flesh melting, fine grained, juicy and highly flavored, vinous; quality best; maturity end of September; origin, B. S. Fox, San José, California. A most promising and handsome variety. The following varieties were originated by B. S. Fox, San José, California, and examined September 14th, 1877, at Baltimore:

No. 109.—Medium, acute pyriform, irregular; skin yellow; flesh fine grained, melting; quality good.

No. 250.—Globular, acute pyriform; above medium; flesh breaking; quality good.

No. 52.—Small, russetty red cheek; evidently a seedling of *Seckel*, but not as good.

No. 196.—Small to medium, ovate pyriform; very fine grained, very sweet; quality best.

No. 66—Above medium, acute pyriform; skin cinnamon russet; fine grained, very juicy, melting; quality best.

In addition to above, there were a number of seedlings in fine eating order, but showing well defined traits of *Seckel*, *Belle Lucrative*, *Lawrence*, etc., and appearing to be reproductions of these varieties. We also mention twenty-nine additional varieties generally of fine size, with strong characteristics of old varieties, but unripe, and thus not in a condition to be reported upon.

GRAPES.

Prolific Scuppernon Hybrid, No. 4.—Wood peculiarly slender, bears in clusters at each of its joints, never rots or mildews; grows in pipe-clay soil.

Note of Dr. A. P. Wylie, Aug. 10, 1877: Bunches medium, compact, produced in wonderful profusion;

berry round, greenish white, pulp half dissolving, much juice, sprightly vinous and with a peculiar musky aroma unlike the *Scuppernon*; quality good. Maturity middle of August. A most promising hybrid from whose seedlings valuable results may derive. Origin, Dr. A. P. Wylie, Chester, S. C.

Mary Wylie.—Parentage, *Clinton* and *Red Frontignon*; bunches large, loose; berry above medium, slightly amber-tinted; flesh dissolving, vinous, highly flavored and very delicate; skin thin; quality best; foliage resembling *Clinton*. Maturity middle of August. Origin, Dr. A. P. Wylie, Chester, S. C.

Berckmans.—Parentage, *Clinton* and *Delaware*; bunches and berries larger than Delaware, of same color and quite equal in quality. Growth and foliage almost similar to *Clinton*; very vigorous and very prolific. Maturity middle to end of July. Has been in bearing seven years. Origin, Dr. A. P. Wylie, Chester, S. C.

Seedling Grapes of Dr. W. A. M. Culbert, Newburgh, N. Y.:

Silver Dawn.—A seedling of *Israella* fertilized by pollen of *Muscat Hamburg*, a brother of the *Early Dawn*; is out of the same bunch. Vine hardy and vigorous; a fine white grape; quality best.

No. 3. *The White Muscat of Newburgh*.—Is a seedling of *Hartford Prolific* fertilized by pollen from *Iona*. It is hardy, vigorous, and bears exposure to winter without the least protection. It is ripe the last of August. It has a fine *Muscat* aroma, which is due to a refinement of and toning down of the foxiness of the *Hartford Prolific*, its mother.

No. 4. *Delaware Seedling*, without name.—It is a seedling of *Delaware* fertilized by *Gen. Marmorata*. It is a vigorous grower, and is hardy and prolific. It is a more rapid grower than its mother.

No. 5. *Golden Berry*.—Is a white seedling of the *Hartford Prolific* and *Gen. Marmorata*. Bears exposure, is hardy and is a free bearer.

No. 6. *Purple Bloom*.—Is a brother of the *Golden Berry*, the seed from which it grew having been taken from the same bunch. It is hardy and vigorous and a prolific bearer. Its berries are fair size and its bunches large and showy, while its quality is good. It is well adapted to become a market grape.

The Committee has examined numerous other varieties of fruits, which were brought to the notice of the several members since the session of 1875, and have been compelled to omit mentioning many kinds because of their doubtful origin or local value

only; and again, as many fruits are modified in their size and appearance by climatic influences, when cultivated in sections of the continent remote from their original localities, they may prove in future to be either old described varieties or synonyms therefrom.

ROBERT MANNING—MASSACHUSETTS.

I. STAYMAN—KANSAS.

DR. JOHN A. WARDER—OHIO.

JOSIAH HOOPES—PENNSYLVANIA.

EDMUND LEE ROGERS—MARYLAND.

P. J. BERCKMANS—GEORGIA.

CHARLES DOWNING—NEW YORK.

BERCKMANS, from the Committee on Native Fruits, made a partial report, and the Committee was authorized to complete the same and forward it to the Secretary. The following is the report:

Report on New Fruits.

APPLES.

KANSAS FRUITS.

Kansas Spitzenburg.—Fruit medium to large; form roundish, slightly conic, regular; color bright lemon yellow, handsomely blushed, mixed and striped with rich crimson; flesh yellow, firm, tender, juicy, vinous, aromatic, mild sub-acid, high *Spitzenburg* flavor. Season, January to June. Tree rather strong, upright, spreading, irregular, early and good bearer. Originated with Burrell Atkinson, Leavenworth.

Kansas Bellflower.—Fruit medium to large; form roundish, oblate, conic; color clear light yellow with a pink blush; flesh yellow, very tender, juicy, sprightly, mild, pleasant sub-acid, quality best. Season, December to February. Tree hardy, vigorous, symmetrical, early and good bearer. Originated with Burrell Atkinson, Leavenworth.

Bowen's Seedling.—Fruit above medium; form oblate, conic, very regular; color greenish yellow, mostly covered, mixed, splashed and striped with dull red; flesh yellowish, very firm, brittle, juicy, very mild sub-acid; quality very good. Season, April to August, but will keep two years. Originated with A. Bowen, near Olatha, Kansas. Tree hardy, vigorous, symmetrical, upright, early bearer and productive.

Osawatomic.—Fruit medium; form roundish, oblate, slightly conic; color light yellow, mostly covered, mixed, splashed and striped with light and deep red; flesh yellowish white, tender, moderately juicy, mild, pleasant sub acid; quality good. Season,

April to May. Tree strong, upright, spreading grower, hardy, annual bearer, productive. Originated with Addison Barnard, near Osawatomic.

Kansas Keeper.—Fruit medium to large; form roundish, oblate, slightly conic; color greenish yellow mixed, splashed and striped with light and deep dull red; flesh yellow, tender, crisp, moderately juicy, mild, pleasant sub-acid; quality good. Season, January to June. Tree vigorous, very productive; origin unknown. Ham Brothers, Douglas Co.

Lallier.—Fruit medium or above; form oblate conic; color light greenish yellow with a brown blush; flesh yellow, coarse, tender, juicy, rich, spicy, sprightly sub-acid; quality very good. Season, August. Tree hardy, upright, spreading, early bearer and productive. Originated with Eugene Lallier, Leavenworth.

PEACH.

Dr. Jones.—Fruit very large; form round with a slight marked suture on one side; color light creamy yellow with a lively red mottled cheek; flesh yellowish white to the stone, a little firm, tender, very juicy, melting, rich, luscious, high flavor, quality best. Season, October 1 to 15. Tree hardy and vigorous, productive. Originated with Dr. Jones, Leavenworth. This is the best large late peach we have seen.

GRAPE.

Early Victor.—Bunch medium, sometimes shouldered, compact; berry medium, round, black; flesh slightly pulpy, juicy, vinous, aromatic, sweet; quality very good. Season, a week earlier than *Hartford Prolific*. Originated with John Burr, of Leavenworth. This is the best early grape we have seen, perfectly hardy, healthy, vigorous and very productive. Perhaps a *Seedling of Hartford*, as it much resembles it in growth and foliage, but does not drop its fruit, and is free from foxiness.

Burr's Seedling Concord.—This appears to be identical with the *Concord* in hardiness, growth and appearance, if any it is larger in bunch and berry, and about one week earlier; productive and so far free from any disease. Origin as above.

IOWA APPLES.

Blue Bloom.—Fruit medium to large; form roundish oblate, slightly conic, indistinctly ribbed; color light yellow, mostly covered, mixed, splashed and striped with purplish red, blue tinge, handsome; flesh white, stained pink, tender, juicy, sprightly sub-acid; quality good. Season, September, October. From E. H. Calkins, Burlington, Iowa.

Delong.—Fruit medium to large; form roundish oblate, conic, regular; color light rich yellow, mostly covered, mixed, splashed and striped with light and deep crimson, very handsome; flesh yellowish white, tender, juicy, sprightly sub-acid; quality very good. Season, August, September. From Suel Foster, Muscatine, Iowa.

Hartland Beauty.—Fruit above medium; form roundish oblate, slightly conic, regular; color light yellow, mixed, splashed and striped with crimson, handsome; flesh white, very tender, juicy, rich, sweet; quality very good. Season, September, October. Tree vigorous, upright, compact, very hardy, most profuse annual bearer. From Stephen Jackson, Lamoille, Iowa.

Queen of the North.—Fruit medium to large; form oblate, conic, slightly ribbed; color pale or whitish yellow, faintly blushed; flesh yellowish white, very tender, juicy, sprightly sub-acid; quality very good. Season, August. Tree strong, spreading, open, very hardy and productive, and an annual bearer. From the same person.

Red Face.—Fruit above medium; form oblate, conic, regular; color light greenish yellow, mostly covered, splashed and striped with reddish purple with the appearance of bloom; flesh yellowish white, very tender, juicy, pleasant, mild sub-acid, very fragrant; quality very good. Season, September. Tree dwarfish, hardy, a young and certain annual bearer; very productive. From Silas G. Goss, Border Plains, Iowa.

WISCONSIN APPLES.

Dockham Russet.—Fruit large; form oblate, depressed; color deep orange, covered and mixed with cinnamon red and carmine, handsome; flesh white, tender, juicy, slightly aromatic, sprightly sub-acid; quality very good to best. Season, October. Tree very hardy, healthy, upright, spreading, productive. From A. G. Tuttle, Baraboo, Wisconsin. A fine excellent showy apple.

Clark's Orange.—Fruit medium, form roundish, slightly conic, regular; color light yellow, blushed and mixed with red, handsome; flesh yellowish, tender, juicy, sprightly, mild sub-acid; quality very good. Season, December to February. A good market and kitchen apple. Tree upright grower, bears alternately very heavy crops of uniform fruit. From George P. Pepper, Pewaukee, Wisconsin.

Pepper's Winter.—Fruit medium to large; form roundish ovate; color greenish yellow, mostly covered with dull red, splashed and striped with carmine; flesh pale yellow, tender, breaking, juicy, mild sub-

acid; quality good. Season, December to March. A seedling of *Duchess of Oldenburg* Tree slow grower, bears alternately, very heavy. From George P. Peffer.

Peffer's Golden.—Fruit medium to large; form roundish oblate, slightly conic, regular; color orange yellow with an occasional bronze blush and a white bloom; flesh yellow, firm, fine, juicy, spicy, aromatic, mild sub-acid; quality best. Season, January to April. From the same person.

Fall or Late Red Streak.—Fruit large; form roundish oblate, conic, sometimes oblique and compressed; color light rich yellow, covered, mixed, splashed and striped with bright and deep scarlet red; flesh yellowish white, very tender, juicy, mild, pleasant sub-acid; quality very good to best. Season, September. A very handsome and excellent apple. From S. W. Noble.

Wheeler.—Fruit above medium; form oblate, conic, depressed, regular; color light yellow, covered, mixed, splashed and striped with bright purplish red, handsome; flesh yellowish white, tender, juicy, mild, pleasant sub-acid; quality very good to best. Season, September. An excellent apple. From S. W. Noble.

PENNSYLVANIA APPLES.

Berks Co. Golden Pippin.—Fruit large, heavy; form roundish oblate, conic; color greenish yellow; flesh yellowish, fine, firm, tender, juicy, aromatic, mild sub-acid; quality very good. Season, winter. A good apple. From Allen J. Hartenstein, Reading, Pa.

Sprang.—Fruit large to very large; form roundish oblate, ribbed, oblique; color greenish yellow; flesh yellowish white, fine, tender, juicy, mild sub-acid; quality very good. Season, November, February. A large, handsome apple, worthy of cultivation. Originated with Mrs. Mary Sprang, Reading.

Berks Co. Mammoth.—Fruit very large; form roundish oblate, slightly conic, regular; color greenish yellow, covered, mixed, splashed and striped with deep purplish red, mixed with grey; flesh yellowish white, tender, juicy, mild, pleasant sub-acid; quality very good. Season, October, November. The best large apple we have seen. Originated with S. B. Knobb, Berks Co., Pa.

Springhouse.—Fruit medium to large; form oblate, conic, regular; color light greenish yellow, mostly covered, mixed and splashed with deep purplish red, some mixed with grey; flesh yellowish white, firm, tender, juicy, mild, pleasant sub-acid; quality very good. Season, late winter. A

very good, handsome apple. Originated with David Gring, Berks Co., Pa.

Swit. Pippin.—Fruit large; form oblate, conic; color greenish yellow, blushed with purplish red; flesh yellowish white, tender, juicy, sprightly, mild, pleasant sub-acid; quality very good to best. Season, winter. From R. J. Erb, Lancaster Co., Pa. One of the very best.

INDIANA APPLES.

Stearns' Winter Greening.—Fruit medium to large; form oblate, oblique, indistinctly ribbed; color greenish yellow, occasionally with a blush; flesh yellow, very tender, juicy, aromatic, very pleasant sub-acid; quality, best. Season, December to April. Tree vigorous, upright, spreading, very hardy, early, annual bearer, very productive. Originated with Thomas Stearns, of Fountain Co., Ind.

CONNECTICUT APPLES.

Early Brook.—Fruit medium; form oblate, slightly conic, sometimes angular; color pale yellow, mostly covered, mixed and splashed with bright light crimson; flesh white, very tender, juicy, sprightly, pleasant sub-acid; quality very good to best. Season, August, September. An excellent and handsome apple. From Willis Johnson, Waterbury, Conn.

Porter's Nonsuch.—Fruit medium; form oblate, conic, ribbed; color yellow, covered, mixed, splashed and striped with bright scarlet red; flesh yellowish white, firm, juicy, spicy, sprightly, pleasant sub-acid; quality very good to best. Season, October, January. From P. M. Augur, Middlefield.

Brown's Favorite.—Fruit large; form roundish, oblate, conic, obscurely ribbed; color whitish yellow, mostly covered, mixed, splashed and striped with light bright red; flesh white, tender, juicy, mild, pleasant sub-acid; quality very good. Season, November, December. A handsome large apple. Origin, Columbia. From P. M. Augur.

MASSACHUSETTS.

Queen of the Orchard.—Fruit above medium; form roundish, oblate, conic, obscurely ribbed; color light yellow, mostly covered, mixed, splashed and striped with rich, deep, dark red, very handsome; flesh yellowish white, tender, juicy, sprightly sub-acid; quality very good. Season, September, October. From Joseph H. Fenno, Revere, Mass.

MICHIGAN.

Dykeman.—Fruit medium; form oblate, conic, obscurely ribbed; color light yellow, covered, mixed,

splashed and striped with crimson red, handsome; flesh yellowish white, tender, juicy, sprightly, pleasant sub-acid; quality very good. Season, September, October. Received at Centennial of Committee.

MINNESOTA.

Seedling of Duchesse of Oldenburg.—Fruit medium; form roundish, ovate, regular; color light straw yellow, nearly covered, mixed, splashed and striped with light and deep crimson red and carmine, very handsome; flesh yellowish white, stained, very tender, juicy, sprightly, pleasant, sub-acid; quality very good to best. Season, August, September. Tree very hardy, slow grower, very prolific; bore the eighth year from seed. Originated with Peter M. Gideon, Excelsior.

Malinda.—Fruit above medium; form oblong, conic, slightly ribbed; color rich golden yellow, blushed with reddish brown, indistinctly splashed with crimson, handsome; flesh yellowish, rather firm, moderately juicy, very mild sub-acid; quality good. Season, February to May. Tree very hardy, early bearer and very productive. From J. W. Rollins, Elgin, Minn.

MISSOURI.

Summer Queen of Missouri.—Fruit large to very large; form oblate, conic, regular; color greenish yellow, mostly covered, mixed, splashed and striped with light and deep purplish red, mixed with gray; flesh yellowish white, tender, juicy, sprightly sub-acid; quality good. Season, August. From H. C. Whitlock, Platte Co., Mo. This is the largest and most showy apple of that season, and a profitable market apple. This is different from *Downing's Summer Queen*.

Todd's Seedling.—Fruit very large; form roundish, ovate, regular; color greenish yellow, mostly covered, mixed, splashed and striped with deep purplish red; flesh yellow, tender, juicy, mild, pleasant sub-acid; quality good to very good. Season, December to February. Tree strong, upright, spreading, hardy and productive. From Marian Todd, Platte Co., Mo.

UTAH.

Wallace Kitchen.—Fruit medium; form oblate, conic; color, yellow, covered, mixed, splashed and striped with crimson red; flesh yellow, tender, very juicy, rich, sprightly, brisk sub-acid; quality very good. Season, September, October. From Utah collection.

CALIFORNIA.

Santa Clara King.—Fruit large to very large; form oblate, conic, slightly mixed; color rich lemon

yellow, faintly striped with bright red; flesh yellowish white, very tender, juicy, sprightly, mild sub-acid; quality best. Season, September, October. This is the best very large apple we have seen. Said to be a good grower and productive.

NORTH CAROLINA.

Big Red.—Fruit large to very large; form oblate, conic; color light yellow, mixed, splashed and striped with light and deep, dark red; flesh white, tender, juicy, sprightly, peculiar, pleasant sub-acid; quality very good. Season, October, November. From Natt. Atkinson, Asheville, N. C.

Clark's Seedling.—Fruit large to very large; form roundish, conic, ribbed; color deep yellow; flesh yellowish white, firm, juicy, aromatic, mild sub-acid; quality very good to best. Season, winter. From Natt. Atkinson.

Mammoth Greening.—Fruit large to very large; form roundish, oblate, conic; color greenish yellow, mixed with grey; flesh white, tender, juicy, sprightly sub-acid; quality very good. Season, November, December. From Natt. Atkinson.

Lewis Green.—Fruit large to very large; form oblate, conic, oblique; color greenish yellow with a dull blush; flesh yellowish white, tender, juicy, sprightly, pleasant sub-acid; quality very good. Season, October, November. From Natt. Atkinson.

Pharr's Seedling.—Fruit large to very large; form roundish oblate, oblique, irregular; color deep yellow with some russet markings; flesh yellowish white, tender, juicy, sprightly, mild sub-acid; quality very good. Season, November, December.

English Seedling.—Fruit large; form roundish, oblate, conic, regular; color light yellow, mostly covered, mixed and splashed with light red; flesh yellowish white, a little coarse, tender, juicy, pleasant sub-acid; quality very good. Season, October. From the same person.

Carpenter N. C.—Fruit large; form oblate, depressed, oblique, color greenish yellow, somewhat blushed and russeted; flesh yellow, firm, tender, juicy, sprightly, pleasant sub-acid; quality very good to best. Season, winter. From above.

Pound N. C.—Fruit large; form oblate, conic, depressed; color deep yellow, covered with deep bright red, handsome; flesh yellowish white, firm, tender, juicy, mild, pleasant sub-acid; quality very good. Season, winter. As above.

Clotz.—Fruit large; form roundish oblate, conic, oblique; color greenish yellow with a dull, deep red blush, some russeted; flesh yellowish white.

tender, fine, juicy, spicy, sprightly sub-acid; quality very good to best. Season, winter. From Natt. Atkinson.

Stephenson's Seedling.—Fruit large: form roundish oblate, conic, regular; color light yellow, covered, mixed and splashed with bright purplish red; flesh yellowish white, firm, tender, juicy, sprightly, pleasant sub-acid; quality very good. Season, winter. From Natt. Atkinson.

Muskmelon.—Fruit large: form oblate, conic; color greenish yellow with a dull blush; flesh greenish yellow, very tender, juicy, mild, pleasant sub-acid; quality very good. Season, October, November. From the above.

Winter Black.—Fruit large, form oblate, depressed, oblique; color light yellow, covered, mixed and splashed with dark purplish red and carmine; flesh white, tender, moderately juicy, mild, pleasant sub-acid; quality good. Season, winter. From the same person.

Nova Scotian.—Fruit large: form roundish, oblate, conic, ribbed; color deep yellow, a striped blush; flesh yellowish white, tender, juicy, aromatic, mild, pleasant sub-acid; quality very good to best. Season, winter. From R. W. Starr.

Iron Apple.—Fruit large: form oblate, depressed, slightly ribbed; color greenish yellow with a blush; flesh yellowish white, firm, juicy, sprightly, slightly aromatic, brisk sub-acid; quality good to very good; long keeper. From R. W. Starr.

J. STAYMAN,

Leavenworth, Kansas.

Report of Committee on Synonyms.

The Report of Committee on Synonyms of *Newtown Pippin*, was made and accepted.

The Committee on Synonyms, to whom was specially referred the subject of the identity of the *Green* and *Yellow Newtown Pippins*, have, in connection with its own members present, invited a few pomologists who have given attention to the subject. The reasons for regarding them identical were stated to be the remarkable similarity in the growth of the trees, and the fact that the fruit not only varied in different localities, but on the same tree, and that such variation was sometimes as great as the claimed distinctiveness in the two sorts. This variation is well known in other varieties, the *Baldwin* having produced in this way the *Late Baldwin*, and at one time a *Baldwin Betweenity* was claimed, although all were identical.

On the other hand, it was stated by Charles Downing that he had known the two sorts as quite distinct for more than half a century, and that many trees have been propagated as the two sorts, and the distinctive characteristics of each were maintained in every instance through all the extent of time mentioned. The growth of the trees of the green variety is more upright, that of the yellow more irregular and spreading; the fruit of the green is less oblique, more juicy and of higher flavor than the yellow, and is a longer keeper.

Dr. Warder said that the two sorts had been propagated and raised to considerable extent in Ohio and Indiana, and had always proved distinct, with the same characteristics of the fruit as those mentioned by Mr. Downing; but as the yellow was the more showy, fruit nurserymen had frequently sold this exclusively for both sorts. He claimed distinctness on the ground of the characters of the flesh and juice, preferring the green.

The four members of the Committee present were unanimous in the opinion that they are distinct varieties.

Report of Committee accepted.

Essays, Reports, Etc.

Essays, reports, &c., by Prof. Beal, of Lansing, Michigan, Dr. Vasey, of Washington, Prof. Prentiss, of Ithaca, N. Y., and others, were referred to the Executive Committee.

A communication from John Huffner & Co., on Fruit Packages, was referred to the Executive Committee.

Mr. Brackett, of Iowa, moved the appointment of a Committee on Resolutions. The motion was carried, and Messrs. Brackett, Warder and Hoopes appointed.

NEW VARIETIES OF PEACHES.

Alexander and Amsden.—J. J. THOMAS. Proposes these as promising well.

Alexander.—BERCKMANS. We have fruited the *Alexander* in Georgia two years. This year, the 24th day of May, I sent my first to New York—also the *Amsden*. I could detect no difference in any respect, except we thought the *Amsden* averaged larger in size. It is from ten to fifteen days earlier than the *Beatrice*, and much better. The *Alexander* in Southern Georgia ripens the 23d of May. *Beatrice* the first week in June.

MYERS, of Delaware. Have fruited the *Alexander*. There are five or six days between the *Alexander* and *Beatrice*.

HAPE, of Georgia. At Atlanta the *Alexander* is ripe the 14th of June. The *Amsden*, in the same neighborhood, a few days earlier. The *Alexander* is larger, of firmer flesh, finer. It is from six to ten days before the *Beatrice*, and much superior. The *Amsden* and *Alexander* under nearly similar conditions, twenty miles away, ripened the same day, but the *Alexander* was larger and brighter.

BISSEL, of Rochester. *Beatrice*, *Alexander* and *Amsden*, under the same conditions, are very nearly alike. They are ripe about the 25th of June, and gone the 4th of July.

DOWNING. I have examined trees within a few feet of each other two years, and see no difference in wood, foliage or fruit.

PETERS, of Delaware. I have fruited the *Beatrice* three years. Also *Beatrice*, *Alexander* and *Amsden* on the same tree; I see no difference in the two latter. They are several days earlier than the *Beatrice*. They are both productive and the tree hardy. The *Beatrice* overbears.

Steadily.—PARRY. I procured a few trees which fruited a little last year and were very full this year. They are very late, cracked, and I thought of not much value.

Briggs' May.—BERCKMANS. This peach matured on the 21st of June, where *Alexander* and *Amsden* matured on the 26th. It is small, serrate; a seedling of *Hale's Early*.

Leatherby's Late.—BERCKMANS. I have seen it within a few days. It is a poor Smock.

Lery Peach.—NEEDHAM, D. C. This peach in Washington is a large, yellow cling. It is picked in October and will keep into November. I will furnish scions.

Anna Wylie.—BERCKMANS. This peach is shown at Chester, South Carolina. It is one of the finest white cling stones of the *Heath* type. It is ripe now.

Honeywell.—ENGLE asks about this peach.

DOWNING. It is very similar to *Amsden* and *Alexander*, it ripens at the same time. There are other early peaches not introduced; one at Shippenburg, ripens the same time as the above. Another at Gettysburg, and another at Frederick City, Maryland, which is a finer peach than *Amsden*. There are a number of others forthcoming. Musser of our place has another.

PEARS.

Beurre Clairgean.—PETERS. This is worthless because it sheds its leaves

BERCKMANS. But it ripens its fruit.

REED. It is worthless in tide water, Virginia.

Clapp's Favorite.—BERCKMANS. It colors too quickly and ripens too fast. It won't stand shipping.

QUINN. It rots at the core.

MYERS. If sent early they ripen well.

HOVEY. Picked early it ripens up pretty well.

SMITH, of Massachusetts. Clapp marketed 250 bushels this year from 100 trees.

PETERS. It is very liable to blight with us; it blights in the body of the tree. I lost the stock in four different orchards.

Columbia.—QUINN. It does very well with me.

EVANS. It does well in Southern Pennsylvania on twenty year old trees, but blows off.

Dana's Hovey.—EVANS. I have fruited it fifteen years in Southern Pennsylvania. It is superior to *Seckel* in fruit and tree.

HOWLAND. I think well of it so far.

EVANS. It is larger than in the east.

QUINN. It does well with me.

SMITH. It is first class.

HOVEY. There is no blight.

WILLIAMS. Two trees blighted this year; grafts.

SAUL. It succeeds well with me. It is a good healthy grower.

DOWNING. It is the best pear I have seen, and the best tree.

HOOPES. It is now coming into the Philadelphia market, and is highly esteemed.

Dic.—WARDER. It has done remarkably well, but has succumbed to blight.

EVANS. It cracks and blights.

ROGERS. I have no fault to find with *Dic*.

Duchesse Bordeaux.—QUINN. It does very poorly with me.

Easter Beurre.—QUINN. Very poor.

Fulton.—ROGERS. Two stars for Maryland.

Glout Morceau.—PETERS. It is of very little value in Delaware.

Henkel.—ROGERS. Two stars for *Henkel*; one of the finest I know.

Hosenshenck.—HOOPES. Very poor in Eastern Pennsylvania.

BRIGGS. It ripens irregularly. Two-thirds of the fruit is knotty. One week earlier than *Bartlett*.

SAUL. It is a good grower, has good foliage; bears well, and is a good sized early pear.

ENGLE. It is a poor grower, early and an extra-

ordinary bearer; would not discard it, though not fit for market. Old trees do better than young.

Howell.—PETERS. Two stars for Delaware.

BRIGGS. One of our best market pears; next to *Bartlett*.

EVANS. One of our leading pears.

Kirtland.—PETERS. One of our best early pears. It ripens a week before the *Bartlett*.

SAUL. A good bearer, holds its foliage; does not rot if picked early.

EVANS. Very good; good bearer. Pick early, however.

Lawrence.—QUINN. For the last five years it has been losing ground. Its size and bearing qualities don't suit.

PETERS. It does well with us. The fruit is smooth and uniform.

ROGERS. It has done well the last seventeen years.

SAUL. It is all that can be desired in the District of Columbia.

PARRY. One of the very best of its season.

EVANS. The same in Pennsylvania. It ripens much earlier one year than another.

WILLIAMS. It is fourth on our list.

BRIGGS. It drops its leaves like *Beurre Clairgeau*.

DURAND. One of the most reliable we have.

CAYWOOD. It is one of the best on the Hudson.

Louise Bonne.—ROGERS. Would have two stars for Maryland. It was planted twenty years ago in Talbot Co. Does well.

QUINN. It does well in one part of an orchard and very poorly in another not one thousand feet distant.

Madeleine.—QUINN. Fine market pear; not dry and corky if gathered early.

PETERS. I planted 500 fifteen years ago; all died to a tree at nine years old. Of no value whatever.

Manning's Elizabeth.—ROGERS. Two stars for *Manning's Elizabeth*.

PETERS. Agrees with Rogers.

NOBLE. One star for Pennsylvania.

SAUL. One star for the District of Columbia.

Mt. Vernon.—QUINN. I have had a single tree two years; with good culture it is much below the size it ought to be.

HADWEN. It needs high culture and a good deal of thinning.

HOVEY. I consider it of no particular value

around Boston. It is an amateur pear, brown, moderate size; of cinnamon flavor.

Onondaga.—ROGERS. One star for Maryland.

HOVEY. One star for Massachusetts.

Pratt.—EVANS. One star for Pennsylvania. Have had it fifteen or twenty years. It is doing finely.

Rutter.—PETERS. I have fruited it many years. It is an annual and heavy bearer, hardy, of fair market value. Flesh and size like the *Duchesse*. One star for Delaware.

BARRY. Not promising with us.

PARRY. It bears very early and makes a good growth.

HOOPES. It is without exception the best of its season in East Pennsylvania.

St. Ghislain.—SAUL. A good bearer and grower.

St. Michael Archangel.—SAUL. A very fine pear, a good grower. Holds its foliage well.

ROGERS. It is hardy and productive.

PARRY. It is also in New Jersey.

Sheldon.—PETERS. One of our finest pears. It is sometimes troubled with leaf blight. It comes in after *Bartlett*.

Tyson.—SAUL. One of our finest pears, and most vigorous growers. It is all one can desire.

ROGERS. Fine; a large tree in Georgetown and here.

ENGLE.—It loses its foliage.

HOVEY.—It is only of value for amateur culture, fine flavor; only medium size; a late bearer.

Urbaniste.—EVANS. Two stars for South Pennsylvania.

ROGERS.—Two stars for Maryland; a vigorous grower.

Washington.—SAUL. This is much neglected. It is one of our finest early pears.

ROGERS.—It is a great failure everywhere, excepting on old trees, where it is fine and large.

White Doyenne.—TROWBRIDGE. It is recovering in Connecticut. It does not crack as formerly.

SAUL.—I never had it crack yet, nor the *Gray Doyenne*.

ROGERS.—It cracks badly, but is variable. It is sometimes beautiful.

Wilbur.—HOVEY. Strike out one of the stars for Massachusetts.

NEW VARIETIES OF PEARS.

Petite Marguerite.—BERCKMANS. It is small, but will make one of our best early pears.

Pitmaston Duchess.—SAUL. I would recommend it.

General Taylor.—ROGERS.—The most valuable of all varieties, in fall, for this market.

Homewood.—HOVEY. A synonym of *General Taylor*.

GRAPES.

Adirondac.—Two stars for Maryland.

Rebecca.—SAUL. It is not grown in District of Columbia. It grows well under glass.

Schraiddt.—WARDER. An exceedingly promising grape, of the *Clinton* class.

Senasqua.—BERCKMANS. I would recommend it as desirable.

Elvira.—DR. WARDER suggests that it is promising.

Champion.—BARRY. Early, handsome, sells well; is not very good.

Worden.—SYLVESTER. I have fruited it several years. It is a week earlier than the *Concord*. A little better.

PEFFER.—Promising.

Janesville.—Named by PEFFER.

Brighton.—Named by MILLER.

HOOKER.—A very fine early grape: easy to grow, hardy, of fine size, handsome appearance, excellent quality: one of the strongest growers.

HOVEY.—The greatest addition since *Concord*.

HOOKER.—It has the best foliage of any good table grape.

STRAWBERRIES.

Col. Ellsworth.—HEXAMER. Take it off.

Ida.—HEXAMER. Take it off.

Jenny Lind.—HEXAMER. Take it off.

Napoleon III.—HEXAMER. Take it off.

Peabody.—HEXAMER. Take it off.

Victoria.—HEXAMER. Take it off.

HEXAMER.—*Champion, Duchess, Great American, Sterling* and *Duncan* should be on the list; also *Prouly*.

BUCHANAN proposed *President Lincoln*.

PARRY proposed *Durand's Beauty, Centennial* and *Pioneer*.

AUGUR proposed *Crescent Seedling*.

WARDER proposed *Forest Rose*.

SNODGRASS proposed *Pride of the West*, of Fairfax County, Virginia.

HOVEY proposed *La Constante* and *Highland Beauty*.

ENGLE proposed *Springdale* and *Cumberland*.

PARRY proposed *Captain Jack*.

STURTEVANT proposed *The Belle*.

FLAGG presented table of species of fruits. It was voted that it be printed after the list of fruits in the Catalogue.

Adjourned to meet on the boat at 9 A. M. tomorrow.

THIRD DAY--THE EXCURSION.

[From the Baltimore American.]

The Pomologists.

AN EXCURSION DOWN THE BAY—THEIR ENTERTAINMENT AT RIVERSIDE BY COLONEL EDWARD WILKINS.

The distinguishing feature of yesterday was the excursion on the steamer Samuel J. Pentz, Captain J. H. Kirwan, to "Riverside," fifty miles from Baltimore, on the Chester river, the great peach farm owned by Colonel Edward Wilkins. Two hundred delegates from various States and a large number of well known Baltimoreans composed the party. Captain Kirwan was polite and attentive. Colonel Ensign, the President of the Maryland Steamboat Company, which owns the steamer, was assiduous in pointing out places of interest to the visitors. Purser Clemm was a genial caterer, Engineer Wm. Rush made his best time, and the trip was altogether one of the most delightful ever made by the Pentz, which enjoys a distinction, well deserved, in that regard.

Leaving Baltimore at 8 A. M., the steamer went down the harbor with flags fluttering and Professor Itzell's band playing. She kept nearest the west shore, so as to give the strangers a good view of the elevators, the European steamships and Fort McHenry. There were many on board, including several ladies, to whom the sight of an ocean steamship was a novelty. It happened, opportunely, that on this occasion there were seven foreign steamships in port, an unusually large number. The day was delightful, the shores were bright and green, and the water view was engaging. The low, flat shores were comparatively new to the most of the delegates, who came from localities where the shores are hilly or in bluffs. Entering Chester river a fine survey of the oyster farms was afforded, but this was no rarity to some of the New England delegates, who have oyster farms of their own. The scene of the dredgers, with their red shirts, in little skiffs on the bright water, when looked at in the distance, was very attractive

A PROCESSION.

Upon arriving at the wharf at Riverside, the visitors were met by Colonel Edward Wilkins, who here for the first time in many years met some of his fellow-growers of fruit on a large scale. The delegates, members and invited guests then formed in procession, with a band of music in advance, and marched the quarter of a mile from the wharf to the manor. Mr. W. H. Perot, President of the Maryland Horticultural Society, and Colonel Wilkins walked in advance, arm in arm. The grounds traversed were handsomely laid off and ornamented with box borders, pretty shrubbery and roses and other flowering plants in bloom. Upon arriving at the broad lawn, as soft and smooth as though covered by a carpet of green, the company scattered, some taking seats under the fantastic magnolia trees, others taking seats in the halls and piazzas of the large, old-fashioned house, and more again moving about the place examining plants and trees of interest.

The excursion was by invitation of Colonel Wilkins, who had made ample provision for the comfort and entertainment of his guests. It took him nearly a half hour to get through hand-shaking with the many whom he knew and those who were brought forward and introduced. Colonel Wilkins seemed to regard the occasion as a very happy one, and had a smile and a cheerful word for every one.

DINNER ON THE LAWN.

Among the two hundred visitors were a large number who are known widely in fruit and floral associations. Among these were Wm. Saunders, Superintendent of the Agricultural Department, at Washington; Wm. R. Smith, Superintendent of the Botanic Gardens, Washington; Dr. Jos. E. Snodgrass, Secretary of the Potomac Fruit Growers' Association; Professor Brainerd, prominent as an essayist and writer; Dr. Briggs, of Suffolk county, Va.; G. F. B. Leighton, of Norfolk, Va.; Judge Schley, of Georgia; Colonel Daniels, of Virginia; A. J. Caywood and Dr. Culbert, of New York,

and others well known. Among the Baltimoreans present were George W. Abell and Edwin F. Abell, of the Baltimore *Sun*; O. A. Kirkland, Mr. Atkinson, of A. Schumacher & Son; Charles H. Mercer, J. Mowton Saunders, W. D. Brackenridge, A. P. Sharp, E. D. Miller, James A. Henderson, A. and E. Hoen, Sheriff Mills, J. Adae Honek, W. K. Carson, W. A. Page, James W. Clayton, James H. Wood, and others.

Mr. R. S. Emory, also a large Maryland peach grower, who assisted Colonel Wilkins in doing the honors, invited all present to a long table under a shady tree, where they were initiated into the mysteries of the compound known as "peach and honey," for which the Eastern Shore is especially famous. At noon dinner was served at a series of tables on the lawn, which were loaded down with every sort of delicacy, including fresh oysters taken a few hours previously from the waters hard by. Although so early in the season the oysters were of good size, and their flavor was better perhaps than that of oysters which will be caught later. Over two hundred and fifty persons sat down to dinner, and every one had more oysters, ripe fruit and a dozen other varieties at command than they could accommodate. Mr. Perot, of Baltimore, proposed the health of Colonel Wilkins, which was drank standing, and followed by three rousing cheers that sent long echoes over the water.

PICKING PEACHES.

At 2 o'clock P. M., about a hundred of the visitors took conveyances, and guided by Mr. Emory, drove several miles through the surrounding peach-growing country. Colonel Wilkins has 1,100 acres under cultivation. His orchards contain 125,000 peach trees and about 25,000 other fruit trees. The crop of peaches this year has not been large, owing to a destructive hail storm which occurred last month and wrought sad havoc. From Mr. Wilkins' place the visitors went to adjoining fruit farms, finishing up with Mr. R. S. Emory's fine tract of nearly a hundred acres. Mr. Emory grows pears mostly, and has been very successful in their cultivation, although the hail storm also lessened his crop about one-half. In different fields he has trees of different ages. From his 15,000 pear trees he has averaged 1,500 boxes annually for over ten years. The peaches grown by him are of kinds that he has tested by many years of experiment and found advantageous. From the balcony of Mr. Emory's house the visitors had a splendid view of Chestertown, a few miles away. Driving through the 400 acres of Mrs. Hi-

ram Brown, the Heath and Hale peach trees were found in many instances broken from the immense number and weight of the peaches on the branches.

THE RETURN.

When the peach tourists arrived back at Colonel Wilkins' place they were met by those who had remained, who were drawn up in line, and saluted them with cheers, affording a good deal of merriment. Mr. Emory again brought out the "peach and honey," and at 4 P. M. the visitors marched back in procession to the steamer, which started on the return. During the trip back supper was served by Mr. Robert Renhart. It was a feast of varieties, excellently cooked and served in an admirable manner by experienced waiters, under the direction of Mr. Peter Lynch. Champagne and fruits closed the feast. The management of the whole excursion was unexceptionally good, and reflects credit upon the committee of the Maryland Horticultural Society who had it in charge. This committee was composed of James Pentland, August Hoen, J. Mowton Saunders, S. H. Corydon and W. D. Brackenridge. Mr. Pentland especially was assiduous in his endeavors to make the affair agreeable to every one, and did not have a moment's leisure the entire trip.

ON THE BOAT—4 P. M.

The Secretary called the meeting to order. Dr WARDER was called to the chair and called for further business.

CAYWOOD, of New York, asked for experience in blight of *Beurre Clairgeau* pear.

BRIGGS.—It drops its foliage and sheds its fruit: the fruit was spotted with black at the Centennial and elsewhere.

SAUL, of D. C.—I find it dropping its leaves so as to be worthless.

CAYWOOD referred to ordinary blight.

FLAGG.—It is quite free from blight with me.

MEYERS.—With me it is not troubled with ordinary blight, but in common with many others, it drops its leaves.

SAUL.—I never lost a tree by blight.

BRACKENRIDGE.—The evil complained of, dropping its leaves and black spots, may arise from bad cultivation or poverty of soil.

BRIGGS.—I never saw it blight.

BRACKENRIDGE.—I have never seen it blight.

CAYWOOD.—Leaf blight is common to all pears. I have had two or three blight badly.

MEEHAN.—No kind is exempt from pear blight.

DURAND.—What is the injurious effect of high cultivation? Excess of sap is a great help to blight; I think high manuring, therefore, injurious.

FIELD.—I have an orchard of 300 trees. Up to last year I had no blight; but last year the *Belle Lucrative* blighted to a tree.

BRAINERD.—The President of the Potomac Fruit Growers' Association brought me limbs affected with blight. I studied them with the microscope three weeks; found *Scolytus pyri*. I dissected more than fifty spurs without finding this insect. I then examined the alburnum; heated limbs to 108° and it gave the appearance of blight.

A motion was made to suspend discussion on blight, which was carried.

HEXAMER asked about *Early Kent* gooseberry.

MOODY.—Pear blight is an interesting subject.

A motion was made to reconsider the discussion upon blight, which was carried—22 for it; 11 against it.

MEEHAN.—I have nothing in particular to say; different gentlemen talk about different things. The most disastrous is fire blight. Another is twig blight, and still another is leaf blight—I think Prof. Brainerd is talking of spur blight. The blight that is supposed to arise from heat I have found everywhere in all kinds of climates, soils and situations in the United States. I think abrasion makes no special difference. The cause is a small, minute fungus that penetrates the bark. The cause of the fungus I cannot tell. It is propagated by spores from which it is reproduced. Steps to a remedy are washes that will destroy the spores, especially sulphur ones. It is the same with grape mildew. Trees continually washed, and even whitewashed, I think, are more exempt. The old custom of whitewashing fruit trees was useful. [Applause.]

CAYWOOD.—I supposed leaf blight was fire blight.

HADWEN.—I have been much interested in the remarks. Have had an experience of forty years myself. Very thrifty pear trees are more liable to blight, and this year those on a northern aspect more so than elsewhere; but most on the south side. Pears trees receiving wash of barn blighted when others did not.

AUGUR.—Have seen on several places severe blight on northern exposure, and none on the southern.

MOODY.—I have had a little experience. On northern, gravelly, clay loam, as best adapted, I set 500 trees, and the majority of them are dead with blight. I set 1,000 among orchard trees, and only one blighted. Leaf blight can be cured; it is a fungus.

SAUNDERS, of District of Columbia.—Ten years ago *Louise Bonne of Jersey* had commenced to blight on the main stem, a foot from the ground. I watched it spread a week or two. When there were only two inches of clean bark left, I cleaned and put on wash of lime, salt and sulphur. The blight stopped. I have never seen a portion of a tree washed with sulphur and lime that blighted.

ROGERS.—Has the fungus been examined? Yes.

BRAINERD.—I used one of the best instruments I could procure, and could discover no fungi, until sometime after blight took place.

MOODY.—I would recommend salt and unleached ashes, for leaf blight, sowing liberally.

HEXAMER.—Moved to lay on the table. Carried.

EARLY KENT GOOSEBERRY.

MASSEY.—Some years ago found a gooseberry in Mr. Emery's charge, earlier and better than the *Houghton*. It was introduced by a man named Clay, near Chestertown. Mr. Emery got it, and planted it in place of the *Houghton*. It is claimed to be an English variety, but never mildews. Mr. Nicholson said. It is no larger than the *Downing*, and not quite so strong a grower, but is a week or ten days earlier. I got stock in 1870 and 1871.

HEXAMER.—It is the same with me as *Houghton*.

SAUL.—A little earlier and larger, but native.

The Committee on Resolutions reported through Mr. Brackett, of Iowa, thanking the Maryland Horticultural Society, Col. Wilkins, Col. Colman and others, for the many kindnesses shown the members during their stay. Unanimously adopted.

Adjourned *sine die*.

ESSAYS AND CORRESPONDENCE.

The Origin of the Cultivated Apple, and an Abstract of the Existing Species of Apples.

By DR. GEO. VASEY, Washington, D. C.

Our word apple is of Saxon origin. Whether from its very origin it signified an edible fruit of the genus *Pyrus*, or at first signified large edible fruits in general, we are not able to determine; certainly in all recent times it has been used in the restricted sense. The name *Pyrus*, or more properly *Pirus*, which Linnæus gave to designate the apple family, was adopted from the Latin, in which language it denoted the pear. The specific name *Malus*, which Linnæus employed to distinguish the cultivated apple, was from the Greek, and originally was applied to any edible fruit of a tree, later it was restricted to the apple family including the pear, apple, quince, etc., and finally limited to the apple alone.

In the English translation of the Scriptures, and of the old Greek and Roman writers, we find the word apple, but there is little evidence that the fruit intended was our apple. Indeed, it is quite probable that our fruit was unknown to the Hebrews; and among the Greeks and Romans the apple, the quince, the apricot, the peach and the pomegranate were all called *malon*.

The Hebrew word which is translated apple is *tappuach*. Etymologically, this word denotes something of delightful odor, and is probably a collective term applied to a variety of fruits, among which are the citron and apricot. It is, probably, useless to attempt to arrive at certainty as to the precise fruit or fruits indicated in ancient writings. It is quite probable that our apple was among the fruits which were known and esteemed among the ancients, although so far as Palestine is concerned it is said not to be now found wild there, nor does the climate seem suited to it.

There is evidence that the apple was employed as food in certain parts of Europe at a very ancient period, perhaps even before the period of written history. The carbonized seeds and fragments of apples and other fruits are found in the mud

of certain lakes in Switzerland, where the pile-builders or lake-dwellers had their habitations. These remains have an age variously estimated at from 5000 to 50,000 years. It might be supposed that these vestiges were wild or crab-apples, the native produce of the country, and such is probably the fact. But, according to Prof. Karl Koch, author of a recent very elaborate and scientific work on Dendrology, there are no species of apples truly indigenous in Europe, those which are found growing without cultivation being only escapes from cultivation, or the result of accidental sowings of common apple seeds. If this statement is correct, the question arises, whence came the apples and fruits of the pile-builders? The same question might be propounded with respect to the wheat which is found in the debris of their dwellings, and the answer to the one question would probably be an answer for the other. It is not improbable that the distribution of grains and fruits among the nations of the earth has a much greater antiquity than has commonly been admitted.

In attempting to determine the original specific character of our common apple we have to deal with a difficult question. The apple of the present day is the product of centuries of cultivation and horticultural skill, and the transformations and modifications effected thereby are such that we need not be surprised if we are now unable to recognize the original or parent stock. Linnæus named the common apple of cultivation *Pirus malus*, taking as the type the common seedling apple, which he appears to have considered a good species, and the same view has been generally entertained by succeeding botanists. But scientific inquiry has been greatly stimulated and extended within the past half century, and theories and opinions that once passed current, have been subjected to the severest scrutiny. In the investigation of scientific as of moral questions, when doubt obtains license, it sometimes happens that new ideas are pushed to an extreme. Let us then, briefly consider the argument in this case.

In the first place it is asserted that if our cultivated apple were a distinct species it would yet be

found growing in a wild state in the country or countries where it originated. It is generally admitted that the earliest human civilization took place in Western Asia, and in that country, or in Southern Europe, we should naturally expect to find the apple in its native condition.

But, according to Prof. Koch, there is no truly wild apple to be found in these countries, the so called wild apples being merely such as have escaped from cultivation. According to his view the apple of cultivation is the result of the crossing and intermingling through many generations of four and perhaps five species of *Pirus*, some of which are still growing in an indigenous condition in some parts of Asia. These original species he considers to be, 1st, *Pirus pumila*; 2d, *Pirus dasycphylla*; 3d, *Pirus sylvestris*; 4th, *Pirus prunifolia*, and perhaps *Pirus spectabilis*. These will be subsequently mentioned more particularly. I will here only state that of these five species Prof. Koch expresses doubts as to the true specific character of two, and suggests that they may have originated through long culture by the hybridizing of some of the other species. The native country of one is China, and of the others, Northern China, Siberia, Caucasus and Tartary. The remote localities of these species from the supposed centre of early civilization will, to some minds, be an argument against counting them as the parents of the present cultivated apple. It may also be said that the fact of the common apple being nowhere now found in a truly wild state, does not amount to proof that it had not a separate specific origin, for it is well known that many other cultivated plants of the greatest importance as food for the human family are not now found in a wild state. Many plants in their native condition have comparatively feeble hold on existence, growing very sparsely and in a few restricted localities, and we can readily understand that such plants, unless taken up and fostered by cultivation, would soon disappear before the advance of civilization. For example, although it is probable that the original of our potato, *Solanum tuberosum*, is yet to be found in some localities in South America, it is not at all improbable that in a few centuries, the botanist may search its native land in vain for any vestige of the wild plant.

If our cultivated apple were a hybrid, the product of a mixture of several species, we might expect that the law of reversion would reveal to us its true parentage. It is claimed that a correct and satisfactory result from the action of this law could be reached only by a series of experiments continued

with the greatest care for many generations. Prof. Koch states that experiments with the common garden Aster, which is cultivated in a great variety of forms, have taught him that all the forms of that plant after six, eight or ten years revert to the original type.

We would inquire if it may not be possible that Prof. Koch has not over-estimated the changes and modifications which cultivation has made upon our apple. There are, it is true, several hundred varieties known to cultivators, but the larger portion of them have originated in recent time. That all these varieties have a not very distant origin would seem to be indicated by the substantial resemblance of the seedlings raised from such widely diverse varieties.

In tracing the history of this fruit it is not necessary to go back to an imaginary period when it was so inferior in size and flavor as to be unpalatable and totally unfit for use. Of all the eastern species which have been claimed as parents of the cultivated apple, not one probably equals the common American Crab in acerbity. Nature produces many other fruits of acknowledged excellence in a wild state, as for instance, delicious strawberries, raspberries, blackberries, &c., to say nothing of very passable wild oranges, figs and numberless other tropical fruits.

Having once obtained a superior variety of fruit, the skill of the horticulturist is employed to multiply and perpetuate it by the processes of grafting and budding, processes which preclude to a great extent any further deviation, because they are a-sexual and artificial processes. Natural variation manifests itself principally through the action of the floral or sexual organs of plants. This action, whatever may be its nature, is impressed upon and fixed in the seed. The most of our cultivated varieties, including some of the best, have originated spontaneously, that is without purpose or anticipation on the part of man, but we are unable to perpetuate those varieties by means of the seed, the common course of seedlings from all varieties being to revert to an inferior form; hence, we may reasonably suppose that the ordinary seedling represents somewhat fairly the original form of the species.

Having thus stated various opinions respecting the origin of our cultivated apple, we will now give a brief sketch of the different wild species, all of which are inhabitants of the Northern Temperate Zone.

The genus *Pirus* is classed in the natural order *Rosaceæ*, the family which includes the Rose. It

will not be necessary here to give the botanical characters of the genus, but we will only state that it is subdivided into several sections, as the Apple section (*Malus*), the Pear section (*Pirophorum*), and some botanists add as another section *Sorbus*, or the Mountain Ash section. We do not propose to speak of any but the section *Malus*.

In enumerating the species we will place first in order the five species which Prof. Koch supposes to have contributed to the production of our cultivated apple, and of these, as we have before stated, he expresses doubts respecting the real specific nature of two, thus reducing the number of fundamental species to three; then we will add the remaining indigenous species, which he does not suspect to have had any participation in what he regards as our hybrid.

1. *Pirus pumila*, Mill. (*P. malus*, var. *Paradisica* L.)—This is called the Paradise Apple, and in France the Doucain and St. John's Apple. Its native country is said to be South-eastern Russia, Caucasus, Tartary and the Altai Mountains. It forms only a low tree, or sometimes a tall shrub. The leaves are elliptical, and woolly on the under surface. On account of its rapid and low growth this is principally used as a stock for dwarf apples.

2. *Pirus dasycphylla*, Bork.—This is enumerated by Prof. Koch as a species, and yet he says that it is certainly nothing more than an apple tree become wild, and was counted by the elder Koch in 1843 as *Pirus malus*, variety *tomentosus*. Prof. Koch says it does not now grow truly indigenous in the East, and asks if it may not have arisen through long culture. Linnæus, indeed, considered this as the original of the cultivated apple. It is found in cultivation in Europe under many different names, among which are *Pirus pulverulenta* and *Pirus armeniacaefolia*.

3. *Pirus sylvestris*, Mill.—Prof. Koch says that probably Southern Siberia and Northern China is the native country of this species, and that it is frequently found growing wild in Europe as an escape and not as a true native. He remarks that by cultivation a series of varieties has arisen from this species, some of which resemble *Pirus pumila*, and some *Pirus prunifolia*. Indeed he suggests that it may possibly have arisen by cultivation from *Pirus prunifolia*.

4. *Pirus prunifolia*, Willd.—The plum-leaved apple. The native country of this species is said to be Southern Siberia, Northern China and Tartary. It is the tree, or at least one of the forms of the tree, which is so commonly cultivated as the Siberi-

an Crab. It is a beautiful tree both in flower and in fruit.

5. *Pirus spectabilis*, Ait.—The native country of this species is China. It is closely related to *Pirus prunifolia*, but is distinguished by its longer and narrower leaves (2 inches by 3), which are duller in color, and retain longer the hairiness of the under surface; by the larger size of the flowers, and the more numerous cells of the fruit. There are several varieties in cultivation, as *Malus floribunda*, *Malus Kadio*, and *Malus Ringo*.

6. *Pirus Ussuriensis*, Max.—This is a handsome small tree, a native of South-eastern Siberia. Prof. Koch says that this agrees in the main with *Pirus sylvestris*, and he suggests that it may be the mother plant of that species.

7. *Pirus baccata*, L.—The popular name which Prof. Koch gives to this species is the apple with berry-like fruit. Its native land is said to be Siberia. It is more commonly a bush than a tree, with roundish or short lanceolate leaves, which are always pointed, mostly smooth and without woolliness, and toothed on the margin. Not only has the tree a pleasing appearance at the time of flowering, but it is much more pleasing when the branches are covered with the clusters of long-stalked berry-like apples. Several varieties of this species have been produced by cultivation, of which those called *cerasifolia* and *sphaerocarpa* are the principal.

8. *Pirus Toringo*, Lieb.—The native country of this species is Japan. It is both bushy and tree-like. It has most resemblance to that variety of *Pirus baccata* called *sphaerocarpa*, but is distinguished by smaller fruit, by darker colored and somewhat thicker leaves, which are also more or less incisely toothed.

We next come to consider the American species of this group. They are three in number.

9. *Pirus coronaria* L.—Our common Crab apple. This species is found wild over a large part of the eastern portion of the United States and Canada. It is a small sized tree, attaining the height of twenty feet, branching low with stiff horizontal limbs. The fruit is about an inch in diameter, generally very acerb and unpalatable.

10. *Pirus angustifolia*, Ait.—The narrow-leaved Crab apple. This species differs little from the common Crab apple. Its leaves are longer, narrower and less disposed to be lobed, and in the flowers there is less union of the styles than in the preceding. Its range is not as well known, but it occurs in Virginia, in the Western States, and in Kansas.

It is doubted by some botanists if it should be considered more than a variety of *Pirus coronaria*.

11. *Pirus ricularis*.—This is the only Crab apple known on the western coast of North America. It occurs in Alaska, and descends to Oregon, Northern California and Nevada. Its fruit is about the size of a small cherry and is employed by the Indians of Alaska as a part of their food supply. Prof. Koch thinks that it is probably identical with the Japan species, *Pirus Toringo*, but we hardly know sufficient about either to decide this point.

Classification of Apples.

By Professor W. J. BEAL, of Lansing, Mich.

A natural classification would be one in which every distinguishing feature of the plant was considered, giving each character its due weight. This would include the peculiar features of the young embryo as it began to germinate, following on with every step in its growth to a mature plant bearing fruit. In such a classification nothing must escape notice. The twigs, buds, leaves, all parts of the flowers, fruit and seeds—every point must have its due weight in determining the relations of each variety to all the others. The varieties of apples have become so numerous, that each should be more completely described than has generally been customary. In defining wild plants, the botanist places great stress on the peculiarities of the flowers. I believe these characters are of great value in describing our apples. I will briefly describe and compare the flowers of a few of the varieties first examined. The petal of the *Red Astrachan* is ovate, and on the average of many specimens is one and a fourth inches long by three-fourths broad in the widest place. The petal of a *Talman Sweet* is elliptical, twelve-sixteenths by seven-sixteenths, just about long enough to reach across the widest part of a petal of the *Red Astrachan*. The petal of the *Porter* is nearly orbicular, cordate at the base, with a very short claw or stem. It is twelve-sixteenths by thirteen-sixteenths of an inch in breadth and length.

The petal of a *Sweet Bough* is broadly ovate, or elliptical ovate, seventeen and fourteen-sixteenths inches across the surface, having a distinct claw.

This is enough to show something of the great value of the petals in describing apples.

On the *Red Astrachan* the styles are seven-twelfths of an inch long, united for one-third to two-fifths of an inch, and then diverging. They are slightly pubescent where they begin to separate; above and below they are smooth. In the *Talman*

Sweet, the styles are five-sixteenths of an inch long. The upper half of the five styles is closely covered and matted together by a dense woolly substance. In the flowers of the *Jersey Sweet* the styles are short, stout and twice the diameter of those in the *Seek-no-further*.

The *Journal of Horticulture and Cottage Gardener*, 1876, p. 185, gives something of a new classification of apples by Robert Hogg. The only new points used are those based on the shape of the calyx-tube and the position of the stamens in the tube.

The *calyx-tube* varies in form from conical to funnel-shaped, and is seen between the eye and the core on making a longitudinal section of an apple through the center.

The *stamens* form a bristle-like fringe round the inner surface of the calyx-tube. Some form a fringe immediately under the base of the segments, and are called marginal; others are medium; others situated near the base are called basal.

To test the value of these new characters of Dr. Hogg, I have examined a large number of our apples. In the first forty-eight varieties examined, seven had the stamens marginal, twenty-four medium, three basal, eight between marginal and medium, six between medium and basal. As we should expect in any character, it is sometimes very decisive and of much value, while in other cases it varies or is so near midway between two forms that we can make little use of it.

An artificial classification is based on some one point or a few points of difference, ignoring all other points, any of which may be important. As an illustration, we may call all apples sweet or sour, large or small, striped or not striped. So in botany, the best artificial keys in our text books require the student to divide only one, two or three points at a time. This one divided, he leaves it for the next, and so on till the specimen is separated from all others.

Mr. A. J. Downing believed the classification of apples to be impracticable, and arranged his fruits in alphabetical order. Mr. Thomas, Barry, Dr. Warder and some others, have arranged the varieties in a way to assist a person in finding the name of an unknown fruit. Many of us would like still more aid to make it easier to trace out an apple.

If an apple is of such a size as to make it doubtful whether to call it large or medium, place it in both classes in the key. So with other points which are likely to be misunderstood as to shape, time of maturing, etc.

Many fruits are still very imperfectly described. To make use of the new characters of the flower, it will be necessary to go again over all the work of others in examining fresh specimens when in flower and in fruit.

In the classification which I have adopted, I first decide whether the apple is sweet or sour; second, is it ripe in summer, autumn or winter; third, is it striped with red, not striped nor russet; fourth, is it flat, round, conical or oblong. These four points can be expressed in a key on two pages of a book facing each other. At the end of each line in the key I give the page on which to continue the investigation.

After making use of these four classes, I do not pursue any definite order, but make use of just those points which seem to me most characteristic. In some it may be the basin, in some this may not be a marked feature. I seize whatever is the most striking point for contrast between any two apples or lot of apples in hand.

I have made free use of a recent paper of mine in the Michigan Pomological Report for 1876.

Grape Rot.

From Hon. ISIDOR BUSH, Bushberg, Jefferson Co., Mo.

Gentlemen:—Deeply regretting that I am prevented from meeting with you in person, I beg to address you at least by pen, as a member of this Society, hoping that your consultation on the subject herewith submitted may result in some good to that important branch of fruit culture—the grape.

While we have reached a better knowledge of the classification of American grapes, their adaptation to the various sections of our country, and have advanced in the production of new, hardy and valuable varieties; while experience has taught us their proper mode of culture and to avoid losses formerly sustained by trying to raise foreign vines and their seedlings; while France, the foremost wine country of the world, begins to acknowledge and proclaim the great value of American grapes, not merely for the resistance of their roots to the phylloxera, but for the excellence of the fruit in several of our varieties, and begin to plant them there largely for their own production*—most of our grape growers here become very much discouraged, and hundreds contemplate abandoning its culture, and even grubbing out their vineyards, on account of the *grape rot*.

I am well aware that this is no new disease. Longworth, of Cincinnati, wrote in 1849 of his oldest

vine dresser, Father Ammen, that he became dispirited, as the *rot* blasted his hopes: he got sick, refused taking medicine, saying, "what do I want to live for? my grapes are all rotten." In a communication of Longworth, read Oct., 1848, appended to the Report of the Committee on Fruits, we find that "previous to the last six or eight years we had much less of rot, yet our soil was then the same and our rains as frequent and heavy."

I am aware also, that the same old vineyards which had suffered severely from rot for some years, had *no rot* at all in a subsequent year, but nevertheless it caused grape growing to be almost entirely abandoned around Cincinnati and in many other localities where it first flourished. In later years the same trouble was experienced wherever American grape culture had been commenced on a larger scale, and it would have been deserted had its success depended on the *Catawba* and *Isabella* alone, as it did center for years on these two varieties. The introduction of others, especially the *Concord*, which were pronounced and supposed to be entirely free from rot and mildew, gave a new impetus to grape-growing, and it promised to become one of the great industries of our country, a source of wealth and enjoyment to its thousands of producers and consumers.

The last few years' experience has unfortunately shown that the *Concord*, and in fact, more or less, all varieties of *Labrusca*, all hybrids, and all our *Estivalis*, with the exception, perhaps, of *Norton's* and *Cynthiana*, are no less subject to rot than *Catawba*; and if some new varieties are to-day yet exempt, we cannot have faith in their future freedom from this disease, which has increased during the last years in violence, destructiveness and extent of territory to such a degree as to justify almost despondency among grape growers.

I still hope that the true character and cause of this disease, and consequently the possibility of avoiding or curing it, may be found out by careful, scientific investigations. But mere notions and opinions, aye, even the intellectual views of the practical vintner, are insufficient in this matter. Thirty years ago (in 1848), the before mentioned report of the Cincinnati Horticultural Committee gave as the cause of rot in grapes, "their location, being confined in situations not fully exposed to the air and their proximity to orchards or woods;" to which Mr. Longworth objected, as in his vineyards "fully exposed to the sun and air, and facing east, west, north and south, with no tall trees in the vicinity, the rot has prevailed *in all*, and in some

* See *Messager Agricole du Midi; La Vigne Americaine*, &c.

seasons two-thirds of the crop was lost." He found that where the ground was more porous, there was less rot; in the bottom, where the rain immediately sank deep in the earth, where the subsoil was mixed with sand or gravel, there was no rot. He consequently attributed the rot chiefly to a stiff clay subsoil. Yet he relates himself that he asked a man, of whom he bought some excellent Catawba wine, if his grapes rotted the past season. He replied *not*, and that rot in the vineyards of all his neighbors had been severe. Longworth observed, "yours must be a sandy soil or more porous than your neighbors'." The man replied, "a stiff, subsoil clay, the same as his neighbors'"; that he could give but one cause for his success: that before the rot began his time had been so much taken up by his farm, that he neglected to hoe his vineyard and it was full of weeds. Finding his not to rot, while the well hoed vineyards of his neighbors suffered severely by the rot, he left all standing and had a full crop. Mr. Longworth adds: "I recollect, some years since, when my vineyards suffered severely from rot, some of my lazy tenants, who left their vineyards in grass and weeds, escaped the rot, while the clean vineyards of their neighbors adjoining, and their own portion cleaned, suffered badly from the rot; and they attributed their escape to their idleness in not cleaning their vineyards. I was and am unwilling to believe this,

"But facts are chiefs that winna ding
And canna be disputed."

Similar conflicting testimonies can be found in all that has since been said and written on the subject. Some are led to believe that early and close summer pruning is a partial preventive against rot, while others attribute their partial exemption from rot to non-pruning in summer. For many years I was led to believe, with many others, that we must ascribe the *rot* to an exhaustion of some ingredients in the soil or in the plant from bearing a few heavy crops, as young vines, in their first and second fruit bearing seasons seemed exempt: that consequently a renewal system by layering and manuring would have to be adopted. But again, we found that some young vines, this year a great many, only three to five years old, with as vigorous a growth and as healthy foliage as was ever seen, rotted even their first crop of fruit, for which the promise, in June, was splendid.

The appearance of the rot in grapes under quite heterogeneous circumstances, conditions and treatments, still more, the various singular cases of exemptions from the disease in the very midst of

like conditions, render the question unusually perplexing.

To tell us that "it is a disease of fungoid origin" is no solution of its problems; and the sulphur remedy, so readily recommended in all such cases, is certainly quite ineffective against *rot*. Hon. W. J. Flagg, the champion of sulphuring, admits himself that "this black rot came and went as it pleased, without regard to the sulphur, no matter how thick it rested on the berries." He will have found out also, by this time, that the *Oidium* of Europe and our *Peronospora* are widely different mildews, and that, unfortunately, sulphuring is by far less effective on the latter than on the former. Prof. Farlow, of Harvard, justly apprehends that the introduction of this parasitic fungus in Europe may have as grave consequences as that of the phylloxera itself. And yet, while sulphuring is of no avail, and some experiments of fumigating with coal tar and sulphur, which I made, proved ineffective, there seems to be something in the smoke and atmosphere of large cities which acts as a protection against rot on the vines in its immediate vicinity.

Feeling that this question requires the most earnest investigation of men skilled in microscopy and chemistry, aided by fruit culturists, I have addressed the Hon. Wm. G. LeDuc, our new Commissioner of Agriculture, and have received his kind reply on the subject. And I herewith hand you a copy of this correspondence, in the hope that you will cheerfully aid, as far as you may be able, in his endeavor "to grapple with this question, and to discover as speedily as possible the cause of and remedy for the rot."

Very respectfully yours,

ISIDOR BUSH.

*To the Hon. M. P. Wilder, President, and Members
of the American Pomological Society.*

[The correspondence alluded to is omitted.—*Secretary.*]

Pathology of Cultivated Plants.

FROM PROFESSOR A. N. PRENTISS.

CORNELL UNIVERSITY, }
ITHACA, N. Y., Sept. 1st, 1877. }

HON. W. C. FLAGG, *Secretary American Pomological Society:*

Dear Sir:—I find that I shall not be able to attend the meeting of the American Pomological Society in Baltimore on the 12th inst., nor have I found opportunity to do such special work bearing upon my proposed paper on the "Pathology of Cultivated Plants," as would be required to give it suitable shape for that occasion. I have been giving

this subject considerable attention for some years, but it is one presenting very numerous difficulties. The facts bearing upon it are of a peculiarly obscure nature, and are to be arrived at only after long continued research, observation and experiment.

The matter of the health and disease of our cultivated plants has been too long practically ignored, especially when we consider that the success of the agriculturist, the fruit-grower, the nurseryman and the florist, is in reality measured by the degree of vigor and health which such plants possess. We are not wanting in numerous, and in many cases learned and excellent works relating to the health and disease of our domestic animals; while as regards the diseases to which plants are liable there is very little known. The number of writings on the subject is very inconsiderable, and the reliable information afforded by them still more so.

Nor is this to be so much wondered at, when we reflect that the conditions and influences which affect the health of plants are more complex than in the case of animals. Plants in a high state of culture are in almost all cases in an abnormal condition, being artificial varieties or races of species, having lost to a large extent the characteristics of the species itself, including to a great extent its natural constitutional vigor. Under these conditions, plants must necessarily be predisposed to disease, under which predisposition they are markedly affected by every varying condition of soil and climate, heat and cold, moisture and drought; and especially by varying combinations of these conditions. For instance, the disease or destruction engendered by the cold of a given winter, might not have occurred had the conditions of heat or moisture, or both, during the previous season, been of a different character.

In general terms, the disease which invades our fields or orchards or gardens, is almost always induced by obscure, complex, and in many cases, far-reaching causes. The pear blight, or other disease, may not result from conditions which exist at the present time so much as from those conditions combined with others running back through many years, involving, it may be, years of faulty culture. This remark would hold true, although the immediate cause of the disease might be found to be of fungoid origin, it being well established that attacks of fungi are rarely injurious except the plant so attacked has already become more or less enfeebled through the influence of unfavorable climate, season, soil or other cause.

What we want is more facts and more reliable ones bearing upon the diseases of cultivated plants; and the one most valuable suggestion which I had expected to incorporate in my paper was, that the Society should appoint a committee which should be charged with the special duty of collecting facts and statistics relating to the whole subject. A list of suitable questions, bearing upon the matter from all standpoints, including cause, effect and remedy, sent out far and wide among intelligent fruit grow- and agriculturists, would, as I believe, elicit much needed and valuable information. The facts thus gathered, strengthened by some well devised experiments which scientists would no doubt be willing to make, and carefully elaborated in connection with the national meteorological reports, would in a few years afford information of very great importance as well as scientific value.

Very truly yours,

ALBERT N. PRENTISS.

HISTORICAL SKETCHES

OF

FRUIT CULTURE IN THE SEVERAL STATES, &c.

...

Arizona.

PRESCOTT, August 14th, 1877.

W. C. FLAGG, Esq., *Secretary, &c.*:

Dear Sir.—In answer to your postal to Ex-Gov. Safford, I would say that fruit culture is yet in such a state of infancy in this territory, as to hardly have a history, and I hardly think it would be worth while to attempt to get one for the purpose suggested by you.

Truly yours,

JOHN P. HOYT, Governor.

Arkansas.

LITTLE ROCK, Ark., Oct. 3, 1877.

W. C. FLAGG, Esq., *Secretary, &c.*:

Dear Sir—In compliance with the request of your Society I will endeavor to give a few facts concerning the rise and progress of fruit culture in Arkansas. Considered as a history of that branch of industry, all the information I can give will be incomplete and unsatisfactory. The first settlers in the state gave very little attention to the raising of fruit. In the hilly portions, very little was cultivated except a patch of corn for bread, while they depended upon game and mast fed pork for meat; and later when the low lands began to be improved it was for the purpose of raising cotton, and owners regarded their plantations as a means of gain rather than as desirable residences for their families.

As early as 1840, probably not one family in ten resident in the state, had a fruit tree upon their places. About that time Dr. Thurston moved into the north-western portion of the state, and commenced the planting of fruits; for an account of his success, and the results of his experience, I refer you to the accompanying communication from him, herewith enclosed.

About the same time, a few persons in the southern and south-western portions of the state began to cultivate fruit: for a more detailed account of what they accomplished I refer you to a communication from S. J. Mathews, Esq., of Monticello, which is herewith enclosed.

From the time above named the culture of peaches, apples, and in some instances pears, for home consumption, gradually increased until 1860, at which time peaches were abundant, apples plentiful, in some localities, more particularly in the north-western portions of the state, and occasionally a few pear trees would be seen. Small fruits were not grown except by a few individuals.

At the close of the war, as industry began to revive, more attention was paid to this branch than it had ever received before. In many places vineyards were planted comprising several thousands of vines, and strawberries and raspberries received attention, and the production of fruit so increased that in 1875 several towns, on the line of the Cairo and Fulton Railroad, received quite a revenue from fruit shipped to St. Louis.

I have no means of determining the amount shipped for that year, but am informed by express agents that, this season now past, three hundred thousand pounds of peaches have been shipped by them, and it is their belief that at least three times that amount were shipped in 1875.

The peaches now raised here are mostly late, and as the early varieties are the only ones which pay to ship, the amount shipped bears a very small proportion to the surplus produced.

For the past three years strawberries in considerable quantities have been shipped and have brought remunerative prices, but I have no means of determining the amount.

At the present time, in the vicinity of Little Rock, Van Buren, Hot Springs and several other places, vineyards may be seen covering from one

to fifteen acres: also small plantations of Strawberries, Raspberries and Blackberries cultivated exclusively for market, and the area planted in fruit is rapidly increasing.

Very respectfully yours,

C. C. BLISS.

VAN BUREN, Ark., August 9th, 1877.

C. C. BLISS, Esq.:

Dear Sir—Yours of 26th ult., received some time ago, and should have been replied to before now; but my entire time has been taken up in the nursery and orchard. It is budding season and that must be done in season or not at all. To write out anything like a history of my experience in fruit culture would require a volume to contain it. I can justly claim to be one of the oldest pioneers now living in Western Arkansas, whose sole occupation, for the last thirty-five years, has been fruit culture. To recount the vicissitudes through which I have passed, with its oft repeated failures at first, its partial successes as time progressed, with final victory at last, would no doubt interest a few, but would never be read by the masses, if published in every printed journal in America. By this I mean that we, at least in Arkansas, have not a reading people. But to be brief, I will say, that some thirty-five years ago I planted my first orchard, consisting of apples chiefly, purchased of a New York nursery and consisting of the following varieties, all of which I knew to be choice kinds, in the Middle and Northern States, viz: Newtown Pippin, Newtown Spitzenberg, Golden Swaar, Esopus Spitzenberg, Baldwin, Chandler, Duchess of Oldenburg, Golden Russet, Northern Spy, Rambo, &c., &c. All of which grew luxuriantly into good sized trees, and in six years all bore fruit, which either rotted on the trees before ripening or fell off before the first of August in a half ripe, half rotten condition. Worthless being no name for any of the whole caboodle, allowing me an Arkansas phrase. But for four to five years I persisted in the use of fertilizers; applied lime, ashes, barn-yard and stable manure, iron, cinders, charcoal, crushed bones, etc., with the same results, until I concluded to exterminate the entire orchard and try other varieties, and purchase, nearer home, such varieties as succeeded in Kentucky and Missouri. These I purchased at Louisville and St. Louis, and planted the following, viz: Ben Davis, Wine Sap, Limber-Twig, Horse Apple, Rome Beauty, Jennetting, Au-

tumn Seek-no-further, Pennock, Yellow Bellflower, Red and Grey Vandevere, Cooper's Market, and some early summer varieties, Early Harvest, Red Astrachan, Julien, Sweet Bough, Red June, Summer Queen. All of the later early summer varieties succeed admirably. Of the former all did more or less. The Ben Davis, Wine Sap, Horse, Rome Beauty, Seek-no-further and Bellflower prove to be worthy of cultivation in this section. But Jennetting, Limber-Twig, Red and Grey Vandevere, Pennock and Cooper's Market were so nearly worthless that I destroyed them after years of efforts at success. As time rolled on, however, new varieties sprang up among the great number of seedlings which Tom, Dick and Harry fortunately planted whole orchards of, in this and adjoining counties, and from which came the famous Shannon, Stevenson Pippin, Red Reserve, Webber, Arkansas Queen, the Peerless and others of equally choice quality, but not yet fully tested, and are yet nameless. But with the above enumerated variety, together with the following Georgia selections, viz: Shockley, Equinately, Buncombe, Junaluskee, Stevenson's Winter, Red Warrior and Hewes' Crab, we can and do produce as fine fruit as can be produced in any State in the Union. Indeed, our Shannon, Stevenson's Pippin, Arkansas Queen and Peerless have no superiors in any land, if any equals.

I might add that besides the varieties named in the foregoing list, I have thoroughly tested the fruiting capacity of over fifty others, chiefly varieties of less note, taken mostly from the Northern States, or of Northern origin. And in conclusion, on the subject of apples, I will only say, that I am fully convinced that Northern varieties of apples, as well as many other fruits of Northern origin, are so entirely worthless in the Southern States as to be not worth the labor of planting if furnished and delivered free of charge. Similar has been my experience with the entire list of cultivated plums and fine sweet cherries of the North and East of the United States. The Wild Goose plum, superbly fine and delicious fruit, is a perfect success here, and all others a failure. The Wild Goose is of North Carolina origin and fills an important vacuum. Of cherries, the Early Richmond and English Morello are the only varieties successfully fruited out of twenty-eight or thirty that I have fully tested, embracing Bigarreaus, Dukes and Hearts. The trees grow well and soon attain large size, and bloom every spring copiously and blast universally, setting no fruit. With grapes, I have had much trouble. Commenced planting in

the year fifty-seven, very few were in bearing before the war, through which none escaped destruction, and in the spring of sixty-six I resumed the business and planted in regular vineyard an even thousand vines, consisting of Concords, Clintons, Crevelings, Herbemonts, Delawares, Ionas, Israellas, Ives, Hartfords, N. C. Seedlings, Rogers' Hybrids, &c., &c., in all thirty-three varieties of grapes. All of which bore more or less in sixty-nine and seventy, and all either rotted totally or in a less degree, except Norton's Virginia, Delaware, Ives, Hartford, and Perkins. But I was not to be backed down by a little, or even a large amount of mildew and rot in the first and second crops, so I persisted in thorough culture, fertilizing, pruning, pinching, &c., &c., but all in vain; the more I strove the worse apparently was my success. So at last the process of extermination of certain varieties was commenced, and still others of later origin, and loudly praised excellence, were procured at high prices, and planted in their stead; all of which have likewise failed in the main: and, as yet, I can only claim perfect success with Norton's Virginia, Ives, Delaware, Hartford and Perkins. But I wish, however, to be perfectly understood not to mean that the foregoing statements are at all applicable to any portion of our country except this immediate valley, and fully in the cotton zone. For, indeed, there are localities and lands in large quantities in the mountains immediately north of us where every variety of grape, so far as yet planted and cultivated, has proved a success. For further remarks on this subject you are referred to accompanying document of Crawford County Immigration Statistics, under head of grapes and wines. In the cultivation of small fruits generally, Strawberries, Raspberries, Blackberries, Gooseberries, &c., I cannot complain of much want of success. All grow well and mature their fruits, or in other words there are but few varieties that do not succeed if properly cared for.

Pears of every variety are a most perfect success, but for the mysterious disease known as blight, which attacks the pear trees in any and all localities of certain seasons. Fortunately, however, there are some varieties that are entirely exempt from the disease. These are, viz: Duchess d'Angouleme, Virgalien, Seckel and Winter Nelis, also Summer Bergamot and some others of less note. In conclusion allow me to offer my apology for not writing sooner, and with more studied and careful arrangement of the subject. For it is indeed, as Mr. Downing expresses it, a subject deserving, not a

few, but many words, and I may add one that requires an abler pen than mine to do it justice.

Am very truly yours, &c.,

RICHARD THURSTON.

P. S.—I shall, at any time, be pleased to give you any information regarding fruits and fruit trees, so far as in my power. I have an extensive nursery of all the choice and reliable fruit trees, to me known, of Western Arkansas.

R. T.

MONTICELLO, Ark., August 3d, 1877.

Mr. C. C. BLISS:

Replying to yours of 26th ult. The earliest settlers of this portion of the State, as a rule, cared little for fruit until it was distilled. When my father moved here, in 1848, there was probably not more than one farmer in ten who had a fruit tree on his place, and not more than one in fifty who had anything more in the way of an orchard than a few seedling peach trees and a clump of Chickasaw plums. The idea prevailed, which is not yet altogether abandoned, that corn-bread, bacon and coffee was the *natural diet* of the human species, and that the more one kept *fruit* on the outside of him, the more healthy he would be. Only a year or two before the war, I knew a man of considerable wealth and a christian minister, to cut down the whole of a large, young orchard of well selected trees that was on a place he had purchased, because, as he supposed, the fruit would make his negroes sick. True, there were a few exceptions, but they were very few, and I am glad to aid in keeping green their memory.

Old Dr. Cabeau, who lived awhile near Warren and afterwards on the Saline river, some twelve miles south-east of Warren, was an enthusiastic and persevering horticulturist—a great lover and cultivator of flowers—but gave considerable attention to fruit, particularly pears and strawberries. He began raising fruit, here, about 1840, and died at an advanced age some twelve or fifteen years ago.

Mr. John C. Bush came from Kentucky and settled on the dividing ridge between the waters of the Saline river and bay on Bartholomew, not far from where Star city, the capital of Lincoln County, now is, about thirty-five years ago, and very soon afterwards planted out a large orchard of apples, peaches, pears, &c., getting his trees originally from Kentucky nurseries, and afterwards budding and grafting himself. Besides raising a great deal of

fine fruit, when others had scarcely any, he carried on, for a number of years, a little nursery from which the few of his neighbors, who in those times cared about grafted trees, got their supply. Mr. Bush still lives on the old place, being nearly ninety years of age.

About 1858, Dr. Jacob Kersh, who had been celebrated in South Carolina as an amateur fruit culturist, having taken numbers of premiums for fine fruit at the State Fair, there, settled some ten miles north-east of Monticello and immediately planted out extensive orchards and an experimental grapery, the latter containing nearly all varieties of the vine then cultivated in the South. Dr. K. spared no pains or expense to have fine fruit and was entirely successful. He died some two years ago, but the orchards he left are a monument to his worth. His sons are enthusiastic fruit culturists, and have originated several valuable and promising varieties of the apple and peach.

Since the war our people generally have become much more appreciative of the need of having an abundance of good fruit as also of the practicability of so doing. And notwithstanding the monetary stringency and other difficulties that have been in the way, there are many good orchards, now, throughout this portion of the State, and scarcely a farmer but that has more or less of peach, apple and plum trees.

The writer has been carrying on a nursery near Monticello since 1868. He makes a specialty of the sorts that have been thoroughly tested and have proved to be adapted to the Southern climate. Fruit tree planting may be said to be fairly on the increase, here.

Truly yours,

S. J. MATTHEWS.

Colorado.

To tell of fruit growing in Colorado is to relate a short and disastrous story. The first settlements were made in 1859, and soon after various kinds of fruit trees were planted mostly in the vicinity of Denver, but afterwards in several other places. First the trees winter killed badly, next they had all the symptoms of attacks by borers, and finally when grasshoppers came in the fall, they eat out buds, and consumed the leaves, consequently not only fruit but other trees died the next season, or lingered making little progress. The general impression among those who have planted, cultivated and studied most is, that our elevation of 4,500 feet, where the evaporation is constant and rapid, and

where the pressure of the atmosphere is only eleven inches against fifteen inches in the east, the sap of the trees is abstracted, frost and cold and hot sunshine penetrate, and the trees die. Various plans have been devised to save the trees, first, by watering in winter; second, by planting in the shade of cotton-wood and box-elders; third, by covering with brush, matting and the like; but the results are not noteworthy. There are plenty of instances where trees lived through several winters, where they grew extremely well and everything was so promising that it seemed certain they would bear full crops—indeed, they sometimes did bear, but in the following spring they die in part, and in the next year wholly.

It looks now as if the only method not yet tried, is to grow from the seed and obtain iron-clad sorts through the process of the *survival of the strongest*. The Salt Lake people say they had no success until they obtained trees this way, and now undoubtedly they have the best fruit country, all things considered, in the United States, their peaches bearing wonderfully, while they have magnificent plums, apricots and the like. Peach trees grown here from the pits die down every winter, but they come on the next spring as vigorous as ever. Possibly they may become toughened, but the prospect is not brilliant. I have some apple trees sent me from Salt Lake, which have been planted two years and only one in a dozen is dead; the rest look tolerably well. What is said above refers to pears, cherries and quinces as well. So far the greatest visible enemy is the grasshopper, but this is no real obstacle, for in Salt Lake they are thicker than here. It is to be added that our latitude and elevation are the same as at Salt Lake City.

Grapes are doing tolerably well, and as they can be covered in the winter, they should be more promising, though they will not escape the ravages of young grasshoppers in the spring. By the way, we have these pests for a series of four or five years, then we have a rest for this same length of time. Remarkable crops of grapes, from a few vines, have been grown, when the canes lay on the ground wholly neglected, and not trimmed in the least. A man living near Denver showed at the fair this fall bunches of white hot-house grapes weighing as much as three pounds, grown in this way. Also, Concords and Delawares, which looked well. A few apples were shown. All this is said of Northern Colorado lying in the valley of the South Platte.

In the valley of the Arkansas, and at about the same elevation, prospects are much better, and at

Canyon City in particular, are several orchards, one of which, two years ago, bore 150 bushels of apples, and this year considerably less. The quality is excellent. A few peaches, and perhaps some pears, have been grown in that section. In the eastern part of Colorado, both on the Platte and Arkansas, say one hundred miles from the mountains and at an elevation of about three thousand feet, hardy apples ought to do well: it seems to me, as well as in Northern Michigan, where the Rhode Island Greening is unexcelled.

Currants do badly, owing undoubtedly to the hot, scalding sun. Box-elders planted to shade the bushes would perhaps be a benefit, and I shall try it. Gooseberries bear well when grasshoppers do not eat out the buds, but last summer a good part of the fruit was scalded on the bushes, as were currants in California. The Kittatinny blackberry, when laid down, bears large, nice fruit, and better than any other. Strawberries bear full as well as in the Eastern States, and raspberries also. Irrigation is absolutely necessary, and it insures good crops. But peculiar methods are to be learned and a longer time is required here to get roots well established than in the East.

There is a portion of Colorado lying between 37° and 38° of latitude, now beginning to be settled, and reaching to the corner of Arizona. In many of the valleys at an elevation of more than 3,000 feet trees are not bearing, and in corresponding valleys in Utah raisins are grown. Arizona produces excellent peaches, pears, &c., and in some parts, sugar-cane. The summer heat in all these regions is intense. The part of Colorado referred to was once settled by a people at least half civilized, and some of the Indian tribes at no great distance south in New Mexico raise an abundance of peaches, perhaps as a tradition or a recollection. The thousands of valleys of the affluents of the great Colorado should in the future be made glad with almost all kinds of fruit.

N. C. MEEKER.

Florida.

Gentlemen of the Pomological Society:

As you have done me the honor to appoint me an officer of your Society, and as circumstances prevent my meeting with you, I present, with my regrets at my inability to join you in your deliberations, a few remarks on the present condition and future prospects of fruit culture in Florida.

Foremost in point of importance, as regards its influence in inducing immigration to the State, and the opening of a vast extent of unoccupied country

to settlement and improvement, and as a product promising ultimate independence to those who engage in its culture, stands

THE SWEET ORANGE.

It is only a few years since particular attention was paid to this fruit, but in that time vast strides have been made in its cultivation. To the few old groves which survived neglect and other adverse circumstances consequent on the war, hundreds of new groves have been added, and in all parts of the State yearly accretions to the number of bearing trees are increasing the product and enlarging the proportions of a business which is destined at no far distant day to be one of great magnitude. Our people are learning new and improved methods of budding, grafting, and general culture, and the work of establishing a grove is by no means the long and difficult matter it was once supposed to be. Formerly ten years was the time allowed from the planting of the seed till the tree commenced bearing, but experiment has shown the possibility of producing fruit in from four to six years. Much attention has been given also to improving varieties of fruit. Local societies in different sections of the State have interested themselves in this subject, as well as the Florida Fruit Growers' Association, at whose last annual meeting a Committee on Nomenclature was appointed. The first report of this committee has excited an interest in the production of fruit of fine quality, and doubtless succeeding reports will give evidence of increased attention to the culture of finer grades. Fertilizers adapted to the rapid growth and increased fruitage of the orange tree have received much attention, and discussions by gentlemen who have given the subject much careful study and whom experience enables to give results of experiments, have led to great improvements in the materials used and in their application. Among the enemies of the orange tree may be mentioned the "scale insect" and a diseased condition known as "die-back." The former, once much dreaded, now causes little uneasiness, as several applications have been found which readily remove it; and while the latter is a source of considerable anxiety in some localities, it is hoped an effectual remedy will soon appear and dispel all cause for alarm. Last year's crop suffered considerably from a hurricane which swept over the eastern, southern and gulf coasts during the fall, shaking thousands of oranges from the trees, and in many cases uprooting and destroying the trees themselves; and again, two severe frosts materially injured the fruit, and in many cases killed

young trees to the root. Nevertheless, the crop was estimated at 17,000,000. Few, if any, bearing trees were injured by frost, and should no unforeseen disaster occur, the coming crop will probably reach 30,000,000. Prices have ranged at from \$17.50 to \$25.00 per thousand on the trees. Dealers have found the benefit of careful handling and packing, and in Northern markets prices are maintained at a good figure, notwithstanding the enormous importation of foreign fruit.

SOUR OR SEVILLE ORANGES.

For two years past, sour oranges have been in demand for the manufacture of *marmalade*, *orange wine*, and *orange bitters*. A large factory for the manufacture of marmalade—the capacity being a ton a day—has been erected at Jacksonville, and the product has been pronounced equal to that made in Dundee, Scotland. The wine and bitters are as yet made only in small quantities, but meet a ready sale, and their manufacture may yet become a business of considerable importance. So many of the natural (wild) sour groves have been converted into sweet groves by budding, that the demand for this fruit is now even up with the supply, and it is probable that before long new groves of sour trees will be planted. Other varieties of the citron family, such as Grape Fruit, Shaddocks, etc., are grown in unimportant quantities.

LEMONS AND LIMES.

The lemons hitherto grown in Florida have been of a large, coarse variety, not favorably received in Northern markets, and it is only recently that improved varieties have been introduced. General H. S. Sanford, who spends much of his time abroad, has procured fine grades of this fruit and has done much to improve its quality here. Other gentlemen are giving the subject attention, and the lemon promises to be a valuable addition to our fruits. Limes grow readily, particularly in the southern and south-western parts of the state, and yield with great profusion, but have not as yet received the attention they deserve. They can be made a source of great profit.

PEACHES.

The crop this year has been very heavy in all sections of the state. Many of the finest Northern varieties have borne for the first time. Experience shows that the best fruit is grown by putting northern buds on native stocks. Our early varieties ripen in May, so that they will be profitable to ship to Northern markets. The peach tree finds few enemies here. Increased attention is being paid to its

cultivation and we shall soon be sending large quantities of fruit out of the state.

Quinces, *Plums*, *Nectarines*, *Apricots*, have all done well the past season, and will be largely planted in the future. In some sections, *Apples* and *Pears* have borne well, and we may yet find varieties of these fruits suited to our climate.

STRAWBERRIES.

Strawberry culture is receiving considerable attention, some growers having achieved great success, and the area planted is annually increasing. The *Wilson's Albany* has so far proved to be the best variety, but the business is yet in its infancy and other varieties may yet succeed as well.

GRAPES.

There is no part of the state where this fruit does not do well. The Northern varieties best spoken of are *Hartford Prolific*, *Delaware*, *Ives' Seedling* (given in the order in which they bear fruit), and of natives *St. Augustine*, *Scuppernong*, *Thomas*, and *Flowers*, the last two being varieties of the *Scuppernong*. *Hartford Prolific* ripens in June, and from then till October grapes of some variety are constantly in market. There is some attention paid to wine making and the business is profitable to those who engage in it, but the capabilities of the state in that direction remain to be developed by capital, and a more thorough knowledge of processes of manufacture than now obtains.

MISCELLANEOUS.

Among the tropical fruits now growing and producing in Florida may be mentioned Sugar Apple (*Anona squamosa*); Guavas, of different varieties; Jujube (*Zyziphus vulgaris*); Mango (*Mangifera Indica*); Papaw (*Papaya vulgaris*); Bananas, Pine Apples, Figs, Olives, and many others of inferior note; while many varieties have been recently introduced, but with what success it is as yet too early to say.

Our climate has been found suited to tropical fruits to an extent exceeding the expectation of the most sanguine, and there is little doubt that in the more southern counties even the most delicate kinds can be grown, and that before many years our people will be raising and shipping fruits which are now only known by name.

I have had the pleasure of introducing many new fruit plants into Florida, among which are Rose Apple (*Jambosa vulgaris*), Jambosine (*Jambosa Makapa*), Cashew (*Anacardium occidentale*), Spanish plum (*Spondias Myrobalanus*), Cherrimoyer (*Anona cherimolia*), and several others. Of the above I have distributed seed to individuals in dif-

ferent parts of the State, and in most cases have good accounts of their growth.

It has seemed to me ever since my residence in Florida that here is the proper location for a *National Garden*. Such gardens are not only encouraged, but to a great degree—in some cases entirely—supported by the government in many of the dependencies of France and England, and with results which show the wisdom of an expenditure which is very small, compared with the benefits derived from increased knowledge of valuable fruits and plants. Such a garden, under the control of the Department of Agriculture, would not be of local benefit only, but would in many ways prove itself of value to the whole country. Many tropical fruits and plants, by a careful study *here* of their habits and wants, might gradually be acclimatized in more northern latitudes. This is particularly true of medicinal plants, many of which are now imported from foreign countries at no little cost at any time, and in case of wars some of them can only be procured at most astonishing advances on rates in times of peace. As an example, the *Cinchona* may be mentioned. This valuable medicinal tree can undoubtedly be grown with success in some sections of Florida, and when its habits and requirements are well understood, perhaps the mountains of Georgia, Alabama, and even of Virginia, might supply the country with its indispensable quinine.

Having already overstepped the limits of the subjects which properly come under the notice of a Pomological Society, I may be pardoned, perhaps, for going a little farther and suggesting that a National Botanical Society should examine, correct, and report upon the nomenclature of the grasses and plants of the extreme South. In works upon the botany of this part of the country, and in southern agricultural reports, grave errors are made which are disseminated by the U. S. Bureau of Agriculture in its monthly reports. A rose by any other name may smell as sweet, and a grass improperly named may be as nutritious as when properly designated, but when one recommends the culture of a well tried, valuable plant or grass, and finds a half dozen valueless interlopers improperly recognized by a similar name taking its place, to the disappointment of the grower and to the great mortification of the person who has recommended it, the need of careful and correct nomenclature is apparent. I have the honor to be, gentlemen,

Very respectfully your obedient servant,

C. COBRINGTON.

Jacksonville, Fla., Sept. 3, 1877.

Illinois.

SKETCH OF THE RISE AND PROGRESS OF FRUIT CULTURE IN ILLINOIS.

The commencement of fruit culture in the State of Illinois dates back to the French settlements of near two hundred years since. The evidence is indeed mostly traditional: but it is said that as early as 1700 the French settlers planted the seeds of apples and pears: and old pear trees of enormous size still existing at Kaskaskia, and other places in the south-west part of the State, prove that they did not altogether neglect fruit culture. Ford, in his history of Illinois, says, "Their houses were generally placed in gardens surrounded with fruit trees of apples, pears, cherries, and peaches." Their taste in this respect appears to have exceeded that of the early settlers of English origin. In 1769 the French planters on the Illinois river made, from wild grapes, a number of pipes of a strong red wine, which was shipped to France. The attention of the government was attracted, and in accordance with the policy of the age—a policy unfortunately not yet obsolete—a further importation was prohibited, lest it should interfere with home production.

Most if not all the orchards planted before the admission of the State to the Union in 1818, appear to have consisted of seedlings. About that time three nurseries of grafted fruit were started, the best known of which was that of Joseph Curtis, at Paris in the south-eastern part of the State. The catalogue of this nursery at one time contained a list of three hundred varieties of apples, and a large assortment of other fruits. His trees were conveyed in wagons to all parts of the State: and probably to him, more than to any other individual, is Illinois indebted for the introduction and dissemination of good fruit.

The first efforts at combined action in relation to fruit culture were made in the Northern part of the State. A meeting was held at Peoria in 1846, and another at Farmington in 1847, at each of which a committee was appointed to draft a constitution for a Horticultural Society: but, for some reason, nothing ever came of it. In December, 1850, a meeting of eight or ten pomologists was held in Princeton, when steps were taken for the organization of the North-western Fruit Growers' Association; an organization which was effected in October, 1851, at a much larger convention in the same place. This society existed till 1857, when it was dissolved and merged in the State Horticultural Society. Some of its members were from adjoining states, but the great

majority were citizens of Illinois. The annual meetings were held early in October, and were accompanied with ample exhibitions of fruits. These were compared, their merits discussed, and a good degree of order and correctness eliminated from the previous chaotic condition of their nomenclature. Mr. Barry, of Rochester, who attended a meeting of this society at Burlington, Iowa, in 1855, said that he had never before seen so fine a display of fruit as was then made.

The Illinois State Horticultural Society was organized at Decatur in December, 1856. It has held annual meetings ever since, which have been generally characterized by a zeal and interest worthy the cause. For ten years past it has received from the State an annual appropriation of \$2000, which has enabled it to publish its transactions in a more complete form than was previously practicable. Its publications will compare favorably with those of any other society of the kind in the Union. While pomology has been the principal subject attended to, ornamental tree planting and forestry have not been neglected. Botany and entomology have received considerable attention, as well as other matters which interest the horticulturist. The transactions of some local societies are published in the same volume with those of the State Society.

The membership of the Society has never been large; the attendance at the annual meeting seldom much exceeding one hundred—a small number it would seem for so large and populous a State. Many counties have never had a representative at the meetings. Nevertheless its influence has been great; and in connection with the local societies, it has effected a far greater advancement in fruit culture than all the Agricultural societies in the State have accomplished in the department to which they are devoted.

In the progress of fruit culture in Illinois, the difficulties and discouragements encountered have been neither few nor trifling. A great number of varieties were introduced by emigrants from the older States; many of them unsuited to the soil and climate, and many probably never of much value anywhere. Many varieties too which, grown upon young vigorous trees in a virgin soil, gave fine promise, were recommended for a general cultivation, but soon deteriorated and were discarded. But these were of little consequence compared with the increase of insects, the increase of diseases, which in the vegetable, as in the animal economy, seem to prevail most in long settled districts; and the extremes in our climate of cold and heat, wet and

drouth, which appear to be greater and more destructive to vegetable life than formerly. Twenty-five or thirty years ago some of our prominent pomologists were wont to boast—as has more recently been done by some of our neighbors further west—that our State was the best fruit region in the Union; and the beauty and excellence of the fruits exhibited at the Pomological meetings appeared to give some color to the assertion. Some fifteen or sixteen years since, the hilly wooded region in the south part of the State was enlorgized as the Utopia of fruit growing. Lands were bought at high prices, and large orchards, principally of peaches, established. A pear orchard of 12,000 or 15,000 trees was planted under the care of Parker Earle; but the destruction of the forests produced meteorological changes; insects and diseases were introduced or multiplied, and the reputation of the Illinois "Egypt" as a pomological paradise is already among the things of the past.

The first serious check to fruit culture was the winter of 1855-6, when over a great part of the State the mercury stood at 30 to 36 degrees below zero. A nearly clean sweep was made of quince, peach, plum and cherry trees, the Morello cherries excepted. Great numbers of apple and pear trees were killed outright, and most of the survivors greatly injured. The winters of 1872-3, and 1874-5 were likewise very fatal to fruit trees. In these two instances, the combination of extreme dryness of the soil with intense cold appeared to be the agent of destruction, the damage being apparent only in the roots. The effect of these climatic extremes is still seen in the diminished vitality of orchards, and the inferiority of the fruit produced. The duration of orchards is likely to be far less than in the Eastern States.

Pear culture in Illinois may be designated as a failure. It is doubtful if a single instance can be cited of the planting of pear trees to any considerable extent, which has proved remunerative. Those who have planted only a few trees, in a great majority of cases, have succeeded no better. The value of all the pears grown by the writer, in forty years, would not pay one half the trouble and expense incurred in planting and caring for the trees. The destruction of the trees by fire blight has been the great difficulty; though they are sometimes killed by severe winters. The combination of drouth and cold is fatal to the quince root in our soil; so that dwarf pear trees, unless so treated as to throw out pear roots, endure but a few years. The culture of the Mazzard and Duke varieties of cherries, has proved even a more

complete failure than that of the pear. Yet, notwithstanding all these discouragements, the pursuit is still followed with sustained interest. Some of our most prominent pomologists have passed to their rest: others have grown old in the cause and must soon follow; yet there is a prospect that others will take their place who will fight the good fight with equal ability and determination.

ARTHUR BRYANT.

PRINCETON, Ill., August 24, 1877.

Iowa.

EARLY HISTORY OF FRUIT GROWING IN THE DISTRICT OF MUSCATINE, IOWA, AND ADJOINING COUNTIES.

To the Secretary, &c.:

I came to this place in 1836. This date is early enough in the settlement of the country, but I can only recollect the introduction of a few orchards and fruits.

Previous to 1836, Antoin LeClair had planted a few apple trees where the city of Davenport was soon after built. Thomas Burditt moved from Clover Port, Ky., in 1837, and brought a few seedling trees, among which was one called Red Coat, taken up from suckers about the parent tree, which had been disseminated to some extent in Kentucky, from its suckers. The trees were good bearers at Muscatine, a good size, good market apple, but the quality third rate. Some years ago I grafted the Red Coat, and set them out.

In 1843-4 it was the severest winter I ever saw, the river freezing three to three and a half feet, and the land six feet: these Burditt trees set on rich bottom land, the stock six inches in diameter, were nearly all split from the branches to the ground: some of them died and some lived. A few peach trees had been started, but that hard winter killed all to the ground.

In May, 1837, Wm. Gordon planted an apple orchard on the bluffs of the Mississippi, in this county, twelve miles above Muscatine. Whether there are any of those trees living now I do not know: but this was the best orchard in the county for many years. Jacob Walaker, planted some seedling trees about the year 1840, three miles north-west of Muscatine: many of them are now large, healthy trees, frequently bearing large crops.

I believe Robert Avery and his son, Henry, started the best nursery in this State, near Burlington, probably about 1839. The first nursery north of

Burlington was started in 1840, by Brenton Darlington, two and a half miles north-west of Muscatine. He brought apple seeds, the fall before, from Columbiana County, Ohio, from which he raised a good many seedling trees, and budded and grafted some of them. He set a good sized orchard on that farm, now owned by Jonathan Cattell, which is in bearing condition, though many of the trees were not suited to our climate and have died.

About the year 1843, Dr. James Weed started a nursery a mile north-east of Muscatine, in which he had a great number of varieties, and has tried many experiments with nearly all fruits, for this climate, at great cost of time and patience. I am led to believe that the short lists recommended by our societies, are all that is necessary, and the mode of propagating by root graft, and some of them double worked—that is top worked—or a three year hardy graft, is the most successful way of raising an orchard.

In 1852, Foster & Negur started a nursery near Muscatine. This nursery was continued five years under the partnership, when it was divided, Isaac Negur carrying on a nursery some five years longer and then discontinuing, Suel Foster continuing the nursery near Muscatine, to the present time. We took much care to cultivate only hardy and productive sorts, with less care for the best flavor.

Apples, grapes, strawberries, and raspberries, are the principal fruits raised here: all of which succeed very well, with a strict caution to set the right sorts. Pears and cherries are raised to some extent. For lists of fruit see Iowa Horticultural Reports.

The quantity of fruit raised in this vicinity has increased until our supply is about equal to home consumption, in this and five adjoining counties: some years more, some less. Last year, 1876, I was called upon to report the apple trade of Muscatine—an excessively large crop—and from the best information I could obtain, it was about 75,000 bushels, 30,000 of which was from the near country east of the river, in Illinois, and 45,000, the product of Muscatine County.*

Burlington has the greatest quantity of fruit, for commerce, in Iowa, and probably Muscatine the second. The facilities for sending fruit north and west, from these two towns, to the newer and older counties, where their supplies are not yet grown, are very good.

SUEL FOSTER.

* This was in addition to home consumption, of 25,000 people in this county.

Kansas.

W. C. FLAGG, *Secretary, &c.*:

Dear Sir—In compliance with your request I send you a "short historical sketch of the rise and progress of fruit culture" in our State, up to 1875, except where mentioned. From the nature of the subject much will have to be omitted for the want of reliable data.

LEAVENWORTH COUNTY.

Fruit growing commenced in this county in 1855-6. Wm. Tanner, the first President of the Kansas State Horticultural Society, Samuel Paul, George Fisher, H. T. Green, of Leavenworth; David Brown, of Salt Creek Valley; E. M. Mackemer, of Delaware Township; Wm. H. Collin, of Springdale; Dr. De Ball, Henry Keller, of High Prairie; Benjamin Bishop, of Fort Leavenworth, and James Basley, of Pleasant Ridge, were among the first. These orchards were planted with trees from the east, including many varieties not adapted to our State.

Nurseries were established here in '55 by James Basley, near Pleasant Ridge; in '57 by Henry A. Smith, of Delaware; in '58 by Anthony Way, of Springdale. From these nurseries principally, large orchards were planted; by Clayton Carney, of about 1,500 trees; by John Gist, 3,000 apple and pear trees; by John Loar, of about 1,500 trees, and Anthony Way, forty acres of apples, peaches and pears. A number of "Friends" about Springdale, whose names I could not procure, also planted orchards. But a new impetus was soon given to fruit growing by the establishment of new and more extensive nurseries.

In 1860, F. Wellhouse entered into co-partnership with James Basley, and enlarged their nurseries the same year. D. C. Hawthorn, Dr. Wm. M. Howsley, George Fisher, E. P. Goddard, Dr. J. Stayman and Wm. Tanner, in '61, and Francis Godard in '62, set out extensive nurseries, which supplied trees at low prices, and from that period we may fairly date fruit growing in our county. From these nurseries, generally there were large orchards planted. Some of the most important are the following: Henry Squires, of Pleasant Ridge, 3,000 trees, and J. S. Van Winkle, 3,000 apples and peaches. Near the same place, E. Thebald, 500 trees; Thomas Ruple, 400 trees, and S. F. Ray, 200 trees.

Near Longanoxie, Crawford Moore, 2,500 apple and pear trees, and a vineyard; Jesse Blair & Son, 2,000; Archibald Jones, 500; Hiram Reese, 500, and W. H. Coxe, 200 trees.

Near Big Stranger, Henry Still, 6,000 apple, pear, and peach trees, 3 acres of vineyard and 8 acres of small fruits; Judge Delahay, 2,500.

Near Jarbald's creek, Wm. Bisset, 800; John W. Murphy, 200; J. A. Courtney, 200, and Wm. Denhome, 200 trees.

Near Fairmont, E. J. Humphrey, 3,000; T. C. Dewel, 500 trees and small fruits, and C. F. Maris, 1,500 trees and small fruits.

At Salt Creek, Wendel Hund, 5,000 apple, pear and peach trees, besides small fruits.

Delaware Township, Capt. H. D. Smith, 3,000 apple and pear trees, besides eight acres of small fruits.

Near Leavenworth, J. M. Hughes, 2,000 apple trees, besides small fruits; Hon. M. J. Parrott, 1,000 apple, 500 pear, and 500 peach trees and a vineyard; James Corsey, about 1,000 apples and small fruits, and a vineyard; Dr. Wm. M. Howstey, 450 apple, 250 peach, 100 pear and small fruits; General Stone, 300 apple trees; H. A. Smith, 1,500 trees; B. Thomely, 1,500 apple, pear, and peach trees; Dr. J. Stayman, 3,000 apple, pear, and peach trees, and 4,000 grape vines and small fruits. Francis Godard, 420 apple, 320 pear, 100 plum, 50 cherry, 200 peach trees, and 3,000 grape vines, and Wm. Tanner, 5,000 apple and pear trees. These orchards were planted up to 1866, since which time there have not been so many commercial orchards set out, but many more farm orchards. F. Wellhouse planted out, 1876, the largest orchard, perhaps, in the State, containing 13,000 apple trees, consisting of only three varieties, namely, Ben Davis, Winesap and Missouri Pippin, and is making preparation to plant this fall and next spring, 30,000 more trees in Missouri County.

Number of acres in nurseries, 100; orchards, 444; vineyards, 157. Number of varieties of fruit cultivated, 1,500.

DOUGLASS COUNTY.

The first orchard planted in Douglass County, was by Thomas Pierson, seven miles west of Lawrence, in 1855, consisting of 150 trees, and in the eastern part of the county, in 1857, by James McGhee, Henry Eggert and A. Kostenbader.

The first planting in Kanwaka township was by Judge Wakefield, of about 100 one year old trees.

Among the later large planters, are Geo. C. Brackett, of Lawrence, of several thousand trees; and W. E. Barnes, of Vinland, 3,000 trees and ten acres of vineyards, and many others; I have been unable to get their names. Statistics give the number of acres in nurseries, as 208; orchards, 5,040; vineyards, 433.

ALLEN COUNTY.

The first setting out of trees in this county was in 1858, by Henry Schmidt. The main planting

was made in 1862 and '63 by John Speering, Samuel Hubbard, A. L. Dornberg and J. Van Fossen.

Number of acres in nurseries, 20; orchards, 2,424; vineyards, 42.

CLOUD COUNTY.

The first planting of trees in this county was in 1868. Number of acres of nurseries, 11.75; orchards, 374.75; vineyards, 1.25.

FORD COUNTY.

The first planting of trees in this county was by F. C. Zimmerman, 1871. Number of acres in nurseries 3; orchards 5; vineyards 6.

HARVEY COUNTY.

Number of acres in nurseries, 26; orchards, 850; vineyards, 18.

MACPHERSON COUNTY.

The number of acres in nurseries, 94; orchards, 319; vineyards, 30.

JEWEL COUNTY.

The first planting of fruit trees in this county was by J. A. Davis, in 1870, and Samuel Githens, in 1871. Number of acres in nurseries, 14.75; orchards, 130.87; vineyards, 250.

LYON COUNTY.

The first planting of fruit trees was in 1856, by Oliver Phillips, Robert Best, Christopher Ward, and C. H. Withington, in Waterloo township. Number of acres in nurseries, 42; orchards, 2,389; vineyards, 36.

MIAMI COUNTY.

The first planting of fruit trees in this county was made in 1855, by S. L. Adair. In 1861, L. Bishop planted a large orchard of apples and pears, consisting of fine and select varieties. Number of acres in nurseries, 30.50; orchards, 3,614; vineyards, 98.25.

NEOSHO COUNTY.

The first planting of orchards in this county was made by the Osage Indians, many years ago. The first orchards planted by the white man was in 1848, at the Osage Catholic Mission, mostly seedlings. The Mission peach orchards number some thousands of trees, planted some thirty years ago. Following these, are those of Mr. Waters, of Erie township, Mr. Gilbert, of Four-mile Creek. These gentlemen are raising fine fruit. E. F. Meaker planted an orchard in Centerville township, in 1868. The first orchard planted after the treaty with the Osage Indians, of which a true record has been kept, was by D. B. Skeels, of some 400 trees of fifteen varieties. Orchards were planted extensively since,

among the most prominent are J. C. Crees, 2,000 trees; Wm. Higgins, 500 trees; J. C. Blair, 500 trees; E. F. Meaker, 500 trees; D. B. Skeels, 1,500; T. C. Jones, of Chanute, 1,200. Number of acres in nurseries, 52.22; orchards, 3545.94; vineyards, 40.18.

RICE COUNTY.

The first planting of fruit trees in this county was made in 1873, by C. D. Stevens. In 1874, by R. A. Gray, Harison Heath, Dr. G. Baker, J. Becknell, and J. M. Proffert. Number of acres in nurseries, 11; orchards, 67; vineyards 2.

SEDGWICK COUNTY.

The first planting that we have any record of was in 1871, by A. J. Cook. Number of acres in nurseries, 35.75; orchards, 1,090; vineyards 4.

SHAWNEE COUNTY.

The first planting of fruit trees was made by Anthony Ward, of Topeka, of 300 apple, and 500 peach, and a few pear trees. Number of acres in nurseries, 148; orchards, 2,662.50; vineyards, 95.88.

WABUNSEE COUNTY.

The first planting of fruit trees, made to any extent, was from 1867 to '74. Among the first planters was C. B. Lines, of Wabunsee. Number of acres in nurseries, 10.50; orchards, 652.87; vineyards, 14.37.

WILSON COUNTY.

The first planting, of any consequence, was made in 1869 and '70. Number of acres in nurseries, 48.50; orchards, 2,797; vineyards, 64.25.

WOODSON COUNTY.

The first planting in this county was made in 1858, by Leonard Faqua, Simon Lynn, Spogy, H. C. Learned, John Chapman, and David Reynolds. Number of acres in nurseries, 19.50; orchards, 1,375.25; vineyards, 9.31.

ATCHISON COUNTY.

The first planting of fruit trees in this county must have commenced about 1856, but I have failed to get any report. Number of acres in nurseries, 57; orchards, 2,500; vineyards, 116.

BARTON COUNTY.

Number of acres in nurseries, 2.25; orchards, 61.12; vineyards, 5.08.

BOURBON COUNTY.

I have no report from this county, but from the appearance in '59, and since, fruit culture must have commenced at an early day. A. Shinn, of

Fort Scott, has planted about 160 acres in nurseries and fruit trees. Number of acres in nurseries, 95.75; orchards, 4,687.15; vineyards, 84.95.

BROWN COUNTY.

The first planting of fruit trees was made in this county in 1855, by C. C. Grubb. Number of acres in nurseries, 13; orchards, 2,795; vineyards, 33.

BUTLER COUNTY.

I can find no history of the first planting of the following counties. Number of acres in nurseries, 59.37; orchards, 2,001; vineyards, 32.

CHAUTAUQUA COUNTY.

Number of acres in nurseries, 10.68; orchards, 1,390.11; vineyards, 24.12.

CHASE COUNTY.

Number of acres in nurseries, 2; orchards, 413; vineyards, 13.87

CHEROKEE COUNTY.

Number of acres in nurseries, 49.50; orchards, 3,810.50; vineyards, 50.91.

CLAY COUNTY.

Number of acres in nurseries, 21.25; orchards, 418.87; vineyards, 8.

COFFEY COUNTY.

Number of acres in nurseries, 33.75; orchards, 2,431.90; vineyards, 63.97.

COWLEY COUNTY.

Number of acres in nurseries, 25.5; orchards, 1,795; vineyards, 21.88.

CRAWFORD COUNTY.

Number of acres in nurseries, 42; orchards, 2,981; vineyards, 30.20.

DAVIS COUNTY.

Number of acres in nurseries, 23.50; orchards, 373.25; vineyards, 6.50.

DICKINSON COUNTY.

Number of acres in nurseries, 12.50; orchards, 183.20; vineyards, 29.

DONIPHAN COUNTY.

Number of acres in nurseries, 69.75; orchards, 2,807; vineyards, 244.11.

EDWARDS COUNTY.

Number of acres in orchards, 12.50.

ELK COUNTY.

Number of acres in nurseries, 2.25; orchards, 14.33; vineyards, 21.24.

ELLIS COUNTY.

Number of acres in nurseries, 1; orchards, 4.87.

ELLSWORTH COUNTY.

Number of acres in nurseries, 13.25; orchards, 51.75.

FRANKLIN COUNTY.

Number of acres in nurseries, 343.28; orchards, 3,350; vineyards, 172.24.

GREENWOOD COUNTY.

Number of acres in nurseries, 16.25; orchards, 1,681.12; vineyards, 23.48.

HARVEY COUNTY.

Number of acres in nurseries, 26.25; orchards, 855.50; vineyards, 18.

JACKSON COUNTY.

Number of acres in nurseries, 46.50; orchards, 2,124.75; vineyards, 17.74.

JEFFERSON COUNTY.

Number of acres in nurseries, 66; orchards, 3,008.24; vineyards, 79.52.

JOHNSON COUNTY.

Among the first who planted extensively in this county was Wm. Maxwell, of Lanesfield, now Edgerton. Number of acres in nurseries, 45; orchards, 3,693.43; vineyards, 113.44.

LABETTE COUNTY.

Number of acres in nurseries, in 1875, 127.50; orchards, 4,320.50; vineyards, 92.84. In 1876, in nurseries, 287 acres: apple trees in orchards, 220,000; peach trees, 216,000; cherry trees, 21,000; pear trees, 10,000; plum trees, 5,000.

This county was organized in 1867, but little settlement was made until 1869, since which time most of the fruit planting has been done.

J. S. Williams, of Oswego, was among the first: when his trees were six years old he had 500 bushels of fruit.

LINCOLN COUNTY.

Number of acres in nurseries, 2.50; orchards, 40.86; vineyards, 1.50.

LINN COUNTY.

Number of acres in nurseries, 67; orchards, 3,685; vineyards, 26.50.

MARION COUNTY.

Number of acres in nurseries, 22.50; orchards, 605.78; vineyards, 82.

MARSHALL COUNTY.

Number of acres in nurseries, 42.75; orchards, 1,505.37; vineyards, 18.50.

MITCHELL COUNTY.

Number of acres in nurseries, 24.75; orchards, 89.50.

MONTGOMERY COUNTY.

Number of acres in nurseries, 226.50; orchards, 3,514; vineyards, 138.

MORRIS COUNTY.

Number of acres in nurseries, 8; orchards, 470.50; vineyards, 89.

NEMAHIA COUNTY.

Number of acres in nurseries, 9; orchards, 1,525; vineyards, 20.25.

NORTON COUNTY.

Number of acres in orchards, 18.50.

OSAGE COUNTY.

Number of acres in nurseries, 58.75; orchards, 2,533.86; vineyards, 49.

OSBORNE COUNTY.

Number of acres in nurseries, 36.50; orchards, 57.75.

OTTAWA COUNTY.

Number of acres in nurseries, 31.50; orchards, 286; vineyards, 18.25.

PAWNEE COUNTY.

Number of acres in nurseries, 2; orchards, 23.

PHILLIPS COUNTY.

Number of acres in nurseries, 1.25; orchards, 29.75; vineyards, 1.75.

PATAWATOMIE COUNTY.

Number of acres in nurseries, 19.50; orchards, 1,038.25; vineyards, 46.12.

RENO COUNTY.

Number of acres in nurseries, 24.50; orchards, 208.85; vineyards, 11.50.

REPUBLIC COUNTY.

Number of acres in nurseries, 15.50; orchards, 342.68; vineyards, 16.50.

RILEY COUNTY.

Among the first who planted in this county, extensively, were Welome Wells and A. M. Burns, of Manhattan. Number of acres in nurseries, 11; orchards, 512.62; vineyards, 12.50.

RUSH COUNTY.

Number of nurseries, 8; orchards, 14.

RUSSELL COUNTY.

Number of acres in orchards, 4.50; vineyards, one half.

SALINE COUNTY.

Number of acres in nurseries, 77.75; orchards, 381.25; vineyards, 4.50.

SMITH COUNTY.

Number of acres in nurseries, 15.37; orchards, 105.82; vineyards, 2.50.

SUMMER COUNTY.

Number of acres in nurseries, 42.36; orchards, 650.37; vineyards, 4.87.

WASHINGTON COUNTY.

Number of acres in nurseries, 15; orchards, 1,008.31; vineyards, 12.37.

WYANDOTTE COUNTY.

Number of acres in nurseries, 46; orchards, 2,249; vineyards, 150.

J. STAYMAN.

LEAVENWORTH, Kansas.

Michigan.

The history of fruit culture in Michigan may, in an important sense, be said to commence with the early settlement of the lower peninsula by the French.

In August, 1679, the Griffin, a vessel of sixty tons burthen, which had been built above the Falls of Niagara, bore the first exploring party of white men (Frenchmen) over the waters of Lake Erie and up the Detroit River, finding the Huron village of Tenehsagrondie, occupying the present site of the city of Detroit. Nearly twenty-two years later—in July, 1701.—La Motte Cadillac established a fort and fur trading post at this point, and such establishment was soon followed by the settlement of the adjacent lands, which were so assigned as to give a specified width along the river, but with little regard to their extent rearwards.

From the researches of Edwin Willetts, of Monroe, Michigan, we learn that the French *habitans* have a legend to the effect that an *emigre* from France brought over three pear seeds in his vest pocket, which seeds were planted on the banks of Detroit River, and became the parents (by means of sprouts as well as seeds), of the numerous and venerable pear trees so long the wonder alike of residents and visitors, and which, with their progeny, still characterize this as well as the entire region over which these early settlements extended

Notwithstanding the legendary character of this statement, the fact remains that these trees were the offspring of importation of either trees or seeds, or both, from France; and one of the oldest of these, known to have been planted as early as 1705, stood within the pickets which, at an early day, surrounded the then town of Detroit, and there remained until the modern growth of this now commercial metropolis compelled its destruction. From this tree sprang very many of the now existing remains of these early plantings, and among others, several of the oldest of those that to-day grace the old and beautiful city of Monroe. That these plantings are limited to the French settlements must be supposed to be due to the fact that, beyond these settlements, little if any advance was made till after the lapse of more than one hundred years, when modern varieties, originating and propagated under modern processes, may by possibility be supposed to have wrought an unfavorable influence upon the healthfulness and hence the longevity of this class of fruit trees; while even those that may withstand these unfavorable influences cannot yet have reached such age and size as to commend them especially to notice.

These importations, coming by the way of the Canadian settlements, were very possibly reinforced from that region. Especially would this seem to be true of the apple; and many of the older French orchards about Detroit and across the river still acknowledge the vicinity of Montreal as their place of origin, or at least as the source whence their varieties have come.

The fact seems well authenticated that these old pear trees, while comparatively young, sprouted freely, and that they were considerably disseminated by means of these sprouts. Some of the oldest and largest of these yet remaining at Monroe, were planted in 1780, or about that time. One of the oldest of these, yet vigorous and healthy, measured, eleven years since, twelve and one-half feet in circumference at six inches above the ground, the tallest being sixty-seven feet in height. One of these, which died suddenly and without apparent cause, a few years since, produced, the year previous, over forty bushels of pears.

Dismissing these early contributions to Michigan fruit culture, we pass over a period of more than forty years during which this whole region passed from the domain of France to that of England, and finally, after the revolutionary struggle, and the Indian troubles and border vicissitudes that preceded and accompanied the last war with the

latter country, settled down quietly under the aegis of the stars and stripes. Soon after the organization of a territorial government for Michigan, commenced the great avalanche of immigration westward, a portion of which, mostly from New York and New England, spread itself over the southern portions of lower Michigan, bringing with it the progressive spirit and the pomological tastes so prevalent in the regions whence it sprung.

These settlers found, here and there about the State, orchards of old apple trees long before planted by the Indians, which were, of course, seedlings, and which, by their healthy condition, great age and productiveness, clearly indicated the happy adaptation of climate and soil to the production of this fruit. As prominent specimens of these, we may mention the one on the Island in Orchard Lake, near Pontiac; another in the vicinity of Saginaw City; also the trees on the farm of George Parmelee, at Old Mission, Grand Traverse County, and those known as the Donsman orchard, near Mackinaw.

One of the earliest modern importations of fruit trees that has come to the writer's knowledge, is that of the late Governor William Woodbridge, who, about the year 1825, purchased two thousand apple trees, together with a few pear trees, of Grant Thornburn, of New York, and planted them in orchards upon his farm at Detroit.

In 1833, the Sprague nursery was already in existence near Pontiac, with trees of sufficient age for orchard planting. During this year a nursery was established at Detroit by William L. Woodbridge, son of Governor William Woodbridge, and during this and the next year, the brothers Lay also commenced a nursery at Ypsilanti. From this time forward nurseries, generally of quite limited extent, were rapidly planted in the southern portions of the State.

Nurseries at this time were far from common institutions, and hence, with the anxiety of immigrants to secure an early supply of fruits, very many brought with them to their new homes a supply of the fruit trees obtainable in the regions whence they came. Many, however, were doubtful respecting the adaptation of the climate to the successful culture of fruits, a doubt which was but slowly dispelled, so that the planting of orchards, for a considerable period, proceeded but slowly, a circumstance that may be in part accounted for by the difficulty of procuring trees and plants for the purpose, growing out of the deficiency of nursery facilities—the immense commercial establish-

ments of the East, with their forces of agents and canvassers, being as yet unthought of.

Notwithstanding these untoward circumstances, the decided tastes of the people in this direction, with the favorable results of the early ventures, could not fail to produce a considerably increased tendency to the planting of orchards; and ere long most farmers were able to boast of the possession of a family orchard, while at least a few had ventured upon planting for commercial purposes. Of course, the great bulk of the planting was of the apple; most planters, however, had a supply of peaches, pears, and cherries, while for many years, as is still the case in the newer sections of the State, the plum was exempt from the attacks of the curculio, and succeeded to perfection. Now, however, with the advent of the "Little Turk," the plum is mostly consigned to the care of the more extensive growers, who can afford to do better for the crop, or is driven into the regions as yet unpeopled by the enemy; while, with the change of climate consequent upon the disappearance of our forests, the peach has become entrenched upon our hill tops, or has been driven to take refuge under the lee of Lake Michigan.

While the great bulk of the farm lands of the State was yet covered with a mantle of primeval forest, its shelter, jointly with the equalizing influences of Lake Michigan, seems so far to have modified the climate of the entire peninsula, that little was thought, and less known, of the wonderful influences thus exerted; and even the existence of the "Lake Michigan Fruit Belt" (if such can be said to have then had an existence) was practically unknown. During this comparatively early period there was comparatively little general knowledge and even less general interest on the subject of fruit culture. The process of immigration and settlement already described was mainly confined to the three or four more southerly tiers of counties in the State, which, with such a class of immigrants and so favorable a climate and soil for the purpose, were gradually becoming pretty well permeated with the tastes, as well as the practical knowledge, so needful to the growth and prosperity of this interest.

Prominent among the pioneers of fruit culture of these early days, we mention B.W. Steere, of Adrian, who, with his father and family, settled in Lenawee County, in the year 1833, and planted one of the earliest orchards in the western part of that county. He, in connection with Darius Comstock and his brothers, and Daniel Smith and his son, imported

trees from near Lockport, New York, as early as 1827, from which some of the oldest orchards of the county were planted. Much was also done by Israel Pennington, of Macon, in this county, by the introduction and testing of varieties in his orchards. The elder Mr. Steere lived long enough to see and enjoy the fruition of his labors, dying in April, 1877, aged 91. B. W. Steere and his brother established a nursery here about 1843, which is still continued.

The *Baldwin* was introduced here at an early date, under the name of *Steere's Red*. It did not occur in the oldest orchards.

There is said to be, in the northwesterly section of this county, a hilly region interspersed with small but deep lakes, the crowns of the hills being adapted to the successful growth of peaches.

Eastern Van Buren received supplies of apple and peach seeds, with the early settlers, about 1835. From the product of these were planted some of the earliest orchards of the county. Among the earliest budded peach trees introduced, were a few brought into that locality by N. H. Bitely, of Lawton, from near Rochester, New York, in 1855. These were planted upon a hill, and stood the test of a very severe winter, while others, on low grounds were killed. This attracted the attention of Mr. C. Engle, a neighbor owning some of the highest land in this region, but which he regarded as worthless. Observing this exemption, he at once proceeded to plant these hills with fruit trees, largely peaches. From this venture has grown one of the most successful fruit plantations in the country, he having failed of a crop but twice in eighteen years.

In 1856, Bragg Bros. imported stock for a nursery, which was duly planted, and has supplied the material for a large share of the orchards of the county.

Other and important establishments springing up at various times at Detroit, Jackson, Kalamazoo, Niles, Battle Creek, Grand Rapids and other points, must be passed over without mention, except as contributing largely to the advancement of the fruit growing interest. Two or more of the most extensive nurseries in the State will be found at Monroe, one at least established as early as 1847.

An Indian orchard was planted on the Tittewassee river, three miles west of what is now Saginaw City, as nearly as can be ascertained, about 1820. This entire region had, prior to the discovery of salt, been regarded as worthless except for lumbering purposes. The first orchard was planted by settlers in the fall of 1833, and two others in the

fall of 1835. The trees for these last were obtained from the Sprague nursery, near Pontiac.

Some idea of the rapid developments of this region may be gathered from the following:

No census of orchard products was taken in this State prior to 1874. Taking the proportion of orcharding to improved lands, as given in this census, there would have been in 1854, 184 acres of orcharding in the Saginaw region, embracing the counties of Saginaw, Bay, Tuscola, Huron, Gratiot, Isabella, Clare, Midland, Gladwin, Ogemaw, Iosco, Alcona, Alpena, Cheboygan, Roscommon and Crawford. At the same ratio their amount of orcharding in 1860 would have been 5,150 acres, while the census of 1874 gives 10,539 acres besides 100 acres of small fruits. This region is quite successful with the culture of the grape, of which very creditable exhibits were made last season at the Centennial, and are also made at our State fairs.

The State Agricultural College has an organized department of horticulture, including pomology; but the unfortunate location of the institution in a locality unfavorable for pomological pursuits, is found to be greatly in the way of the general usefulness of this department. Notwithstanding this difficulty, the College, and especially its professors (aside from their regular duties), are doing very much to advance the knowledge and practice of horticulture in the State. The college was organized in 1855.

So far as we can learn, the first Horticultural Society in the State was organized at Detroit, in March, 1841, and was named the Detroit Horticultural Society. This Society seems to have been sustained until 1853, when it failed to elect a new set of officers and became disorganized. In 1854, a Nurserymen and Fruit Growers' Association was organized for the southern part of the State, but came to an untimely end during the year 1857. In September of this year a Society was organized at Jackson, taking the name of the Michigan State Horticultural Society, which held several interesting meetings, but died an untimely death during the year 1861.

During this period (twenty years), many local societies sprang into existence and continued for short periods; but so far as we know, none of them continue to the present, though there are several, as for instance, those of Monroe and Adrian, the date of whose organization we are unable to state. We purposely omit all notice, thus far, of what is usually known as the fruit belt, proposing to give it a separate consideration.

As early as the year 1848, when the first considerable assemblage of fruit growers convened at Buffalo, for the purpose of organizing a national society, as we learn from the reports of that meeting, specimens of Michigan grown fruits, shown there, excited much surprise, from their large size and beautiful appearance, some even questioning the correctness to name of well known sorts, on these accounts—a very pardonable incredulity when we recollect how little general knowledge had then accumulated respecting the variability of fruits under change of climate or soil.

Several unusually severe winters occurring during the fifth decade of the present century, and coming upon us after the destruction of the forests of the State had become considerably advanced, gave our people the first clear and unmistakable evidence of an unfortunate modification of the climate, by inflicting serious injury upon many orchards of the apple, and nearly ruining the peach plantations of the State. Important and obvious as are now the advantages of the eastern shore of Lake Michigan for the culture of fruits, up to the period mentioned, they were little understood or appreciated. It was not till the loss of our trees had enforced the lesson upon our people, and moreover, till the growth of our western cities and towns had created a local demand for fruit, that the success of casual experiment here began to draw special attention to these advantages.

For a considerable period after the public attention had become attracted to the importance of this exemption, it was popularly supposed to be limited to Berrien County and to the vicinity of St. Joseph. Hence there suddenly arose at this point a wonderful inflation of the prices of fruit lands, and an activity in orchard planting, that can hardly be said to have a parallel in the history of fruit culture. For this reason, the history of Lake Shore fruit culture opens with the development of this interest here.

In an address before the State Pomological Society, in June, 1872, Mr. Chamberlain, of the St. Joseph Herald, stated that the first peach tree planted here was probably planted from the pit, by Mr. Burnet, an Indian trader, about 1775, and that the Burnet orchard contained seedling peaches as late as 1831. He also states that, about 1834, the first improved (budded?) peach and apple trees were planted here by a family named Abbe, which trees fruited in 1837. Still, the business of fruit planting made slow progress till the growth of our western cities began to call for supplies of fruits.

Among the early planters of this region we may mention George Parmelee, then of Benton Harbor, now of Grand Traverse, who planted an orchard of peaches here in 1848, and after many prosperous fruit harvests, sold the property for \$43,000. What has been known as the Cincinnati orchard, and said to be the largest in the State, planted in 1857, on lands leased for twelve years, sold, three years prior to the expiration of the lease, for \$12,000, the purchaser selling the fruit the same year, for over \$15,000, net, and realizing similar sums for the crops of the two succeeding years. In 1871, this orchard produced over 37,000 baskets of peaches, netting about \$20,000.

Mr. Chamberlain farther states, that B. C. Hoyt established the first nursery at St. Joseph, and introduced buds of the Crawford peach. He accords the opening of the business of the purchasing and shipment of peaches to Chicago, to Captain Curtis Boughton, who settled here in 1834, and his father, Gains Boughton, who followed him in 1837. Much credit is also accorded by him to Mr. Morton, of Benton Harbor, who was active in developing this interest at this point, and in the opening of a harbor here, and who planted an orchard here as early as 1837.

Two canning establishments here during the season of 1872, put up 635,000 cans of fruits and vegetables, while large amounts of fruits were desiccated and rendered available in the market at various points, by means of the then comparatively novel processes of Alden and Williams.

After 1855, planting proceeded at an accelerated rate, and Mr. Thresher, of Benton Harbor, states that, as early as 1865, there were at St. Joseph and Benton Harbor no less than 207,639 peach trees, 40,957 pear trees, nearly 70,000 apple trees, about 10,000 cherry trees, 2,500 quince trees, 3,000 plum trees, 35,000 grape vines, and more strawberry, blackberry, and raspberry plants than could well be enumerated.

An actual census taken by the Fruit Growers' Association in 1869, shows two hundred and thirty-three persons engaged in fruit culture in this region, with the following average planted:

Peaches,.....	335,530 trees,	2,333 acres.
Pears,	57,519 trees,	758 "
Plums,.....	9,786 "	502 "
Cherries,	17,654 "	125 "
Apples,	155,995 "	2,958 "
Quinces,.....	4,988 "	33 "
Grapes,.....	91,208 vines,	204 "
Strawberries,.....		460 "

Blackberries,.....	719 acres.
Raspberries,	603 "
Aggregate,....	728,680 trees, 9,314 "

In the year 1872, the acreage in fruit had arisen to fully 12,000.

Up to this time it was asserted that an absolute failure of the crop had only occurred once after the excessively cold month of January, 1864.

The interest in fruit culture thus excited in the vicinity of St. Joseph, was not long in finding an echo from other points along the easterly shore of the lake. At South Haven, 22 miles north of St. Joseph, the next point affording suitable harbor facilities, orchards were planted about the year 1852; and from that time the interest gained strength slowly till the advent of the Kalamazoo and South Haven Railroad, by supplying an outlet eastward, removed many of the very serious embarrassments under which the locality had previously labored. For the last ten years the growth of this interest here has been greatly accelerated. In 1870, the South Haven Pomological Society was organized, and its weekly discussions have doubtless tended greatly to the building up of this interest by the dissemination of useful information. Although peach culture is and seems likely to continue to be the leading interest here, there is a manifest tendency to employ the fine variety of soils occurring here, in the growth of a general assortment of the fruits adapted to the climate.

In 1857 and 1858, a large orchard, mostly of peaches, was planted by A. S. Dyckman, which still holds position as one of the largest and most productive plantations of this region. The Delaware grape was first introduced and planted here in considerable quantity in 1864, by A. Eames, and proved highly satisfactory as a market variety.

Attention is believed to have been early directed to the harbor at the mouth of the Kalamazoo river, on which are located the villages of Saugatook and Douglass, a region well adapted by climate, soil, location, and aspect, to the profitable prosecution of fruit culture: but we are not in possession of facts respecting its early history in this respect. This interest, however had, in 1871, become strong enough to proceed to the organization of a society, known as the Lake Shore Agricultural and Pomological Society, which is understood to be still in existence, and to be an effective instrument for the advancement of the interests of fruit culture in that region.

The Hollanders who, many years since located at Holland, a few miles farther north, seem to have

given little attention to this specialty, although there is believed to be an abundance of land adapted to the purpose; but the recent organization of a Horticultural Society there may be supposed to indicate an increasing interest on the subject.

Grand Haven, as the harbor for the shipments of an extensive region, may be taken to represent the associated interests of Spring Lake, Fruitport, and a number of towns along the Grand river, extending to and including the city of Grand Rapids and the region about it. The fruit growing interest early secured a strong representation here, and for a time assumed a leading position, but the occurrence of one or two excessively severe winters during the present decade, has given a severe if not a fatal blow to the peach interest, in which large ventures had been made, compelling a resort to other classes of fruits. Grapes and small fruits are understood now to be largely taking the place of the peach.

Still further north we reach Muskegan, and further still, Whitehall and Montague, cities built up by the lumber interest, each having more or less fine fruit land tributary to it; but a large portion of the soil, as well as the general face of the country, is thought to be unsuited to the peach; attempts at the culture of this fruit having in many cases proved unsuccessful. The grape and berries generally are quite at home, as the snows of winter are more permanent at this distance north and deep enough to cover the plants beyond the reach of severe frosts.

Proceeding still northward, we next enter Oceana County—a new, and mostly a hard timber region. The comparatively small clearings are yet too fully sheltered to feel the changes already manifest in the older regions of the State, and there are good reasons to doubt if the present high reputation of the more inland portions of the county can be permanent. Still there is a belt of fine fruit land adjacent to the lake, which may be supposed to lie so directly within its ameliorating influence as to be permanently adapted to this purpose. Peach orchards of considerable age are growing here, and have fruited freely after the occurrence of the trying winters of the past few years. At this distance north only, the earlier varieties of peaches can be ripened with certainty.

At Pentwater, in northern Oceana, and also at Ludington, the fruit interest seems to have been but slightly developed, and little can be said as to the adaptation of the country to the business. What has been done, however, would seem to indi-

cate that all classes of fruits generally grown in the State, will succeed here, excepting possibly the peach, which, to succeed, would doubtless require elevated land as well as the immediate vicinity of the lake. Both here and in southern Oceana, the plum is found to be especially successful, as the curculio is yet comparatively unknown, and the fruit seems not to be liable to rot before maturity, as is found to be so commonly the case in regions farther south.

Experience at Manistee has been more full and extensive, and results have so far warranted conclusions similar to those respecting the regions last spoken of. Peaches have been tried and found unable to withstand the cold of occasional winters, while plums seem peculiarly at home, and the small fruits abundantly successful. The formation of a Horticultural Society here during the year 1875, has doubtless done much to inculcate among the people a taste in this direction.

We are indebted to N. A. Parker, of Frankfort, for the statement that the first planting of fruit trees in that region occurred about 1859 or 1860 to 1862, embracing apples, pears, peaches, plums, and cherries. The peaches and sweet cherries planted then and subsequently, were badly injured or ruined by the severe winters of 1872 and 1874; other fruits generally escaped serious injury, while grapes and small fruits are perfectly at home.

The Grand Traverse region possesses so many unusual peculiarities that it very early commanded attention for other than fruit growing purposes. The early settlers here, as in northern Michigan generally, were mostly engaged in lumbering. Still one of these, Mr. P. Hannabs, found time and means to plant one of the earliest and largest orchards of the region, an example which exerted a wide influence in this direction. In 1858, Hon. J. G. Ramsdell, who was for several years a Judge of this Circuit, settled at Traverse City and commenced at once the opening of a new farm to be devoted to the growth of fruit. To his taste and enterprise the region is very largely indebted for the demonstration, by dint of actual trial, of its capacities in this respect. His experiments, corroborated by many others of later date, have created the highest confidence in the capacity of the region for the growth of apples of the very highest keeping qualities, while pears seem healthy and productive, and the earlier peaches ripen perfectly, and, when planted on the more elevated grounds, seem abundantly able to withstand the most trying winters, thus demonstrating the fact that along the lake shore the peach

belt extends fully up to the parallel of 45 degrees north latitude. Perhaps no fruit can be said to be more at home here than the plum—specimens from this locality at our State Fairs, at the session of the American Pomological Society in 1875, and at the Centennial in 1876, having been awarded the meed of unqualified praise. Contrary to commonly received opinion, the plum orchard of Judge Ramsdell, which produced the fruits so shown and which is a model of health and vigor, is growing in light porous sand.

George Parmelee, formerly of Benton Harbor, now of Old Mission, Reynolds and Tracy, Curtis and many others may be mentioned as contributors to the Pomological reputation of this region. Much good has also beyond doubt been accomplished by the organization, in 1868, of the Grand Traverse Union Agricultural Society, which, in all its exhibitions, has made fruits one of its leading specialties.

The snow in this northern region invariably falls before the ground becomes frozen, and usually lies upon the surface to a depth of from one to five or six feet, so that all small fruits are, during the entire cold season, buried out of harm's way, and so remain till the return of spring. For this reason the grape, when fall pruned, can be left to take care of itself for the winter, only requiring to be re-tied to the trellis upon the return of spring, while the fruit goes direct from the vines to the cellar, coming out in the spring, with the least possible care, in a condition nearly as fresh as when gathered. The vines seem perfectly at home here, and we have been astonished to find the usually slender Delaware growing here with a vigor and productiveness fully equal to the Concord or the strongest of the Rogers' Hybrids.

As far north as Little Traverse, lands are now being rapidly opened and orchards planted; but experience, although so far favorable to the success of fruit growing, excepting probably with the peach, is yet too limited to warrant any conclusions respecting its ultimate results.

Little has so far been said respecting the cultivation of the grape, and we here take occasion to state that plantations of this fruit constitute a leading feature of the entire lake shore region; while, in the vicinity of Monroe, vineyards, largely of Concord but containing also Delaware, Isabella and Catawba, prove nearly or quite as successful as those upon the Islands of Lake Erie, representing nearly or quite as much territory and capital as all other fruit growing interests in the region combined—a

large share of the fruit being converted into wine, either upon the premises or in the city of Monroe, at which place several very considerable wine cellars are maintained. The crop of this fruit along the shore of Lake Michigan mainly finds a market in the cities west of the lake. Plantations of this fruit, some of them of very considerable extent, are scattered throughout the State and are generally successful, although in some localities, or during very trying winters a resort to covering or protecting is found desirable, if not essential.

A State Pomological Society was organized at Grand Rapids, mainly through the efforts of the lake shore fruit growers, in February, 1870, which has maintained a vigorous existence up to the present time. Its meetings, at first monthly, have more recently occurred quarterly; the annual meeting in December, followed by others in January or February, and June, with a fair, generally in connection with that of the State Agricultural Society, in September.

One of the leading features of the Society is the offering of premiums for orchards, gardens and ornamental grounds, which are examined during the growing season by an orchard committee, their examinations being fully reported through the press as well as in the annual volume of the Society's Transactions, which are published by the State.

This Society sent a delegation with a collection of fruit to the session of the American Pomological Society, held at Richmond, Virginia, in 1871. It was also represented at the session which occurred at Chicago, in September, 1875, and notwithstanding the very light fruit crop of this year, the display of Michigan fruit proved to be a very notable feature of the accompanying exhibition, and was complimented in the Committee's report as follows:

"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, grown at St. Joseph, and a plate of figs grown in the open air at South Haven, on the balmy shores of Lake Michigan! The entire display covered nearly nine hundred plates, and occupied the largest space held by any State."

Upon this display the Wilder Medal was awarded, which has been duly forwarded, and the Society has deposited it for safe keeping in the State Library at Lansing.

The Legislature of 1874-5, seem but to have feebly comprehended the importance to Michigan of a comprehensive display of the very varied interests of the State at the Centennial, as may be inferred from the fact that they only granted an appropriation of \$7,500, to cover the entire expense of such display. The Centennial Commission of the State, headed by Governor Bagley, were more fully awake to the importance of the emergency, and after making the most of the means thus appropriated, appealed strongly to the people to do what could be done by personal effort for the making up of the exhibit. In carrying out this idea the State Pomological Society was called upon to devise and carry out a plan for the collection, forwarding, and display at Philadelphia, at the proper times, of collections of the fruits of the State.

The State Agricultural Society having accepted the responsibility of the management of the agricultural exhibit, appointed C. A. Hgenfritz, of Monroe, to proceed to Philadelphia and receive and arrange the articles on their arrival, and also to manage the exhibit of fruits. At home the Society placed the arrangements for the collection and shipment of fruits for exhibition in the hands of its President, T. T. Lyon, of South Haven, assisted by the following corps of collectors:

Of Apples, the growth of 1875, N. Chilson, Battle Creek.

Of Apples, the growth of 1876, H. Dale Adams, of Galesburgh.

Of Pears, the growth of 1876, I. E. Hgenfritz, of Monroe.

Of Peaches, the growth of 1876, H. E. Bidwell, of South Haven.

Of Plums, the growth of 1876, Hon. J. G. Ramsdell, of Traverse City.

Of Grapes, the growth of 1876, Edward Bradfield, of Ada.

Of Small Fruits, the growth of 1876, A. O. Winchester, of St. Joseph.

After mature deliberation, it was determined that owing to the great distance and the warmth of the season during which the smaller and more perishable fruits would mature, the class assigned to Mr. Winchester should be omitted altogether, leaving the exhibit, after the spring show of long keeping apples, to commence with plums, peaches, and summer apples. The collection of long keeping apples, exhibited at the opening, was very fine, and attracted a large share of attention; and the same may doubtless be truly said of each of the other classes, with the possible exception of pears, for which the season

seems to have been somewhat unfavorable. It is however, difficult to arrive at any very distinct conclusions as to the relative merits of competing collections in such an immense assemblage of fruits, not only for the reason that the regulations precluded all comparisons by judges between the competing collections, but for the further reason that no publication of the recommendations of the judges has, so far, been permitted; and the valuable points of the several collections, except as they appear to the mere looker on, or to the representatives of the press in gathering their material for publication, remain practically unknown, so far as the public are concerned.

The fact having become known that the disease known as the yellows, had attacked the peach trees in the more southerly portions of the "fruit belt," the State Pomological Society, at its meeting in February, 1873, appointed a committee to examine carefully as to the extent of its ravages, with instructions to report as to the means employed to prevent its spreading, and at the same time to collect information as to its causes and remedies. A microscopist and also a chemist were placed upon this committee as a means of rendering its investigations the more thorough and effective.

The investigations of this committee develop the fact that at St. Joseph and the region adjacent, its appearance was first observed about 1868, and was attributed to the introduction of diseased trees from New Jersey. Its nature not being properly understood, no steps had so far been taken to arrest and eradicate it, and it was found already to have gained a strong foot-hold. Cases of yellows were also discovered at South Haven, but none at points north of this.

At St. Joseph and Benton Harbor, resort was had to experiments looking to the cure of the malady and the preservation of the trees; but such experiments have proved futile, at least so far that almost the entire stand of peach trees seems to have become affected, and to have, in subsequent seasons, either died outright or been destroyed for the purpose of clearing the ground for plantations of other fruits. Indeed, so generally has this been done, that peach culture can hardly be said longer to be a leading interest here, while the end is not yet reached.

At South Haven, and more northerly points, the disease appeared later, and with the warning coming from St. Joseph, at the first alarm the local Pomological Society took the matter in hand and appointed a committee, who, with the general concurrence of the community, were charged with the

summary destruction of trees found to be affected, whenever and wherever discovered.

Not satisfied with this, however, the Society memorialized the Legislature of the State, which, during the winter of 1874 and 1875, enacted a law applicable to the three counties of Van Buren, Allegan and Ottawa, authorizing the appointment, in each town, of a Commissioner charged with the summary destruction of all affected trees, and the seizure and destruction of diseased fruit when offered for sale or shipment. By the earnest employment of this means of eradication, although the disease is understood to have appeared at various points as far north as Spring Lake, it seems to have gained little strength, and, if not fully suppressed, seems likely to be kept within very narrow limits.

The State has by no means proved an exception so far as the ravages of the pear blight are concerned, and this malady, which seems to visit the country at large, with little respect to choice of varieties, is at present exerting a discouraging influence so far as the planting of this fruit is concerned.

South Haven, Michigan. T. T. LYON.

Minnesota.

From its earliest settlement, even down to the present time, an opinion has prevailed very extensively with our people that Minnesota is not, and will never be, a fruit producing State. And in the earlier years of its settlement it was no easy matter to find men with nerve and hope enough to enable them to plant trees in opposition to the public sentiment, and in the face of the difficulty attendant upon the settlement of a new country. Nevertheless, a few men, strangers to each other, and in different parts of the State, have planted and replanted fruit trees for more than twenty-five years, and struggled to succeed with a tenacity and persistency that excited the mournful pity of their neighbors; but, as for the first fifteen years of that time we were without horticultural societies or any organized effort in that direction, most of the early history of their trials and triumphs is lost to the world, or can only be gathered up by months of careful research, which I am unable to give at this time. The first attempts at fruit growing in Southern Minnesota were made by John Shaw, in Winona county, and Samuel McPhail, in Houston county. John Shaw first came to the State in 1851 and remained during the summer, and the next spring, 1852, made a permanent settlement in the Rolling Stone Valley. He brought with him, from his eastern home, a nail keg full of apple seeds,

which were planted by himself and a few neighbors. A portion of the trees have withstood the severity of our climate for a quarter of a century and borne several crops of fair fruit, and become the nucleus of flourishing orchards: a lasting monument to him whose forethought has brought about so much good, for he soon fell a victim to overwork and exposure. His name is a household word in that neighborhood, and the fruits of his deeds are a waymark of encouragement to the people who will come after. This one act of a benevolent, far-seeing man forever settled the question of apple growing in that neighborhood, and as a result Winona county is now far in advance of any other county in the State in the quantity of apples raised. In the spring of 1853, Samuel McPhail, one of the first settlers of Houston county, planted a few apple trees and started a small nursery in the town of Caledonia; and although he was thought to be visionary the neighbors soon caught the same spirit, and nearly every farmer planted his little orchard as soon as land could be cleared up and broken: but most of them were doomed to see their trees killed to the ground about every alternate winter, and they were then usually ready to join the company of *no faith*. A few persisted in replanting and caring for their trees, and were rewarded with a very encouraging degree of success. Among the most successful of these may be named, Wm. F. Dunbar, of Caledonia; J. and C. Kline, of Union; Capt. See, of Brownsville, and J. S. Harris, of La Crescent. Unfortunately the severity of the winter of 1872-73 nearly destroyed most of our trees, for they had generally been selected without any regard to hardiness. The pioneer in tree planting in the vicinity of St. Paul and Minneapolis, was L. M. Ford. He started a nursery of seedlings and grafts at Groveland, in 1850, and also imported and sold large quantities of trees. These trees from Iowa, Illinois, and New York, did very well until the winter of 1855, when he lost largely. But about fifteen out of one hundred varieties came through with any show for life, and about two years later the remaining fifteen killed out root and branch. Nothing was left but a few *Siberian* and *Transcendent* Crabs, which were now pronounced *iron clad*, and from this date they began to be eagerly sought for and brought *fever* prices: as a result, many planters were imposed upon by dishonest tree agents, who palmed off worthless trash for them. The same year, 1850, C. H. Oakes set some apple trees on Apostle Island, in Lake Superior, which survived the winters for many years and bore fruit.

About the year 1854, Peter M. Gideon, of Excelsior, Hennepin county, commenced planting trees quite extensively and met with heavy losses, but, being a man of unyielding disposition, as he had determined to make a thorough test he continued his experiments and persevered under difficulties that would have totally disheartened the most resolute of men. His efforts were finally crowned with success, and he now has fine orchards of the *Duchess of Oldenburg* and seedlings of his own growing that are now fruiting, and has added to our list of hardy apples the *Wealthy*, a Minnesota seedling of great beauty and fair quality, which is creating a great sensation and bids fair to soon find a place in every orchard and garden. There were a few others in different parts of the State who planted trees between the years 1850 and 1859, but we have no record of them; neither are we able to learn that any fruit of the *Pyrus* family was raised in the State previous to 1860, except Siberian Crabs, and one single specimen of *Flemish Beauty* pear, and it is probable that not one apple tree out of twenty-five planted previous to this date had survived three winters.

At the State Fair, held at Fort Snelling in that year, premiums were awarded to Mr. P. M. Nichols, of St. Paul, for display of Siberian Crabs, and to H. F. Matterson for pears; also R. Knaphed was awarded first premium for grapes, the varieties being *Isabella* and *Catawba*; and according to the *Farmer and Gardener*, then published at St. Paul, Mr. Eli Robinson, of Niringer, Dakota county, had a few apples on his trees. The same year, 1860, J. S. Harris raised a few *Bailey Sweet* apples of great size, and also *St. Lawrence*. The trees belonging to Harris that produced the first apples are still living and in good health, and one of the trees has twice produced sixteen bushels per year. In the year 1861 several men, in Houston, Winona and Wabasha counties, raised a few apples: Mr. Huff and Dr. Ford, of Winona, had some fine *Flemish Beauty* pears. Reports of these successes began to circulate through the papers of the State, and free planting began to receive considerable attention.

The first public display of apples was made by J. S. Harris, of Houston county, and E. Rollins, of Wabasha county, at the State Fair held in Rochester, Olmstead county, September 3d, 4th and 5th, 1866. The report of the fair says Mr. Harris showed nineteen varieties, mostly grafted fruit, and some pears, the largest weighing seventeen ounces, and Mr. Rollins seven or eight, mostly seedlings. This little display of fruit elicited much comment and was the greatest attraction of Floral Hall; and

thousands of people improved the opportunity to feast their eyes upon a sight which they had long yearned for, but never beheld since they left their eastern homes, and hundreds returned to their homes determined to raise their own apples; and from this fair we may date the first organized efforts in fruit growing. At this time a Fruit Growers' Association was organized and has become the present State Horticultural Society, which usually holds two meetings a year, at which all kinds of fruit and the methods of cultivating them are discussed, and varieties recommended for trial and general cultivation; and although the winters of 1872 and '73 greatly injured the best orchards in the State and destroyed nursery trees by thousands, the interest is steadily on the increase and orchards are being planted in all parts of the State.

The *Duchess of Oldenburg* and *Tetofsky*, and *Transcendent* and other crabs are succeeding nearly everywhere, and the *Red* and *White Astrachan*, *Alexander*, *Fameuse*, *Haus*, *Plumb's Cider*, *Wallbridge*, *Wealthy*, and *Tulman* and *Price's Sweet* and *Utter's Red* are pretty sure to succeed in the counties bordering the Mississippi river, and we have a large list of supposed hybrid Siberians, many of them as large and fine as apples that promise to be hardy in every locality in the State. The interest in grape culture is growing rapidly, and nearly every effort in that direction has been crowned with success. Truman M. Smith and Rudolph Knaphed, of St. Paul, are successfully growing about forty varieties; and we have a number of vineyards of the Concord and Delaware where they are grown extensively for market. If we continue to advance for the next ten years as we have for the past, we shall rank with many of the older states in growing apples, and be excelled by very few in grapes and small fruits. At the State Fair in St. Paul, in 1876, there were on exhibition more than 120 varieties of apples, thirty of Siberians, and fifty of grapes, all of fine quality and good appearance.

Respectfully,

JOHN S. HARRIS.

Nebraska.

BROWNVILLE, Nebraska, October, 1877.

The State of Nebraska is a portion of the National domain originally and familiarly known in the history of the United States as the "Louisiana Purchase," and was more particularly designated as the "Indian Territory." By such tourists and national authorities as General Fremont and Captain Miles, of the U. S. Army, that portion of the territory

named and now included in the State of Nebraska, was pronounced "barren, sterile, unproductive and unfit, in all respects, for civilized man, or beast," and was made, by geographical record, the "Great American Desert." The Indian title to lands was extinguished in the act enabling the Territories of Kansas and Nebraska, May 23d, 1854. Even at this date few, if any, of those who came to the Territory, entertained favorable ideas of future development and homes adapted to the civilization of the age. *All*, it may be safely said, were adventurers—nomads!

This much by way of preface to the pomological history proper, is not deemed inappropriate, as showing under what adverse circumstances fruit growing was commenced in Nebraska.

Settlers and settlements followed the extinguishment of the Indian title to lands and the organization of the territory. A few more adventurous spirits, anticipating, had preceded the formal and official occupancy of the territory by the general Government. The first settlements were made along the west bank of the Missouri River. In keeping with the prevailing idea before expressed, it was not thought by those making these first settlements, that much, if anything, could ever be accomplished in the matter of successfully cultivating the soil. Fruit growing was simply hooted at. Not an individual believed fruit could be grown. A few persons, however, more in keeping with former tastes and habits, and as much "to be doing" as otherwise, planted a few fruit trees in the early days of settlements. The earliest planting of which information is obtained, and which is believed to be the very first in the territory, was a few apple trees by Stephen Story, and Rev. A. Ballard, in Richardson county, in the south-east corner of Nebraska. The same year, Christian Bobst planted a few apple trees in Pawnee county, the next west of Richardson. In the year 1855, Rev. John W. Hall planted apple trees in Nemaha county, adjoining, north of Richardson, on the river. The same year James H. Masters planted fifty-six apple, five pear, and five cherry trees, in Otoe county, the next county north from Nemaha. Thomas Gibson planted, in the spring of 1856, an apple orchard of 500 trees, near Fontenelle, then in Dodge county, now in Washington county. In 1864 this orchard was destroyed by a prairie fire. In the year 1856, J. Sterling Morton planted an orchard of four hundred apple trees in Otoe county. This was, perhaps, the first orchard of any dimension, planted in the territory. The same

year the writer planted, in Nemaha county, one hundred fruit trees—apple, pear, cherry, and plum—obtained from Ellwanger & Barry, Rochester, New York. Not a single tree out of the lot was lost, notwithstanding they were three weeks in transporting. One of the pear trees is remembered to have been nearly in bloom in the box, and actually fruited two pears the season planted. These were undoubtedly the first pears grown in the territory—*Duchesse d'Angouleme* from a dwarf. The first apple, so far as now known, was grown by John W. Hall, in Nemaha county, 1857—*Red Astrachan*. In the year 1857, Broad Cole planted the first apple trees in Cass county, adjoining north of Otoe, also on the river. In 1858, Colonel George Stevens planted an orchard of one thousand apple trees in Washington county, near "Old Fort Calhoun." This was the first orchard of that magnitude in the territory.

The varieties planted by parties in 1854 are not known. Mr. Morton planted *Rawle's Genet*, *Yellow Bellflower*, *Winesap*, *Rambo*, *Perry*, *English* and *Golden Russets*, *Westfield Seck-no-further*, *Tatman's Sweet*, *Haskell Sweet*, *Sweet June*, *Red Astrachan*, *Maiden's Blush*, *Haus*, *Hawthoruden*, *Autumn Swaar*, *Monarch*, *Keswick Codlin*, *Roman Stem*, *Fallowater*, and *Ribston Pippin*. His trees were obtained from Elgin, Illinois. Colonel Stevens obtained his trees from Virginia. They were *Northern Spy*, *Baldwin*, *Bellflower*, *Rambo*, *Rawle's Genet*, *White Winter Pearmain*, *Sweet Bough*, and *Vandevere*.

All the planting referred to above was done in the counties bordering on the Missouri River, except that in Pawnee county, the second tier west from the river.

The foregoing is, perhaps, sufficient in detail and extent, and for space allowed this report, and to serve as data of the introduction of fruit growing in the State, or rather Territory. Suffice it to say in addition, that as soon as trees were old enough to produce fruit, they surprised every one. Trees bear earlier here than before known in the older states, and as a rule, show fruit of a superior character, as has been demonstrated by our exhibits at the meetings of the American Pomological Society, and at the Centennial Exhibition.

While we have more advantageous natural surroundings essential to fruit growing, in what we call the "River Counties," where the enterprise is undertaken carefully and intelligently, gratifying results and success have followed efforts wherever made in any section of the State. Since the fact of

successful fruit growing in Nebraska has been established, much attention has been given to planting, and the desire and determination to prosecute the enterprise is constantly on the increase. The greatest impetus has been given within the current decade. Of course, we have, as yet, but few "old bearing orchards." But few persons are making a specialty of fruit growing. In most instances orchards are grown only in connection with other farm operations. Quite a number of orchards known contain ten, twenty, and as high as forty acres. The writer has forty acres, in variety—apples, pears, peaches, plums, prunes, apricots, grapes and other small fruits. One instance is known of a single orchard giving receipts, in one season, of seven thousand dollars.

Sufficient information is not at command to give even an approximate idea of the number of trees planted or the number of acres under cultivation in fruit. Scarce a farmer, however, who has been under way over one year, but who has more or less of an orchard planted.

Our fruit list, of such varieties as we have found hardy and reliable, has been already furnished and published in the Proceedings of the American Pomological Society, and therefore need not be here repeated. Each season, however, we are able to add to the list. This year we have fruited to great satisfaction *Esopus Spitzenberg*, *Baldwin*, *Ribston Pippin*, *Yellow Bellflower*, *Grimes' Golden* and *Holland Pippin*, which are considered valuable acquisitions to our list. At our late State Fair were exhibited seedling apples, pears, peaches and grapes, of decided merit. Our seedling peaches particularly are of great merit.

At the last meeting of our State Horticultural Society, the special lists of apples were named and specially recommended as reliable in all respects, one of seven and one of twelve. The list of seven consists of: *Red June*, *Cooper's Early White*, *Maiden's Blush*, *Fameuse*, *Rawle's Genet*, *Ben Davis* and *Winesap*. To this list was added *Red Astrachan*, *Rambo*, *White Winter Pearmain*, *Dominic* and *Talman's Sweet*, making the list twelve.

The Nebraska State Horticultural Society was organized September 29, 1869, during the State Fair held at Nebraska City that year. A few friends accidentally meeting in the office of the Secretary of the State Board of Agriculture, in the afternoon of the day named, Judge O. P. Mason suggested organization and it was done almost "in the twinkling of an eye." As a matter of pomological historical record, the names of the first officers are here given:

JAMES H. MASTERS. *President.*
ROBT. W. FURNAS. *Secretary.*
O. P. MASON, *Treasurer.*

Members.—The three officers named, and J. Sterling Morton, Chas. H. Walker, J. Edwards, jr., T. J. Hoagland, W. D. Wilson (of Iowa), J. W. Hollingshead, John H. Croxton, Benton Aldrich, J. M. Taggart, Alvin Saunders, J. W. Pearmain (of Iowa), Louis A. Walker, David Butler, F. A. Tisdell, jr., Oliver Harmon, J. H. Gregg, J. B. Weston, P. W. Hitchcock, H. R. Raymond and Geo. B. Graff.

The annual meetings are held at the same time and place with State Board of Agriculture, in January of each year. Exhibitions, except at June meetings, are made in connection with the State Fair in September of each year.

At the State Fair, at Lincoln, September, 1877, over two thousand plates of fruit were on exhibition, embracing 275 varieties.

The successes which have followed our fruit culture, and the creditable exhibits made, both at home and abroad, warrant the conclusion and assertion that Nebraska is peculiarly a fruit growing region, especially the counties bordering on the Missouri River and along other principal water courses. Scientific analysis of our soil shows it to be that peculiar "Loess" deposit, in many respects the most remarkable in the world. By actual comparison, but little difference is found between the famed deposits of the Rhine valley, as shown by Bischoff, and the "Loess" soil in Nebraska. On the west bank of the Missouri River, being the eastern boundary of the State, the elevation is 900 to 1,000 feet higher than the water level in the Gulf of Mexico. On the western border, about 400 miles from the Missouri River, the elevation is 5,000 feet above the Gulf level, a mean rise of ten feet to the mile. To the 100th meridian the ascent is about eight feet to the mile. After that it is more rapid. In reality, Nebraska is the lowest eastern slope of the Rocky Mountains. The drainage is perfect.

Respectfully submitted,

ROBT. W. FURNAS,
Vice-President for Nebraska.

North Carolina.

ROCKINGHAM, N. C., August 2, 1877.

Hon. Marshall P. Wilder:

DEAR SIR:—I had hoped, until recently, that I should be able to attend the next meeting of the American Pomological Society, but the near ap-

proach of the called session of Congress, and business demanding my attention in the meantime, will prevent it. The next best thing which I can do, will be to give some account of the rise and progress of fruit culture in this State, and the names of certain varieties which are adapted to our soil and climate.

I regret that I am unable to state the *time* when our people *began* to interest themselves in the cultivation of fruit. No doubt it was early in the history of our State, for there are existing now in many parts of it trees of great age, which were planted during the past century. The process of grafting seems to have been well known, and though I have no knowledge of any nurseries, I do not doubt that in most of the counties there were persons who oftentimes used the art for local purposes, and then propagated such varieties as were esteemed to be of value. Apples and peaches were the fruits most generally planted. The better varieties of pears were comparatively unknown until within the past twenty-five years, though there are some old trees known to have been planted nearly one hundred years ago, which bear most excellent fruit.

The first nurseries with which I have any acquaintance, were carried on by Joshua and Thomas Lindley, in Chatbam county. Subsequently Owen Lindley became interested in the business. Joshua Lindley also had a nursery near Greensborough, Guilford county, and about that time Samuel W. Westbrook established and carried on one until his death. Besides these, Charles Mock, of Davidson, and Thomas A. Fentress, of Guilford, and a man named Liles, of Union county, propagated and sold trees, and for a few years prior to 1861, your correspondent with others, carried on the business—propagating and selling more pear trees *of their own raising*, than any other parties in the State. Some of the Lindleys and Westbrook are now in the business, and sell thousands of trees every year, and at better prices than they commanded in old times.

Our State is divided into two distinct parts, geographically. The eastern section is generally sandy, whilst the western is composed of the more primitive formations. The peach and the pear will flourish in nearly all of the State, while the apple succeeds much better in the hilly, or older region. Indeed, in what we call "the up country," this fruit does quite as well as in any other part of the country. In that part of the State, and especially among the mountains, many varieties will keep through the entire winter, and if the people had facilities for transportation they would supply our

home folks with all such fruit as they would need. Even the railroads which they have, have such rates of freight as to forbid the idea of sending off their fruit, really discriminating *against* their own people.

In all the counties lying west of the Blue Ridge, and in Surry, Yadkin, Alexander, Iredell, Wilkes, Caldwell, Burke, Catawba, McDowell, Rutherford and Polk, and many others, late keeping kinds are much cultivated, while in all the others, summer and fall varieties are found. Outside of the mountains, such as keep well in Pennsylvania and Ohio are only fruited for fall because of the greater length of the heated term.

Elevated positions are found in nearly all our country where the peach rarely fails to produce a crop. Generally, however, the late spring frosts destroy the young fruit two years out of every three. Nearly all varieties are of surpassing excellence, especially on young trees, or those which are kept severely pruned. The Peach needs a warm sun to develop its delicious flavor, and this year in all our borders we have had immense crops. Among the kinds which do well beside the *very early* kinds, are *George IV*, *Old Mixon*, c. and f., *Newington*, f., *Early Admirable*, *Chinese Cling*, *Large White*, *Washington*, c., *Thomas*, c., (the *very best*), *La-Grange*, *Morris Cling*, *Pomponne*, *Crawford's Early* and *Late*, *Tillotson*, *Ward's Late*, *Amelia*.

If we knew any remedy for the blight which, like the toothache, according to Barry, is "the hell o' a' diseases," we could do well with pears all over the State. But alas, it defies all our efforts, and some varieties fall such an easy prey to its ravages that they are hardly worth the attempt at cultivation. Despite all these adverse circumstances, I have had this year a fine crop of *Bloodgood*, *Beurre Giffard*, *Ott*, *Bartlett*, *Louise Bonne of Jersey*, *Seckel*, *Duchesse*, *Beurre Superfin*, *Belle Lucrative*, *Winter Nellis*, *Beurre Chergean*, *Josephine de Malines*, *Beurre d'Anjou*. The *Diel* is worthless. Indeed, I had specimens of the *Seckel* which were equal to any which you ever saw. If I had thinned the fruit to a moderate crop, some of them would have probably surpassed anything which the climate of New England can do. The *Duchesse*, all things considered, is worth the whole list, and if I were to plant 1000 trees for market purposes, 900 should be the *Duchesse*.

By proper care grapes succeed well, as Will's vineyard, at Shelby, and Asbury's, at Charlotte, testify. In the sandy region the *Scuppernon* does admirably, and is almost universally cultivated.

Currants, gooseberries, &c., are not much attended to. In the *higher* sections cherries do well.

The meetings of the Society are held at a season of the year when, south of 36° 30', most of pears and peaches are gone. We cannot, under such circumstances, ever make much of an exhibition. If a session should be held about the 1st of August, our show would be far better. But no time will suit all sections.

Trusting that the meeting will be both pleasant and profitable, I am, very truly,

Your obedient servant,

WALTER L. STEELE.

Ohio.

REPORT OF THE HORTICULTURE AND HORTICULTURAL PROGRESS IN OHIO.

To the Secretary of the American Pomological Society:

WILLARD C. FLAGG, Esq.:—*My Dear Sir:* In compliance with your request, I shall attempt to give you an outline sketch of our beginnings and progress.

The early horticulture of a people who were obliged to carve their way by laborious blows of the axe upon the tall trees of a forest wilderness, must have been of a very limited and primitive character, and its records, if ever written, have not descended to our times.

We cannot doubt, however, that the hardy pioneers whose attention was directed to the fertile lands awaiting them in that indefinite region "lying north and west of the Ohio River," coming, as they did, from the older settlements of the Atlantic border, brought with them plants and seeds of many horticultural products that would help to supply important wants in their new homes. Beyond a few rumors, and especially the stories of poor bare-footed Johnny Appleseed, the accounts of our earliest horticulture are lost in the mists of obscurity. With the clearing up of the farms, and the increase of population all this was changed, increased comforts were attended by great improvement in domestic affairs, luscious fruits and nutritive vegetables from the garden were soon substituted for the inferior wildings of the prairie and forest, and the famous hog and hominy of early times shared the honors with the nutritive and acceptable contributions from the garden.

The introduction of fruits required more time, as they were mostly brought as seeds, which required years for their growth and development into a fruit-

ful condition. Peaches were among the first to reward the planter, and they were successful everywhere, but, as now, a most uncertain crop.

The apple, having a larger period of growth from seed to fruitage, was still often brought across the mountains in this way, the settler, no doubt hoping to reproduce the favorite varieties of his paternal orchard. Before long, as the demand increased and as the means of transportation were improved, small trees also were brought into the settlements.

As the farms spread and the settlements grew apace, an enterprising farmer here and there started a nursery of seedling fruit trees to supply his own and his neighbors' orchards. In some regions, favorite varieties were multiplied by suckers or "sprouts," as they were called, and in this way certain varieties have been widely spread along the Ohio River. The art and mystery of grafting and budding was then unknown.

Small trees, seedlings, sprouts, and in some few instances grafted plants, were brought by some of the settlers from their former homes, when it was necessary to depend upon horseback for transportation. In this way the valleys of Virginia on the south and east, and the French settlements on the north and north-west, made valuable and notable contributions to the early pomology of our State, the traces of which are still visible. Two of the most marked impressions were made, however, on the river border: First, by the intelligent emigrants from New England, who settled the Ohio purchase, with its central station at the mouth of the Muskingum. These brought a collection of the varieties then prominent in the orchards of Connecticut, and next came the extensive collection of choice fruits of all sorts brought into the Miami country by Silas Wharton, who culled them from the famous nurseries of Coxe, the leading pomologist of his day in New Jersey.

It has often been observed in attending pomological exhibitions, and also in travelling through the country, that the prevailing origin of the population of the region was indicated with considerable certainty by the leading varieties found in the orchards. This very natural result is likely to be less marked, as the orchardist and nurseryman becomes better informed and cultivates more extensively, and his varieties are drawn from a wider range.

The nurserymen and fruit growers increased with the growth of the country, but as they were usually men of small means and widely scattered, there were many fruits with local names that would be

unknown in adjoining counties. Upon comparing notes when they happened to meet, they discovered the greatest confusion in their nomenclature.

About this time the worthy Secretary of our State Society, Mr. M. B. Bateham, who had been associated with the nurseries that have since made Rochester, New York, so famous a pomological center, conceived the idea of bringing all our fruit men together in convention for conference. Accordingly a call was issued, in his agricultural paper, *The Ohio Cultivator*, in 1847. In response to this a meeting was held in September of that year, at Columbus.

The occasion was very interesting, although the attendance was not large but made up of very earnest men. Each member brought his fruits, which were displayed with their local names, and it was soon discovered that while the same fruit thus appeared under many titles, there were also many fruits that were very different, and yet they were shown to us under the same name, as though they had been supposed to resemble some favorite variety previously known to the owner. One of the chief labors of this and many subsequent meetings, consisted in attempts to correct and to harmonize this confusion of synonyms. Many interesting communications were presented at this meeting relating to the earlier introductions of fruits.

As an important agency in the work, a State fruit committee was appointed to continue their observations, and to report the result at a future convention, for, so pleased were the members in attendance, and so thoroughly in earnest were they, that it was agreed to re-assemble. They and many others accordingly convened in September, 1848, when the interest aroused by the first meeting was fully maintained. Upon this occasion, our friend A. H. Ernst, of Cincinnati, an energetic and devoted nurseryman and fruit grower, was elected President, an office which he not only held, but nobly filled, until his death in 1860.

In 1849, the Convention again assembled in December, so as to enable its members to compare their winter fruits in a more advanced state of maturity.

After two or three years' interruption the nurserymen met again, in the month of August, 1852, when they held a fourth session, making an extensive display of fruits. By this time, notwithstanding the reduction of the lists by solving the tangled mazes of synonymy that had existed, it was thought by most of the propagators that too many varieties were cultivated, and that the multiplica-

tion and dispersion of inferior kinds ought to be discouraged. Hence a good deal of time was spent in revision of the catalogues, and especially in the formation of a rejected list of kinds considered unworthy of general cultivation. In this labor new difficulties beset them, for so great an influence is exerted by soil and climate, that varieties which succeeded admirably in one section of our broad State, failed utterly in others to give satisfaction.

The gordian knot of this dilemma was happily resolved by dividing the State into regions in which the strong geological features were selected as the basis, and combined with the climatic influences of latitude, exposure, elevation, etc., so that what had appeared insurmountable difficulties were harmonized.

At this meeting the members concluded that their objects were of sufficient importance to require a more permanent organization. This was effected by the adoption of a very simple constitution, under the popular title of the Ohio Pomological Society.

In 1853 the Society held another meeting, when the attendance was not so large. Feeling the weight of the burden they were carrying, while also realizing the importance of their work, in all its bearings upon the common welfare of their fellow citizens, it was resolved to call upon the legislature for assistance. The work of years had been done and the information of the members had been collected and printed at private expense. This had been widely distributed for the benefit of the people, and it seemed only fair that the public treasury should be called upon for assistance. Our efforts were crowned eventually, by receiving a very modest sum, after struggling with the legislature, some of whose members exercised their small wits at ridiculing what they were pleased to term our high sounding title, Pomological.

The next meeting of the Society was held in December, 1854, when it was agreed to hold our sessions *biennially*, alternating with the American Pomological Society so as not to interfere with that body, and indeed, rather to prepare material for our reports to the National Society. This constraint, however, did not appear to be satisfactory, for it appears that in a little more than a twelve month, to-wit, on the patriotic 8th of January, 1856, the Society again met. The two years' interval was not popular with men of such progressive ideas as were possessed by the nurserymen and fruit growers of Ohio, who, indeed, found themselves engaged in a great work. Thus the word *biennial* assumed a new significance with them as readily as

it did, about the same time in the state legislature, which met, by adjournment, twice within the year, when acting under a constitution requiring biennial sessions. In this way our Society made its eighth report, of meetings held at Cincinnati in September and at Columbus in December of the year 1857, at which much good work was done, and the biennial sessions have since been ignored.

The ninth report embraces accounts of the proceedings of three important meetings, held respectively, at Columbus, in December, 1858, at Cincinnati the following June, and at Zanesville, in September, 1859.

On the 13th day of February, 1860, our worthy president, A. H. Ernst, who had been a devotee to horticulture, and an ardent supporter of this Society, succumbed after long suffering, caused by exposure when engaged in his favorite pursuits.

The tenth report contains an account of proceedings of meetings held in January, 1861 at Cincinnati, and at Columbus, in February, 1863. Our excellent leader was sadly missed, and the distracted state of the country exerted its influence even upon the peaceful pursuits of horticulture.

The eleventh report contains the doings of the Society on its first meeting in the North-western portion of the State, at the thriving city of Toledo, in January, 1864. The valley of the Maumee had already asserted its claims upon the Society by its beautiful displays of fruits at the State Fairs, which were rather ostentatiously exhibited under the title of North-west. Another meeting was held in December of the same year in the North-eastern quarter, at Painesville, the home of our worthy secretary.

Cincinnati was once again selected by the Society, which then held a meeting in December of the following year, the proceedings of which constitute the material for the thirteenth report, from which it appears that there was no lack of interest in Pomology.

Meanwhile, notwithstanding the efforts and activity of our Society, the grape growing interests of our State, and of the region along the lake shore extending to the eastward and westward into other states, had assumed so great proportions, that a society especially devoted to the vineyard interest was organized, and for sometime maintained a spirited existence; but it was found that the most active members of each organization were equally prominent in the other, and after a time the pomologists and the oinologists thought it best to unite their forces, and also to make their work include all

branches of horticulture, as to a considerable extent we had already done under our original title. Thus at a joint meeting, held in Sandusky, in December, 1867, without dissolving, but by conference and agreement, the two bodies were merged into one under the title of the Ohio Horticultural Society, which is designed to cover all branches of the subject, and to invite to our assistance all who admire nature in her many forms of garden culture. From this date our reports begin a new series, and new enumeration.

Our meetings are held annually in December, and oftener when considered advisable. The *ad interim* committee is a body which was originally appointed to note progressively the fruits of the passing seasons in the intervals between the meetings, and to make their reports at the annual gathering; this body has grown into the executive committee of the Society, and is authorized to hold meetings in the interests of the Society and of horticulture at any point and at any time when it may seem advisable. Such occasions have frequently occurred.

Since 1867 our meetings of the current series have been regularly held each year, and we have met frequently at the following places and dates:

The second meeting at Columbus, Dec.,	1868.
Third " Dayton, "	1st, 1869.
Fourth " Urbana, "	7th, 1870.
Fifth " Millford, Nov. 22,	1871.
Sixth " Zanesville, Dec. 4,	1872.
Seventh " Mansfield, "	10, 1873.
Eighth " Akron, "	9, 1874.
Ninth " Toledo, "	1, 1875.
Tenth " Circleville, "	14, 1876.
Eleventh " Ravenna, "	5, 1877.

In the rapid sketch of the history of our horticultural organization it has been impossible to enter into details respecting the work performed, but without boasting respecting the influence resulting from our efforts to diffuse a love of horticulture, and a knowledge of its fruits among our fellow citizens, we may point to the 1400 pages of printed matter which have been issued and laid before them, in our endeavors for their benefit as well as our own. This amount might have been greatly extended, but for want of means when we published our own reports, and a jealous supervision of the legislative committee since the state has become our publisher.

J. A. WARDER.

Provinces of Quebec and Ontario.

The rise and progress of Fruit culture is so recent in these provinces, that the beginning, middle, and

end, may be said almost to be within the memory of living men. If not of men of the present generation, certainly, there are those amongst us, who have conversed with the originators of our fruit interests, more especially with those pioneers of our Western Provinces.

The French first introduced fruit trees into Lower Canada a little over two hundred years ago. Authentic accounts still remain of the early efforts of these industrious settlers to forward the humanizing influences of fruit growing. Several enduring monuments, or reminiscences of their first essay remain to us. To them we doubtless owe the introduction of the *Fameuse*, which seems to have made the Isle of Montreal its especial habitat. At Three Rivers there are also other evidences of their indefatigable efforts to introduce fruit growing, and indeed, the same may be said of Quebec and the whole of the upper part of the Lower Province. The *Summer Bon Chretien* owes its introduction also to the most polite nation. Few trees have so successfully resisted the attacks of the blight as this has done, and although in these days of greater advancement, other and finer varieties have taken its place in the good opinion of horticulturists, yet, as almost proof against pear blight, it ought even now to be esteemed.

The question of fruit introduction into Upper Canada depended on the question of time. Slow progress was made when the struggling settlers had to keep up a constant warfare with the different Indian tribes for a very existence. The taste, however, for fruit culture, notwithstanding all difficulties, began to spread. When in 1794-5 Mr. Baby removed from Lower Canada, from Quebec indeed, to the French settlement of Sandwich, he brought up with him the following varieties of apples, which have spread with wonderful celerity over our western counties. These are, *Fameuse*, *Pomme Grise* (two varieties), *Red Calville*, *Roseau*, another called *Loux Roseau*, the *Bourrasa*, and one called *White Calville*, which Mr. James Dougall, of Windsor, a near relative of Mr. François Baby, calls the *Winter Pearmain*. Mr. Baby may be said to be the father of fruit culture in the west. His efforts for the dissemination of fruit trees have been worthily seconded by his relative, Mr. James Dougall, who has followed with steady and onward step the pioneer course of Mr. Baby. Mr. Dougall, who is not unknown to American fruit culturists, has at much expense introduced into our country the choicest productions of Van Mons and Leroy, sparing neither money nor pains to add to the Pomona of our west-

ern Province. In the decline of life he now sees a rich reward for his indefatigable efforts. The whole of the Peninsula, as well as the neighboring State of Michigan in the great Republic, is covered with trees introduced and raised by Mr. Dougall. In speaking of the fruit interests of Ontario, it would be unpardonable to forget Mr. Dougall's merits as the introducer of the seedling peach, styled by him and catalogued as *the Rose*, his *Goyeau* apple, and his *Elliott's Early* pear. Besides, he has brought to notice a great number of seedling small fruits of various kinds. The horticulturists of western Canada have a deep debt of gratitude owing to Mr. Dougall, of Windsor.

On or about the year of our Lord already mentioned, there were a number of U. E. Loyalists, from New Jersey, and the Valley of the Mohawk, who emigrated to Canada, and who carried with them the taste and interest which they had cherished in the United States for fruit, and who introduced the like taste and interest into various districts of our country. Notably was this the case in and around Belleville, Prince Edward peninsula, the western shores of Lake Erie, around and about Simcoe, in the county of Norfolk, and in the neighborhood of Hamilton on the western shore of Lake Ontario. Col. Land settled on the present site of the City of Hamilton early in the last decade of the last century. He told me himself that he received on one occasion, when he carried a grist on his shoulders from Hamilton to Grimsby, the present of a few apple pips, and most carefully committed them to our benignant mother earth the following spring. His orchard, of which he was very proud, grew out of such small beginnings, which were continually added to as his visits here and there enabled him to develop his taste for fruit trees. The remains of similar seedling orchards are still to be found all over the earlier settlements in Ontario. A large amount of excellent fruit is yet to be discovered existing in many of our old townships. The Fruit Growers' Association of Ontario has done much to call forth to notice some of these superior seedlings, but still a great deal has yet to be done.

It was not till late years that the finer sorts of apples, and other varieties of fruits, began to find their way into our settlements from the American side. Rochester and Lockport were the depots whence our standard and best varieties were received. Nor ought we to omit to mention American settlers, a fair sprinkling of whom will be found in most of our clearances and large towns. They, too, brought with them their love of fruit culture, and

first set a noble example in this culture to all their neighbors. The beginning of a higher and better taste for fruit culture dates about as far back as the time when the American Pomological Society was first started. Very little over twenty-five years ago, Judge Campbell, of Niagara, Dr. William Craigie, of Hamilton, and Dr. Hurlburt, gave a decided impetus to fruit-growing by instituting, and for a time almost wholly carrying on, the Fruit Growers' Association of Ontario. That is, the Society which they were the means of instituting, in the end became what is now recognized as the Fruit Growers' Association of Ontario. It was in many instances up-hill work to create any enthusiasm in the breasts of people who had never realized the benefits to be derived from horticulture. Striking illustrations of this fact might be given. Suffice it to say, that these men and their friends had influence enough to impress the government of the day with the importance of the fruit capabilities of the Province, and to obtain an annual government grant for the advancement of horticultural interests. This was the beginning of a new era in our provincial fruit growing—a new and increasing interest speedily grew up, and from almost infinitesimal beginnings our Society appears to overshadow the land.

The names of two or three professional nurserymen loom up in the early history of fruit interests, who deserve a timely mention. We allude to Mr. George Leslie, senior, Toronto, who, for years, was himself a centre from which were issued a large amount of good varieties of fruit trees. He still survives to see the mighty impulse which fruit growing has received, while he himself falls into the sere and yellow leaf.

The late Dr. Beadle, of St. Catharines, the father of the present admirable Secretary of the Fruit Growers' Association, had no mean share in benefiting the horticulture of Ontario. An educated gentleman, of cultivated tastes, and an enthusiastic fruit grower, he sent from his nursery a large amount of the fruit trees which to-day adorn the homesteads of our Gore and Howe districts, and which bring health and happiness to the contented inmates. These men, with Mr. James Dougall, already mentioned in connection with Mr. Baby, were the pioneers of horticulture in Western Ontario. We are persuaded that the grateful memory of their beloved labors will be long remembered by a happy and contented people.

To-day there is scarcely a locality where nurseries of fruit trees do not abound. Their owners may not possess the enlightened spirit of their pro-

genitors in the horticultural battle, but they have the wisdom to enter into the labors of those who have gone before them, and issue all the old, and many of the recent varieties of trees that are worthy of cultivation.

We long to see the time when our caterers for the public taste will introduce all that is new and adapted for our climate from the different countries of Europe, as well as from the unfailing and rich mine of horticultural treasures from the United States. Russia has furnished us with the *Red Astrachan*, and *Tetofsky*. We are persuaded that in Germany, Switzerland, France and Spain, there are admirable varieties of which we have heard little or nothing. By way of illustration, let me say that during a residence in the south of France, I met with the Jurançon vine, from which the famous Jurançon wine is made. I have never heard of its attempted cultivation on this side of the wafer, though I have tried several times to secure scions.

To-day fruit interests are making wonderful progress in our towns and counties. Fruit Exhibitions, which are held in almost every quarter, have done much to foster and keep alive horticultural interests. Some of our townships' shows put to the blush the more pretentious exhibitions of our growing towns and cities.

Of all the means, however, that are employed to cherish fruit culture, there is no agency so potent as that of the Fruit Growers' Association of Ontario. It is like the watchmen on the border keep—ever ready and on the alert. It has prospered singularly well ever since it began to disseminate well-tested varieties of fruit trees amongst its members. The Association has thus made the whole Province a test garden. Only one condition is attached to such distribution, *i. e.*, an annual report from each member, of the hardihood, prolificness, and adaptation of the plant distributed to the locality in which he resides.

Besides distributing trees of well-known and approved varieties, the Association has more recently begun to issue seedling fruit trees, originated by our Canadian hybridists. The advantages to be derived from this effort in many ways, are so apparent, that it is not necessary to enlarge on the obvious benefits. The Society has also meetings for the discussion of fruits, soil and climate. The winter meeting is largely attended, and not unfrequently we are favored and bettered by the presence and help of fruit growers from various parts of New York State.

An annual Report is also published through the liberality of the government of the province, al-

though the substance of the Report is wholly prepared by the Fruit Growers' Association of Ontario. This publication keeps alive a growing interest in our doings, and has become a mighty engine in the dissemination of a large amount of experimental knowledge, which would otherwise be shut up and dormant in the individual mind, of the members.

Various awards are also held out to deserving workers in the fruit field. Rewards for the production of seedling fruits; premiums for essays on horticultural subjects; diplomas for excellence in the productions of any horticultural department.

In fact, we have been following hard on the heels of the Massachusetts Horticultural Society, the doings of whose membership have been a great stimulus to many of us in our fruit labors.

These, and similar efforts are giving a wonderful interest to fruit growing among our people. The intelligent and important labors of our hybridists are becoming known, and in some cases the fruits of these labors are beginning to appear, either pecuniarily, or from their names becoming known to fame.

Among our prominent hybridists comes first and foremost P. C. Dempsey, of Prince Edward county. His hybridizations in every department are turning out well. It is almost a pity that Mr. P. C. Dempsey's modesty equals his superlative intellectual ability. His self-negation has in the past prevented the triumphs of his genius from being disseminated. Charles Arnold, of Paris, is well known for his fruit and cereal hybridizations. One of his seedling apples will be sent out by the Society next year, and a raspberry and strawberry of his were distributed among the members of the Association this year.

William Saunders, of London, has successfully crossed the Philadelphia Raspberry with the Black-cap, and produced a splendid new fruit. He is known for his hybridizations in flowers as well as in fruits.

W. H. Mills, of Hamilton, has produced some new varieties of grapes, which for flavor, size and excellence, are said to be far ahead of any similar Canadian production.

James Dougall, of Windsor, has brought into notice, seedling cherries, gooseberries, currants, pears, plums, apples, and peaches. As an indefatigable worker, few men deserve more of their country than Mr. James Dougall.

By way of supplement, I may say that fruit interests are backward in New Brunswick, Prince Edward Island, and in parts of Nova Scotia. In New Brunswick the work has almost to be initiated.

Here and there may be seen fruit trees, but little attention has been paid to the cultivation. As a fruit district, Prince Edward Island is a *terra incognita*. A dreary waste exists in Nova Scotia, except in the choice fruit districts in and around Annapolis. I may, however, well leave the historical record of Nova Scotia in the hands of my esteemed friend, C. C. Hamilton, M. D., of Wolfville. He is not unlikely to give an exhaustive account of fruit growing in Western Nova Scotia for the proceedings of the American Pomological Society.*

Much remains to be done for fruit growing throughout our wide Dominion. Manitoba requires to be possessed by the horticulturist. There, fruit-growing is scarcely, if at all, known. British Columbia has to be occupied. Her climate and soil, and the energy of her young, but enterprising people, will yet make the desert to rejoice and blossom as the rose, when Pomona, and the rich gifts she brings in her train, are made to bless these recent, but rapidly developing Provinces.

I have only to add, that the fruit interests of Canada are greatly wrapt up in the development of horticulture in the United States. We, as a people, are singularly facile in copying and following a good example. We have proved ourselves so. We are not ashamed to follow in the wake of such distinguished fruit culturists as compose the membership of the American Pomological Society. There is, however, one man, who, by his unceasing efforts in the cause of the horticulturist, has secured for himself a name, and a fame, which will live while horticulture continues to be an art. To him we desire to make known our obligations. We are satisfied that the recorded transactions of your Society will be the noblest tribute that can be made in the shape of a monument. To us who live on this side of the dividing line, it is only left for us to say, that his fame and name have become household words among us. We can only say, that we, along with yourselves, shall ever cherish and bless the honored president of your Society—Marshall Pinckney Wilder.

ROBERT BURNET,

Vice-President Amer. Pom. Society.

Tennessee.

HUMBOLDT, Tenn., August 1st, 1877.

To the President and Members of the American Pomological Society:

I am called upon to furnish historical sketches of the rise and progress of fruit culture in the State of

*See Dr. Hamilton's paper in Report of 1875. See.

Tennessee. I feel my inability to do so, for several reasons. My venerated father, Peter Transon, was among the "pioneer" fruit growers of West Tennessee, which enables me to speak advisedly of this division of the State, but we have had few organizations in the State which have for their object the advancement of this important branch of business. There has been very little concert of action or coöperation, and but a small number of those who are more or less engaged in fruit culture, attend the meetings of the associations, and a still smaller number attend the meetings of the American Pomological Society.

We should have a *score* or more of delegates representing various portions of our large State, instead of *one*, and be only a sort of self-constituted one at that, from a country so well adapted to successful fruit culture, possessing so many advantages—mountains, hills and level plains, rich soil and favorable climate, and with so many localities in the State where a fruit crop has never been an entire failure. We might well consider our excellent shipping facilities, both by river and railroad; also our central position among the States for furnishing the Northern cities with early and the Southern cities with late fruits. I will endeavor to state briefly what has come under my own observation, and go back to the year 1833, when my father purchased a home near Jackson, Madison County, West Tennessee.

At that day there were but few and small orchards, and they consisted mainly of seedlings. The apple and pear were all the kinds of fruit considered necessary to graft. The *Red June*, *Yellow June*, *Horse* and *Limbertwig* apples; *Bell*, *Pound*, *Sugar* and *Choke* pears were the leading and only varieties propagated. The stone fruits, without exception, were seedlings, and occupied the fence corners, without cultivation.

The soil was fresh and rich and the trees flourished wonderfully and bore abundant crops. An orchard was considered common property, and while fruit lasted all were free to use it. When a "new-comer" got up his cabin and cleared (*i. e.* deadened) a little patch, he went to a neighbor and supplied himself with suckers and seedlings. Now and then he got a "good thing" and every neighborhood had a different name for the same variety of fruit. My father always was a considerable fruit man, and moved from a splendid fruit country—Salem, North Carolina. He brought with him a good selection of all kinds of fruit in cultivation in North Carolina and Virginia, and commenced a nursery, in a small way—the first nursery in West

Tennessee. In a few years other nurseries sprung up, and the supply of fruit trees was equal to the demand.

As the country settled up, fruit became abundant, and some few leading fruit men began to raise fruit for the home market and for the city of Memphis, the principal trading point. I give the names of the leading nurserymen and fruit amateurs of that day: Peter Transon and Mr. Davie, of Madison county; Maj. Bradford & Sons, Daniel Cherry and F. B. Kerr, of Haywood county; Koen & Bledsaw, of Shelby county; Wm. Clement and R. Estes, of Gibson county; John Christie, of Dyer county. This brings us up to the year 1847, when your unworthy servant commenced the nursery business on "his own hook."

Shortly after this we had the first railroads in West Tennessee. A new interest in fruit culture was awakened. Larger and better orchards were planted, but "cotton was king," as a matter of course. Orchards were generally neglected and but little cared for. However, about this time a very important step towards improvement and progress was taken in fruit culture, *viz.*, *testing* the many varieties brought from every quarter, north, south, east and west, to obtain fruits *suited* to our soil and climate. The success which attended this worthy enterprise, with our increased shipping facilities by railroad, were such that in the year 1860, orchards were planted with a view of shipping fruits to more distant markets. A few acres of strawberries were shipped from Jackson to St. Louis and Chicago.

After the close of the war, the first shipments of peaches, apples and pears were made from Humboldt to northern cities. Although we have had heavy drawbacks and many things to hinder since the war, I feel justified in stating that progress has been made in fruit culture. Proper attention, with skill, to the business, has given success. Cotton is no longer "king" in Tennessee. Thousands of acres are now in cultivation in apple, peach, pear, cherry, plum, grape, &c. The berry crop is receiving considerable attention, a lively interest is manifested all over our country, and fruit culture is regarded as a source of considerable profit. The present year has been almost a failure in the peach crop—killed in the bud—which has occurred in West Tennessee but once before in forty years. Over ten thousand crates of strawberries and fifteen thousand boxes of other fruits have been shipped from Humboldt and Gadsden up to this date. It is proper to state also, Milan, Medina and Trenton, in this (Gibson) county, have shipped con-

siderable quantities of fruit. Extensive shipments are made from various counties—Crocket, Shelby, Dyer, Obion, Weakley, Henry, Hardiman, &c.

I may say very few persons in Tennessee have made fruit growing a specialty, and for the reasons above stated progress has been slow; yet thousands of acres more will be in cultivation as soon as skillful labor and capital can be had. What I have said of West Tennessee applies equally to the eastern and middle divisions of Tennessee, as a fruit growing country. But not having at my command the necessary information from other worthy fruit growers, I forbear saying anything. I could now enumerate a score of nurseries in Tennessee, and some of them of considerable dimensions. I may also state, fruit culture in our State is yearly and constantly on the increase, but we think, in order to make *rapid* progress we must have combined effort—fruit growers' associations, &c., before we can make a respectable showing. If we should exhibit our fruits in the Pomological Society, we think they would be at least creditable, if not equal with those of our sister States. I regret exceedingly I cannot give more concise and elaborate sketches and do justice to the fruit growers of our State, as well as to myself. I remain very respectfully and truly,

Your obedient servant,

B. F. TRANSOU.

Utah.

HISTORY OF FRUIT CULTURE IN UTAH.

Until the year A. D. 1847, the region embracing the Territory of Utah was Mexican soil and little known; was a barren, fruitless desert, without a white inhabitant (excepting half a dozen fur-traders) and sparsely peopled by a few tribes or bands of Indians of the lowest type, none of which cultivated the soil, but subsisted upon the seeds of grass and weeds, with rabbits and crickets for a dessert, the country being nearly destitute of anything like fruit or nuts, though in some localities several varieties of berries, as currants, gooseberries, serviceberries, raspberries and a variety of berberries, and pine nuts were found—and in others, roots, more or less nutritious, as the thistle, agave, flag, &c.

In the year named, Brigham Young, with several hundreds of the exiled Mormons, opened a road from Council Bluffs, on the Missouri River, to the valley of the Great Salt Lake, and founded Salt Lake City. Seeds of fruits and vegetables, as well as of grain, came with these emigrants, and each in its season was planted. In 1850 the writer visited Salt Lake and saw the first peaches ever grown

in this Territory, on a two-year-old tree in front of the residence of Brigham Young, and quite a nursery of various fruit trees grown from seed, in the same gentleman's garden. Joel H. Johnson also had a nursery of several thousand apple and peach trees on Mill creek, while numbers of others had succeeded in starting a greater or less number, all prized very highly.

The first apples fruited in Utah were seedlings in the garden of John Nebeker, in Salt Lake City, in about the year 1855, two varieties of which were pronounced worthy of propagation and were widely disseminated, viz., one an oblong, yellow, sweet apple of good size, ripening in September, and called *Pride of the Valley*; the other a large, yellow, fall apple, called *Mountain Chief*—and several very good seedlings were produced from the nursery of J. H. Johnson. In 1852 William C. Staines founded a large garden and nursery and carried on business in a more systematic manner, obtaining from abroad seeds of many kinds of fruit, and in the same year L. S. Hemenway, practical nurseryman, settled in Salt Lake City and laid out nurseries and planted an orchard and garden. In 1857 Mrs. Caroline Jackson sent from California a great variety of fruit scions, which were widely distributed among those who had stocks for grafting or budding. The year before a Mr. Neal had brought from New York, in sealed cans, scions of *Spitzenberg*, *Early Harvest*, *Roxbury Russet* and *Baldwin*. From these a few apples were grown in 1857 or '8. In 1859 Mr. Hemenway imported scions of some forty varieties of apples and some other fruits.

Pear scions were first imported from California in 1855, by Wm. C. Staines, who succeeded with the *Bartlett* and several other varieties. Phineas Young raised the first cherries from seed, which fruited in 1860. In 1857 Mr. Letson came over from California, and entering into partnership with Mr. Staines, proceeded to import grapes, plums, cherries, apricots, peaches, strawberries, &c., and about the same year Thomas Ellerbeck imported many varieties of strawberries, grapes and other plants, and took much care and pains to produce magnificent berries.

In 1858 Edward Whiting brought, in boxes of soil, living plants of several varieties of currants, gooseberries and roses from the East, and these were soon widely disseminated.

In 1860 a gardeners' club was formed in Salt Lake City, which did much in importing desirable varieties of fruit and disseminating the same, examining and naming seedling fruits, instituting fairs, &c. In its list of members and supporters were

L. S. Hemenway, John Nebeker, W. W. Woodruff, Geo. B. Wallace, Thomas Woodbury, Levi Richards, Edward Sayers, W. C. Staines, Mr. Letson, C. Oliphant, J. E. Johnson, and several others deeply interested in advancing the culture of fruit.

As early as 1853 settlements had been commenced as far north as Box Elder County, and south to the Virgin River, and fruit trees and seeds were carried to each settlement and every haste made to produce fruit at the earliest possible period, and very generally it was found that most fruits seemed to be wonderfully adapted to the soil and climate.

The first lying south of Salt Lake county is the county of Utah, with Utah Lake in the center. Around this lake the valley is covered with towns, cities and farms, and here apples, peaches and many other fruits grow in unbounded profusion and of great excellence. Among those who have been pioneers in their introduction and development, I may name John Scott, Daniel Graves, E. Whiting, Wm. Mendenhall, B. F. Johnson, Henry Nebeker, Thomas Day, Abel Butterfield, Samuel Pitchforth, Thomas Callister and James Starley.

Farther south, after passing Utah, Juab and Millard counties, we have Beaver and Iron counties on the summit, not fully adapted to fruit on account of frosts; but passing over the rim of the basin, we have first Kane, then Washington county in the south-west corner of the territory, with climate so mild there is very little or no snow in winter and frosts are light; where the sun almost always shines, and where the almond, fig, pomegranate, and exotic grape flourish; where the peach, apricot, plum, nectarine and pear are unexcelled in size, flavor and abundant growth.

In about 1855 a company from the Southern States founded and settled the town of Washington, planting the seeds of fruits. About four years after, a company from California was added to the colony and commenced to settle at Santa Clara. About this time the old *Mission* grape from California was introduced, together with some other fruits.

In 1862, a hundred families from the North founded and colonized St. George, and brought every variety of fruit growing in the North.

And in this year Walter E. Dodge went with teams to California and brought back several choice varieties of grapes, apples, pears, peaches, figs, almonds and plums; and among the vines, the *Black Hamburg*, which was found to thrive and produce splendid fruit in the open air. In Kane County, Joel H. Johnson and his sons, Sixtus E. and Nephi

Johnson, were foremost in introducing many varieties of fruit.

In 1865 the writer removed from Utah county to St. George, in Washington county, and brought many thousand trees of choicest fruits found in the North, and proceeded to import from the East and California one hundred and fifty varieties of grapes for trial and experiment. A gardeners' club was organized the same year, with one hundred members, with a view of testing thoroughly the capacity of this region for numerous varieties of fruit, all or most of which have succeeded far beyond our expectation.

In the development of fruit in Utah, we have of necessity, at times, been forced to depend upon seedling fruits, and we are able to add to former lists many that are deserving of attention and place, a few of which will be noticed. Among the pioneers of fruit culture in the South deserving mention, may be named John Oakley, W. H. Crawford, C. A. Terry, H. W. Miller, L. S. Hemenway, E. Ellsworth.

The writer has recently imported from California orange and lemon trees, which he feels confident will succeed here in the open air at three or four years old.

NATIVE SEEDLING FRUITS.

APPLES.—*Pride of the Valley* and *Mountain Chief*, already described.

Miller's Cherokee.—Seedling from *Spitzenberg*; large and handsome, red, fine flavored; long keeper.

Orton's Red Winter.—Medium size; firm and heavy; deep red; long keeper; flavor resembling *Spitzenberg*.

Spring Lake.—Medium size; very dark red, with white specks; flesh yellow, and rich sub-acid; constant bearer and long keeper.

Higgins' Red Winter.—Tree vigorous and upright; constant bearer; fruit large, striped with red; juicy; fine, vinous flavor; keeps till summer.

PEAR.—*Redfield*. Native of Salt Lake. Size smaller, and a little later than *Bartlett*, with flavor equal; cheek red next the sun.

PLUMS.—*Sayers' Favorite*, and several others not named, are very fine.

APRICOTS.—The *Gates* and the *Carrington* are large, with fine form and flavor. There are a score unnamed, that are little, if any, behind in value.

PEACHES.—*Carrington*. Large, yellow, rich; a seedling from the *Crawford*.

Orange.—Very large, often from eight to twelve ounces in weight; yellow flesh, with highest flavor;

grown from seed by the writer; and also a large, yellow cling of delicate flesh and flavor, named *Spring Lake*.

Indian Peach.—Both free and clingstone; medium size; reddish flesh; very juicy and delicious.

CHERRIES.—*Utah Hybrid*. A cross between the *Sand* cherry and the wild plum; fruit nearly black; good size; stone small; thin skin; sweet. Tree willowy, with long limbs, and great bearer.

ALMONDS.—We have unnamed seedlings in great variety, from paper shell to hard enough; good bearers, and far better than any we have imported.

GRAPES (from Foreign).—*Rio Virgen*—Vine vigorous; fruit egg-shaped, white and transparent; clusters and berries large, and really the handsomest white grape we ever saw. Its faults are thick skin and shy bearing.

Jarvis.—Very similar to the above, only not quite as handsome, but better bearer and fruit nearer round.

We have several other very fine seedlings from foreign varieties yet unnamed, as well as from American grapes.

Although for years we had few or no enemies to fruit, the codling moth has of late made sad havoc with apples and pears and some other fruits in Salt Lake and other settlements; and the green-fly and spittle-bug are damaging many vineyards.

So far as known, Utah fruits stand as high in market as any on this continent, our dried fruit selling in eastern markets for several cents higher than those from any other region. I am unable to give any correct statistics of our fruit product, though we have exported sometimes, of dried fruit, over one hundred tons a year.

Last year Southern Utah made fifty thousand gallons of wine, and put up several thousand cans of fruit. Utah and Salt Lake counties have made a fair start in this industry, and last season put up probably ten or twenty thousand cans. Our surplus fruits are generally used to supply the many mining camps throughout the Territory.

Very respectfully, J. E. JOHNSON.

Virginia.

In the settlement of Virginia the South of England was largely represented, and her fruits brought hither were of choice selections.

Pears, untampered with by the hand of improvement, are, from some cause, vastly superior to those introduced into the northerly New England States, having less astringency, although it is possible that this difference may be traceable to climatic influence.

There appear to have existed some five or six varieties of native pears that have come down to us and annually found in our market that compare quite favorably with some imported varieties of their season.

The earliest improved varieties known to me in this section, were two varieties ordered from Boston by the late Dr. Wm. Selden, and planted in 1808, one of which was the *St. Germain*, a pear of medium size, fine quality, and keeping till spring. Both of these trees have died within ten years.

The first pear orchard for marketing purposes was planted out in 1856 by Lieutenant Weir, U. S. N., consisting of 4,535 trees, all dwarfs, embracing fourteen varieties, 2,000 of which were *Duchesse d'Angouleme*. About 1,800 of these *Duchesse* are still bearing fruit.

There are now in tidewater Virginia, from 150,000 to 175,000 pear trees under cultivation.

APPLES.—About 1834, Wm. Prince, Esq., of Flushing, Long Island, mentioned twelve varieties of much esteemed native apples of Virginia—among others, the *Summer Cheese*, brought from old Jamestown seventy-five years prior to that date; another, the *Royal Pearmain*, much esteemed by the planters near Richmond for both table and cider. The *Jiles* (a medium size winter apple), a great favorite in tidewater Virginia. Our oldest inhabitants remember seeing very old trees of this variety in their childhood.

PEACHES.—The luscious peach was a fruit of perfection until within twenty-five years, since which time a war has been waged by insects or disease that quite disheartens the cultivator. The native seedlings appear the most healthy.

GRAPES.—The woods point to this section as the home of the grape, the wild grape furnishing wine much esteemed by our people.

Cultivated varieties dating back to over fifty years are receiving increased attention, with the promise of a full supply of wine for home consumption.

BLACKBERRIES.—Nature has planted such a profusion of this variety of fruit, that its introduction in garden culture is superfluous.

STRAWBERRIES.—This fruit presents a most remarkable increase of cultivation, the first patch for marketing purposes having been planted in 1846, which has gradually expanded to over two thousand acres in the vicinity of Norfolk, producing over three million quarts last spring.

Respectfully submitted,

G. F. B. LEIGHTON,
Vice-President Amer. Pom. Society.

Report of the Committee on Foreign Fruits.

To the American Pomological Society:

GENTS: Your Committee respectfully report that, as far as they know, comparatively little interest has been taken, for a few years back, in the introduction of new foreign varieties of fruits, and therefore the material for a report is quite limited.

The following, though not, strictly speaking, new, are but little known and are at least worthy of trial:

CHERRIES.

Montmorency.—*Longue queue*: fruit large: light red; tender, juicy, and high flavored; a delicious sub-acid variety; ripening between the *Early Richmond* and *Montmorency Ordinaire*.

Noir Precoce de Strass.—One of the earliest black cherries; fruit of good size, tender, juicy and sweet; tree hardy and productive.

Bigarreau Rose Dragon.—Fruit large, pale yellow, with a red cheek; flesh firm, juicy and good; ripening after all the good sweet cherries are gone—the finest late sweet variety—middle of July.

PEACHES.

Large Early Mignonne.—Medium to large; roundish oval; pale straw, with crimson cheek; very juicy, melting and sweet; August 16th: one of the very best freestones.

Dagmar.—Fruit large, roundish; pale straw color, nearly covered with deep crimson; very handsome. Flesh white, melting, juicy, sweet and vinous. This we consider one of the finest of Rivers' peaches, as far as fruited in our collection; freestone; last of August.

Early Victoria.—Medium size; pale yellow, with a bright red cheek; rich and juicy; freestone; middle of August.

Pucelle de Maline.—Medium size, roundish oval; creamy white, delicately marked with red; flesh white, tinged with red around the stone; very juicy, vinous and excellent; last of August.

PLUMS.

Rouge hative de Nitka.—Fruit medium to large; bluish purple; juicy, rich and fine; a beautiful dessert plum; last of August.

GEO. ELLWANGER, *Chairman*.

Report on Synonyms.

GLORIA MUNDI, OR JOSEPHINE APPLE.

Mr. Andre Leroy, in his new work, "Dictionnaire de Pomologie," gives a long historical account of the *Gloria Mundi*, or *Josephine* apple, by which he claims that it is of European origin, and states that "it is now sixty years since this enormous fruit was known in our country, to which it nevertheless does not belong, but that Louis Noisette, the nurseryman of

Paris, received it from Comte le Sieur, who imported it from America about the year 1803, with a dozen other varieties of apples, some of which have produced very large fruits. The *Josephine*, or *Gloria Mundi*, was at first called the *Melon*, on account of its size, but some pomologists decided to consecrate it to the memory of the Empress Josephine, who, by her example and encouragement made horticulture attain a more flourishing state." Poiteau, the botanist, says: "It is from North America that M. LeCompt Le Sieur obtained this dozen of new varieties for us, although evidently sorts of European apples, transported to America at the time of the discovery of the New World, and among these varieties three were remarkable for their size, and were named *Josephine*, *Montalivet*, and *Le Sieur*." Mr. Leroy further states that the English, who have possessed it since 1817, seem to be in the right when, after a German version, they rather believe it to have originated in Hanover; and Dr. Robert Hogg, in his new edition of "The Fruit Manual," of 1875, offers this opinion: "This variety is of American origin, but some doubts exist as to where it was first raised, that honor being claimed by several different localities. The general opinion, however, is that it originated in the garden of a Mr. Smith, in the neighborhood of Baltimore, and was brought over to this country by Captain George Hobson, of the ship *Belvidere*, of Baltimore, in 1817. It was introduced from America into France by Comte Le Sieur in 1804, but from the account given in the 'Allegemeines Deutsches Gartenmagazin,' it is doubtful whether it is a native of America; for in the volume of that work for 1805, it is said to have been raised by Herr Künstgarten Maszman, of Hanover. If that account is correct, its existence in America is, in all probability, owing to its having been taken thither by some Hanoverian emigrants."

Mr. Leroy enquires: "Can it be affirmed now that the apple *Josephine*, or *Gloria Mundi*, is really a native of the United States?" No. The Americans do not claim it. Charles Downing, in the second revised edition of Downing's 'Fruits and Fruit Trees of America,' page 191, says that its origin was unknown." These remarks were made at the time because there was so much uncertainty as to its true origin, or any means of ascertaining it, that I thought it best to merely say, "origin unknown"; it should have been, "origin uncertain." Coxé, in his work on Fruit Trees, published in 1817, states that it originated on Long Island, and A. J. Downing, in the first edition of his "Fruits and Fruit Trees," says: "It is a little curious that the origin of this

apple is claimed for Red Hook (on the Hudson), for Long Island, and Baltimore," showing that there was much uncertainty as to the place of its origin, hence I stated in the first and second revised editions of his work, that its origin was unknown. I have since been informed by Mr. John Feast, of Baltimore, one of the oldest horticulturists in the country, that it was raised, soon after the revolutionary war, by Ramsey McHenry, an old Marylander, whose country seat, at that day, is now the residence of Mr. Thomas Winans in the city of Baltimore. That it was first called *McHenry Pippin*, and subsequently received many synonyms, viz., *Pound*, *Belvidere*, *Monstrous Pippin*, *Gloria Mundi*, &c., &c. That about the years 1806 or 1808, it was sent to Great Britain in the ship *Belvedere*, and there named *Belvedere*, *Bullimore*, &c.

Having stated the principal points as to the different localities where the *Gloria Mundi*, or *Josephine* apple is said to have originated, I leave it with the public to decide which is correct.

SUMMER RAMBO, GROSH, WESTERN BEAUTY.

For many years there has been much confusion in regard to the origin, name, &c., of these apples, but according to information lately received from C. P. Grosh, of Marietta, Pa., and from his brother, the Rev. A. P. Grosh, now of Washington, D. C., the *Grosh* apple was raised from seed by their father, John Grosh, long since deceased, about the year 1815, and was planted in the grounds of the late Judge Jacob Grosh, of Marietta, Pa., where the original tree is still standing. Its early or first name was *Big Rambo*, afterward *Grosh* and *Grosh's Mammoth*, but now more generally *Summer Rambo* and *Large Summer Rambo*; also *Western Beauty* in many localities in Ohio and at the west.

It was decided at the Centennial last year, by a few good judges, that *Summer Rambo*, *Grosh* and *Western Beauty* were identical. This apple was also claimed to have been raised by William Cummings, of Harrison, Hamilton County, Ohio, and was called in that section, *Cummings' Rambo*, *Big Rambo*, &c., but it was proved to be the *Grosh*, or *Summer Rambo*. Dr. Warder states that when he was at the Vienna Exposition in 1873, he saw the *Western Beauty* under the name of *Lothringer Rambour*, or *Rambour Lorraine*, of Dr. Ed. Lucas, and turning to his work on Pomology I find he gives no account of its origin, but an outline and a short description, viz.: "a splendid apple; ripe Au-

gust and September; keeps from four to six weeks; adapted for table, market and kitchen use; very large; prolific when in good soil for orchard."

The Rev. A. B. Grosh explains the various conflicting accounts of its origin in this way: At an early day there was much emigration from Lancaster county, Pa., and especially around Marietta, to Central and Southern Ohio. These emigrants carried with them, or afterward obtained trees, scions, &c., and thus the *Grosh* apple might have found its way into Ohio, and as to the German *Lothringer Rambour*, the German immigrants, after residing in this country several years, sent or carried back with them to the Fatherland favorite products of our soil for introduction and trial there, and may not the *Grosh* apple there be thus accounted for as the *Lothringer Rambo*?

There is a distinct *Big Rambo*, which T. S. Humrickhouse, of Coshocton, Ohio, informs me was raised from seed of the common *Rambo*, by Mrs. Robert Ramsey, of Millbrook, Ohio, and was named by Mr. Humrickhouse the *Hoadley*, but the nurserymen and fruit growers in that locality continue to call it *Big Rambo*; the fruit is rather larger and more globular in form, the tree not as vigorous nor as large, and the fruit not as good in quality as the *Grosh*.

The *Summer Rambo* of Cox and Downing, which has for its synonyms, *Rambour d'été* and *Rambour Franc*, is a very old foreign variety; tree a moderate grower, rather spreading, a good, but not prolific bearer; fruit of medium size; flesh quite firm, sprightly sub-acid, and more valuable for culinary uses than for the amateur; ripening in September. There is also a *Rambour d'été*, trees of which I had from André Leroy some years since, and which is quite distinct from any of the above. It agrees with Mr. Leroy's description in his new work on Pomology. Mr. Leroy gives more than a dozen synonyms to this apple, some of which I think are incorrect.

The following are the synonyms to the *Grosh*, or *Summer Rambo*:

Big Rambo, *Grosh's Mammoth*, *Large Rambo*, *Summer Rambo*, *Large Summer Rambo*, *Mammoth Rambo*, *Western Beauty*, *Monstrous Rambo*, *Ohio Beauty* of some, *Musgrave's Cooper*, *Cummings' Rambo*, *Pickaway Rambo*, *French Rambo* of some, *Naylor Rambo*, *Sweet Rambo* (incorrectly), *Lothringer Rambour*, *Rambour Lorraine*.

CHAS. DOWNING.

REPORTS OF STATE FRUIT COMMITTEES.

Report of the General Fruit Committee.

To the American Pomological Society :

Gentlemen—The undersigned, on behalf of the General Fruit Committee, respectfully reports, that on the 12th of April last, and again in the month of June, the following circular was addressed to the several chairmen of the State Fruit Committees:

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 Chicago, September, 1875, you were appointed Chairman of the Fruit Committee of your State. The duties of this committee are defined in the Society's By-Laws as follows:

"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 the general chairman, one month before every biennial meeting, State Pomological Reports, to be condensed by him for publication."

It is customary for the Chairman of the State Fruit Committee to select his associates, and you are 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, 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 Baltimore, on September 12th, 13th and 14th, 1877.

The nature of the information desired may be briefly stated as follows:

1st.—SPECIES OF FRUIT. What SPECIES of fruit, as Apple, Pear, Peach, Plum, Cherry, &c., &c., are grown successfully in your State?

2d.—VARIETIES OF FRUITS. What varieties of these fruits have been found, by experience, best adapted to the soil and climate of your State and its various parts? The degrees of merit should be stated according to the scale adopted in the Society's Catalogue, viz: Those worthy of cultivation designated by one *. Those of great superiority and value by **. Those of more recent introduction and giving promise of excellence †. In this connection you will please examine the lists of varieties, if any, recommended in the Society's Catalogue, for your State, and

suggest such changes or additions as may, in your judgment, be necessary.

3d.—NEW NATIVE VARIETIES. If there are any new varieties of recent origin in your State, giving promise of excellence, you will please make a special note of them.

4th.—SYNONYMS. Give as much information as may be in your power in regard to the different names by which the same fruit is known in your State.

5th.—OBSTACLES TO SUCCESSFUL CULTURE. What are the chief obstacles to successful fruit culture in your State, as regards soil, climate, insects, diseases, &c., and what remedies have been mostly effectually employed?

6th.—CULTURE AND PRUNING. What treatment of the soil of fruit tree plantations, and what system of pruning, have yielded, in general, the best results?

7th.—STORING AND KEEPING WINTER FRUITS. What methods are most successfully practiced?

8th.—PACKAGES. What sort of package has been found most advantageous, especially for shipment to distant markets?

9th.—STATISTICS. If convenient, statistics showing the extent and progress of fruit culture in your State.

The Committee desire to make these State Reports as perfect an exhibit of the condition of fruit culture as may be possible, and by their aid, continue the work of perfecting the Society's Catalogue. Your active co-operation is respectfully solicited.

It is hoped that the fruits of your State will be well represented at Baltimore.

Truly yours,

P. BARRY,

Chairman General Fruit Committee.

Rochester, N. Y., April 12, 1877.

In due time responses were received from nearly all, promising reports from their respective states.

Information was received that Dr. D. H. Jacques, chairman of the Fruit Committee of South Carolina, had removed from the State, and through the kindness of Mr. Berekmans, of Georgia, the services of the Hon. R. M. Sims were secured, and he has prepared and forwarded an excellent report from that State.

The chairman for Kentucky, Mr. Z. R. Huggins, had died, and his son, Mr. W. A. Huggins, who succeeds his father in business, promised a report from that State.

The chairman for Rhode Island was erroneously printed Browne instead of Bourn, and consequently the circulars did not reach him; the error was discovered through correspondence with Mr. Silas Moore, of Providence, and the report for that State was duly made. Reports have been received from twenty-five states and territories, and are presented herewith. The greater number of those

states not reporting at this time, have made full reports at previous meetings. In these reports will be found information of great value and interest, and the gentlemen through whose labors they have been made deserve the thanks of the members of this Society for the services they have rendered to American Pomology. The labor involved in collecting material for a state report can be appreciated only by those who have performed it.

Respectfully submitted,

P. BARRY,

Chairman.

Report from Nova Scotia.

YARMOUTH, Nova Scotia, Nov. 9, 1877.

P. BARRY, Esq.: Dear Sir—In the last volume of the American Pomological Society, the valuable report by Dr. C. C. Hamilton on Fruit Culture in Nova Scotia, removed the reproach to which we were amenable from the hitherto silent columns of your volume. In starring for the tabular columns there were a few omissions; in apples, *Clyde Beauty*, *Colvert*, *Golden Sweet*, *Mother*, *Primate* and *St. Lawrence* should be added; in Pears, I have found *Bourre Die* one of the best, and in Plums, *Imperial Gage*.

In this country, during the last four years, we have made very creditable progress in fruit culture. At a provincial exhibition at Rentville, N. S., October 15, a collection of Apples was shown from this county consisting of thirty varieties, selected from forty of standard kinds, or seedlings of the county worthy of cultivation, all of fair size, color and quality, and although inferior to the larger and finer apples of our fruit counties proper, the collection was most encouraging to those laboring under similar disadvantages as ourselves, a cold, wet soil, low temperature, abundant moisture and absence of sunshine.

We have many kinds on trial, of those included in your catalogue, some of which may prove, when fruited, of value for us; of these, *Stark* is one of the most promising, if one may judge from its annual growth, which is prodigious. *Suzette Pomme Grise* ought to be on your list; it is one of the most delicious of dessert apples, very popular in Ontario, where the Fruit Growers' Association has distributed this variety as one of the most desirable; the tree appears to be perfectly hardy, and a vigorous grower.

In small fruits, especially in Strawberries, our cool, moist soil and climate, with frequent fogs and showers, while they retard the ripening of the crop, favor its highest development. Our season begins with the first week in July, and lasts through the month. The variety chiefly grown is *Wilson's Albany*, which no other approaches in vigor of growth, or in productiveness; it is not unusual to see single plants surrounded with from one to two quarts of berries, the largest of which will measure from four to six inches in circumference; the fruit, if somewhat acid at first, has the redeeming quality of drying and becoming firmer and sweeter with more sun, while most varieties, when fully ripe, begin at once to soften and decay.

Jacunda also does remarkably well under good cultivation, in deep, rich soil. I have had it as a perpetual bearer, in fruit every day from July to November, by simply removing the blossoms from potted plants in May, giving a rich top dressing and plenty of water. A friend has

Jacunda plants, set out in 1868, still bearing so well that they are to be wintered once more. These happened to be planted on made ground five or six feet deep, and are annually surrounded with tiers of berries of immense size.

Col. Cheney is a vigorous grower, very prolific, and fairly productive, but the fruit, although somewhat less acid than the *Wilson*, lacks firmness and soon rots when thoroughly ripe.

Triumph de Gand succeeds fairly, but like most of the later varieties, has been abandoned as not productive.

Being on the seacoast, where eel-grass is easily procured, we use that material as a mulching and for covering in winter, of late years, in preference to any other. It prevents weeds, keeps the fruit clean and is a perfect non-conductor.

Having kept the same piece of ground in strawberries for many years, trenching and renewing with young plants from time to time, the soil is filled with seeds from which thousands of seedlings start every year. I kept a single one of these several years ago until it fruited, and was rewarded with a variety hardy, prolific, and in quality equal to *Leauig's White*, in size and appearance much like *Brooklyn Scarlet*; I have given it a family name, "*Mary Fletcher*." It is not productive enough for a market berry, but for the amateur, I do not know its equal. I should be pleased to send a few plants, in the spring, to any applicant who would like to try it. Success with this suggests the trial of others, of which I shall have some thirty or forty in fruit next season, selected with regard to promise from foliage, vigor of growth, &c. &c., and it may be that the strawberry of the future will come from "away down East." The time is not far distant when the finest strawberries in the Boston market will be sent from this county; we wait only more rapid and more frequent steam communication.

In strawberries, give one star to *Boston Pine*, *Charles Downing*, *Col. Cheney*, *Hovey's Sculling*, *Russell's Prolific*, *Sith Boyden* and *Triumph de Gand*, and two stars to *Jacunda* and *Wilson's Albany*.

Within the last two years only, we have had an invasion of the currant worm, destroying the foliage on currant and gooseberry bushes. The growing of these fruits now involves watchfulness, and two or three applications of hellebore during the season.

All varieties of currants and gooseberries succeed well, seldom mildewing. I find among the best of the English Gooseberries, *Green Walnut* and *Yellow Amber*, the fruit of the latter, when fully ripe, being far ahead of any other in quality, very sweet and tender, with thin skin, and well described by the name, being as transparent as and of the color of amber. It must have been the Yellow Amber which the woman was selling when old Lord Balmerino, on his way from Westminster Hall under sentence of death, begged the driver to "stop a minute, and gie me a ha'porth of honey blobs."

Both raspberries and blackberries are so abundantly and cheaply supplied in the market from the adjacent county settlements, where newly cleared land gives these fruits their natural habitat, that only in a few gardens are any grown for home use. While Raspberries here succeed well both in size and quality, Blackberries fail to mature to perfection on the coast.

We have had no hard frost to this date; dahlias and other tender flowers in good bloom up to 26th October, and monthly roses all right yet; garden work going on now, planting bulbs, &c., &c. Open weather and absence of frost sometimes continues to the close of the year.

Select from the preceding; condense or abbreviate at your pleasure; there may be no points worth the labor and trouble of printing, and if the few varieties named, be added to the tabular columns, my object will be attained.

Very truly yours,

CHARLES E. BROWN.

Report from Maine.

The undersigned, in behalf of the Fruit Committee for the State of Maine, herewith presents, in tabular form (see catalogue), a revised list for insertion in the General Catalogue, of the several fruits recommended for cultivation in this State. This list is based upon, though not strictly confined to, the Fruit Lists of the Maine State Pomological Society.

This Society, since its organization in 1873, has been engaged, among other things, in an attempt to prepare a complete and reliable list of fruits to be recommended for cultivation in the State. These lists have been examined and carefully revised at each winter meeting of the Society, and they now very well represent the concurrent judgment of our best cultivators.

In respect to apples the State is divided into three parts, designated as the Northern, Central and Southern Divisions, and the extent to which a variety is recommended in either Division is indicated in separate columns. The list embraces those varieties which are designated in the report herewith presented, together with several others not named in the catalogue of the American Society. Among the latter are several native varieties of great excellence, viz.: *Briggs' Auburn*, *Dean*, *Franklin Sweet*, *King Seedling*, *Roltz* (described in Downing's Fruits and Fruit Trees of America, Second Revised Edition, page 262, under the name of *Macomber*), *Starkey* and *Winthrop Greening*. Most of these have heretofore been presented to the American Society, and are described in the fruit books, as well as in our published reports.

Other varieties without number have been introduced by traveling agents and peddlers, without any knowledge on the part of buyer or seller as to their adaptability to our soil and climate, some of which have done reasonably well while many of them have failed entirely. At the present time large numbers of nursery trees are being grown in the State, and our most intelligent planters purchase them in preference to those grown abroad, but we pity the uninformed masses who every year buy indiscriminately of whatever is urged upon them by the equally ignorant, mendicant, peddling tramps.

At the last winter meeting of the Society, a list of apples to be recommended for amateurs was adopted, as follows: *Early Harvest*, *King Seedling* (local), *Primate*, *American Summer Pearmain*, *Porter*, *Gravenstein*, *Winthrop Greening*, *Pomme Royale*, syn. *Dyer*, *Dean* (local), *Starkey* (local), *Jacott's Fine Red*, *Mother*, *Hoyt Sweet*, *Canada Red*, *Hubbardston Nonsuch*, *Peck's Pleasant*, *Tulman's Sweet* and *Northern Spy*. These varieties were selected with a view to afford a succession of fruit for all domestic purposes

during the longest period, and of the best quality, and it was supposed that in the hands of amateurs they would receive such cultivation as would render all of them profitable and satisfactory. Many of the same varieties are also recommended, as will be seen, for general cultivation.

The production of apples in the State was last year much below the average and will be even less this year, owing to the decay of many old orchards and the recent extensive ravages of caterpillars. New orchards are being planted largely and well cared for, and we confidently expect that our apple crop will ere long resume its former importance.

Of pears, our list embraces twenty-six varieties, all of which, with many others that might be named, succeed well in a large portion of the State. Many cultivators have forty or more varieties, but we have not deemed it advisable to increase our recommended list. The *Flemish Beauty*, though still doing well in many places, has failed so generally that we have dropped it from the list. The *Eastern Belle*, one of several seedlings produced by Mr. Henry McLaughlin, of Bangor, and described in "Downing's Selected Fruits," page 507, is a pear of great excellence.

Plums, formerly cultivated largely and with great profit, are latterly somewhat neglected, owing to the serious and increasing obstacles to their success.

Native grapes are grown in great variety, rather for home use than for market; and, excepting the later ripening varieties, succeed well over a large portion of the State. No class has given more general satisfaction than Rogers' Hybrids.

Foreign grapes are grown exclusively under glass, in our cities and larger towns.

The small fruits grow, both wild and in cultivation, in great profusion and excellence. A few varieties are named in our lists as being especially desirable, while many others succeed equally well.

In respect to fruit growing generally, our attention is now mainly directed to thorough cultivation. We have varieties of fruits more than sufficient in number, and intrinsically good enough in quality for our present purposes. Our most urgent need is not the production of native seedling fruits or the introduction of new varieties from abroad, but the *thorough high cultivation* of what we have, with a judicious selection of our best varieties for that purpose.

HENRY McLAUGHLIN,

Bangor, August 20, 1877.

For the Committee.

Report from New Hampshire.

P. BARRY, *Chairman General Fruit Committee:*

In this report, which I respectfully submit, I do not deem it necessary to make out an extended list of fruits for New Hampshire, which have heretofore been given in and upon which judgment has already been passed. I will only add a few remarks in regard to defects in some varieties usually considered valuable, and excellencies in others not so well known, but which promise well.

APPLES.

The *Baldwin*, in this section of the country (Central and Southern New Hampshire), has stood and still stands pre-eminent as a market fruit. Whatever profit has been

received from raising apples is mainly due to this variety, and that, more from grafting the tops of well grown trees than from planting young ones from the nursery. Young trees are apt to be a little tender; older ones, grafted in the top after a series of years of excessive bearing, decay. For these reasons, we very much need a winter variety, hardier in tree, to take its place. I was in hopes the *King of Tompkins County* would supply this want. For the last two years I have observed that many of these apples had hard bunches in them, and many were water-cored, rendering them, in flavor, worthless.

Jewett's Fine Red, better known under the name of "*Nod-head*," is very hardy and healthy in tree, enormously productive, and of a crisp and fine flavor. Its only fault is, the fruit is apt to be knotty. It is very salable, and always commands a higher price than the *Baldwin*. Many people forty miles north of me speak highly of the *Blue Pearmain*—fruit good, tree hardy.

Greenings and Russets of all kinds are unprofitable, except in some extreme cases.

Northern Spy.—Very fine in, now and then, a favorable situation; generally not worth cultivating.

Wagner.—I have raised and sold some trees of this variety that have given excellent satisfaction. I have part of a tree grafted with it, that bore finely last year. The apples keep as well, or even better than the *Baldwin*. I would strongly advise all who are planting new orchards or have trees they wish to re-graft with winter fruit to make trial of this.

Mother Apple.—Perfectly splendid with me; large size; magnificent in appearance, and of the finest flavor; ranks in Massachusetts as a fall apple, but keeps here, in a cool cellar, about all winter. I have had them good the last of February.

The *Milding*, of which I spoke in the Society's meeting in Boston four years ago, continues to do well. I sold them in Portland, Maine, last winter, for \$2.75 per barrel, when *Baldwins* would hardly bring \$2.00.

Foundling and *Benoni*, two very fine September apples, I sold in the same place, for \$3.00 and \$3.50, when the market was loaded down with *Porters*, from the west, at \$1.50 to \$2.00. One barrel extra *Porters* brought \$3.50. My dealer in Portland wrote me it was the finest barrel of *Porters* in the market for the season. My *Williams* he sold for \$3.75. I ought not to burden my report with these personal money details. I mention them as an encouragement to our fruit growers in this section, and hope you will pardon me.

For a market fruit, I have nothing of its season like the *Williams*. In moist, rich soil, with a little top-dressing, they bear every year. I have now, August 20, five times as many *Williams* on a half dozen trees as I have of other kinds, ripening from August 20 to September 20, on twenty trees, this being a very scarce year for apples. Raised here, they go into market as those raised in Massachusetts go out. Being a dark red apple, they bear carriage well, while the utmost care must be used in handling *Porters* and *Primate*. I regret that I did not set a hundred *Williams* trees twenty years ago.

PEARS.

I would not advance the opinion that pears *cannot* be made a profitable market fruit here, but I doubt much if they ever *will*, except in very rare instances. And yet, I

would urge every owner of even a small plot, to make the trial of a few trees. I have no doubt they may be raised for home use, affording one of the greatest luxuries.

Doyenné d'Été.—Would advise planting a tree or two for its earliness.

Rostitzer.—Worthy of all praise.

Clapp's Favorite.—Many trees recently planted; few yet in bearing; promises to be of the highest excellence.

Flemish Beauty.—Generally discarded south of me, but around here and farther north, though occasionally cracking, has been cultivated with more success than any other pear.

Beurre d'Amant.—Valuable here.

Paradis d'Automne.—One of the best.

Beurre Giffard.—Tree tender with me; highly spoken of by several cultivators.

Lawrence.—Best winter pear.

Beurre d'Anjou.—Little known here; has not done well with me. I am trying to give it better cultivation, and see what it will do.

Plums and Cherries have generally failed. I doubt if they are worth cultivating.

Of Grapes, Mr. Hayes, in his letter hereto appended, has said all I deem necessary.

The letter of Mr. Hayes, just alluded to, I think very excellent. It is so much better than anything I can offer, I send it entire, hoping it may be found worthy of being appended to this report and published over his own signature. He lives in Dover, Stafford county, thirty miles south of me, right in the midst of a fruit growing region, is an enthusiast in fruit culture, has given it much attention, and has had excellent opportunities for observation.

I have also received a letter from Hon. Chas. Doe, Chief-Justice of our Supreme Court. In addition to the highest legal attainments, he has given much attention to the cultivation of fruit. His opinions are worthy of all confidence. He lives at Salmon Falls, near Dover. Below I give his letter in his own words.

JUDGE DOE'S LETTER.

APPLES.

"The *Mother* apple with me is perfectly superb in fruit, but the tree is not vigorous. It bears only the even year, and seems to bear itself to death. The grafts in old trees are vigorous till they begin to bear, then they grow no more and the tree seems to die of exhaustion." [I think the Judge's soil is light. Several of my trees have borne every year. One tree grafted fifteen years or more, is now as healthy as many other kinds.—J. C.] "It is the finest apple I raise, except, perhaps, the *White Skin-no-Further*, which is not fit for general, profitable cultivation. The apple from Farmington called the *Milding*, which you have, has a greasy skin and decays." [Put them in boxes made of slats, open all around, and there will be no trouble.—J. C.] "It is excellent fruit, and much the best tree of any I raise. Its growth is wonderful, but the fault of rotting is a serious defect in the fruit.

"The *Jonathan* is very fine and a good keeper. The *Garden Royal* is splendid—by many esteemed the best; but the tree is not stout, and its limbs are slender." [In my soil not as good as *Benoni*, which is very healthy and vigorous in tree.—J. C.] "Our people ought to raise

more *Fameuse* and *Red Canada*." [The last in sandy, gravelly soils, is splendid; in my soil, worthless.—J. C.]

“ PEARS.

“ *Doyenné d'Été*.—Not worth raising.

“ *Beurre Giffard*.—The earliest good pear; fine, both in fruit and tree.

“ *Osband's Summer*.—Worthless; no juice, no flavor.

“ *Tyson*.—Very best.

“ *Rostiezer*.—Very good, both in fruit and tree.

“ *Clapp's Favorite*.—Grows better and better; fruit good enough and tree perfect.

“The only pears I can recommend are, *Beurre Giffard*, *Rostiezer*, *Tyson*, and *Clapp's Favorite*. I have had good success with *Beurre Hardy*, *Beurre Superfin*, *Belle Lucrative*, *Howell*, *Paradis d'Automne*, *Sheldon* and *Laurance*. Have extraordinary success with *Paradis d'Automne*. The *Merriam* is not of first quality, but is of a rich yellow russetty color; splendid tree, and can be raised in large quantities, the same in tree of *Onondaga*.

“I am not sure about *Beurre d'Anjou*, but am inclined to think that, with good cultivation in warm soil, it can be raised of the highest quality.

“ RASPBERRIES.

“Have succeeded with *Clarke* and a purple, autumn-bearing kind, which I think is *Belle de Fontenay*.

“ Yours, CHAS. DOE.”

MR. HAYES' LETTER.

“Mr. Copp: You wish for some information from me in regard to fruit culture in New Hampshire, and also that I should aid you somewhat in your report to the American Pomological Society. I have continued for the past two years” [Mr. H. gave me valuable assistance two years ago.—J. C.], “the cultivation of apples, pears and grapes, have made some examination of varieties in orchards in this vicinity, which I did not cultivate, and have fruited some in my own orchard which I had not before. The soil where I reside is a clay loam, well adapted to pears, and in my orchard of eighty trees there are but eight the present season, which have not grown shoots one foot long. My soil is not so well adapted to apples or grapes, as to pears; but with these I have been moderately successful. In regard to the *Mother* apple, I am not acquainted with it. The *Wagner* I ate for the first time last season, and I consider the flavor excellent; but the tree comes into bearing so young and bears so constantly, the tree becomes stunted, and I should say unprofitable. The *King of Tompkins County*, I fear will prove a failure here. I have not fruited it, but a neighbor has a tree which blooms every year but fails to bear any fruit; and this seems to be the general verdict around here. The *Hubbardston Nonsuch* has not given the satisfaction it did formerly. It will not pass for a good winter apple, as it loses its flavor early, and the tree is rather tender. I have fruited for a year or so, a late fall apple, called the *Wino*, which promises well, and is pronounced by all who have tested it, as of first quality, and it comes at a season when there are but few good apples. As a list of apples for New Hampshire, I should place for

SUMMER:

Early Harvest, *Williams*, *Red Astrachan*.

AUTUMN:

Sweet Bough, *Porter* and *Wine*.

WINTER:

Baldwin, *Rhode Island Greening* and *Old Nonsuch* (*Red Canada*).

PEARS.

“*Clapp's Favorite* still sustains its reputation for hardiness of tree and large size, and fine flavored fruit. A new variety in this vicinity, and one which bears fine fruit every year, with hardy tree, is a new French variety, the *De Tongres*, worthy of further trial. The *Flemish Beauty* is being discarded by most cultivators, although with reluctance, for the tree is very hardy, but the fruit is so liable to crack that this pear must be given up. A list of varieties which I should recommend for New Hampshire would be: for

SUMMER:

Braudyvine, *Rostiezer* and *Clapp's Favorite*.

AUTUMN:

Buffum, *Louise Bonne of Jersey*, *De Tongres*, *Sheldon*, *Duchess*.

WINTER:

Lawrence and *Winter Nelis*.

“I have left the *Bartlett* out from the list, for the reason that cultivators here find the tree almost as tender as the peach. Of

GRAPES,

the newer varieties, such as the *Iowa*, *Eumelan*, *Croton*, all of *Rogers' Hybrids*, the *Arnold's Hybrids*, are all more or less subject to mildew; and I think it can be laid down as a rule, here in New Hampshire, that the Hybrid grapes, or those that have foreign blood in them, are more subject to disease, and do not succeed as well as native American varieties.

“The *Delaware* is still good, although it is liable to overbear, taking a number of years to regain its strength.

“The *Hartford Prolific* is a hardy grape, but the fruit drops badly.

“The *Credling* is an excellent grape with a loose bunch.

“Of the new varieties, I am testing the *Warden's Seedling*, which appears similar in vine to the *Concord*, but said to be ten days earlier. The *Concord* still stands at the head, and I should arrange the list for New Hampshire as follows: *Concord*, *Delaware*, *Hartford Prolific*, *Credling*, *Warden's Seedling*, and perhaps *Clinton*.

“And now, in closing this very imperfect report, I think it should be urged upon the fruit growers of the north to cultivate more thoroughly. Any farmer who should attempt to raise a crop of corn or potatoes on grass land, without plowing and harrowing, would be considered insane; and yet many attempt fruit culture by setting trees in grass and giving them no care; and of course, planted in this manner, they soon die. Thousands of dollars have been wasted in this way, and fruit culture condemned as an unprofitable pursuit.

“Dover, Strafford Co., N. H. JAMES M. HAYES.”

FROM THE CONCORD HORTICULTURAL SOCIETY.

CONCORD, New Hampshire, August 17, 1877.

Mr. Copp:—Dear Sir: Your letter of July 31 was handed me by Mr. Humphrey, of the Board of Agriculture. In

reply, I will say that our committee, with their experience here, have recommended the following list. We do not expect that this will embrace all worthy of cultivation, but that it will give fruit at all seasons and both for table and market; and also those which can be cultivated by the mass of our farmers and fruit growers with success. We have no doubt that this list can be changed for the better, and should like much to hear *your* opinion in the matter, and to see what you would deduct and what additions you would make.

Hoping to hear from you in the matter, I remain

Yours respectfully,

A. T. SANGER,
For Committee.

APPLES.

Williams, Red Astrachan, Porter, Chautauo Strawberry, Maiden's Blush, Graevenstein, Benoni, Hubbardston Nonsuch, Jewett's Fine Red, Newtown Spitzenberg, Duchess of Oldenburgh, Rhode Island Greening, Faneuse, Baldwin, Red Canada, Northern Spy, Esopus Spitzenberg, Roxbury Russet, Large Yellow Bough, Ladies' Sweet.

PEARS.

Beurre Giffard, Tyson, Dearborn's Seedling, Louise Bonne de Jersey, Clapp's Favorite, Bartlett, Seckel, Flemish Beauty, Howell, Belle Lucrative, Beurre Bosc, Duchesse d'Angoulême, Sheldon, Beurre d'Anjou, Lawrence.

QUINCE.

Orange.

GRAPES.

Concord, Worden, Agawan, Merrimac, Salem, Wilder, Delaware, Crotan, Allen's Hybrid.

Last year the apple crop was extremely large; this year, one of the smallest I have ever known. These extremes have prevailed more or less since I have been in the way of observing such matters—an abundance the even, a scarcity the odd, years. It would be a great object gained if this excess and scarcity could in some measure be equalized, if no more than to have a moderate supply in years of scarcity. Good cultivation will do a good deal, but not all. I know of many who, last year, had more apples than they knew what to do with. This year they have scarcely any to use.

At the risk of a little seeming egotism, I would say, I have not failed of a medium crop of apples, especially summer and early autumn, for many years. I have many varieties of apples for one living in this part of the country. This came about, in part, as a result of my nursery business, years ago. I sent to various parts of the country for scions of noted kinds that were called for, and usually grafted one tree, to remain for my own use as a test. It may be that, among many kinds, some may happen to bear the scarce year.

I have never used the same land a second time for nursery purposes. As land here is not very valuable, the old nursery has not been cleaned out; many trees, unsalable from some cause, have remained, grown up and come into bearing from year to year. Every season I have planted out a tree or two at least. Scarcely a spring has passed that I have not grafted over some one or more trees, that I thought I could make more valuable. I would submit for consideration, whether this yearly planting and grafting trees does not tend more to the production of apples in

years of general scarcity, than the planting of many kinds.

I am more and more inclining to the opinion that here, in this part of the country, every person intending to plant an orchard, had better raise his own trees. A few rows of young seedling apple trees can be raised as easily as beets or carrots, or with little more trouble than corn or potatoes. These may be budded, or planted out as they are. I would strongly urge a continued, persistent raising and setting out of native trees, that there may always be enough growing to make up for those that die, and to furnish well grown, healthy trees on which to graft desirable varieties that are found by experience adapted to one's own soil and locality.

I do not recollect a season, for twenty years past, that I could not furnish a dish of good apples at any time from early in August to December. Notwithstanding I have been continually urging upon my neighbors and acquaintances, far and near, the importance of raising a few varieties of early apples, there are but few people as yet around here who have this healthful luxury sufficient for their own families. I have sold for the last month, every day or two, apples to farmers who have just as good facilities for raising them as I have. It seems so strange to me. I often wonder why it is not done. A very small part of the time and money spent in unprofitable, often objectionable or degrading amusements, and around places of idle resort, will give every owner of even an acre or two, all the fruit needed for domestic use. One who has been indifferent to such things all his life will be astonished at *himself* for the interest he will feel in a few fruit trees, or even flowers, when once planted and beginning to flourish under his care. He will become fond of them before he knows it, and will often go to look at them and see how they are getting on. A silent influence will be exerted, without his being aware of it, refining his feelings and elevating his character. I cannot well conceive how a person that is fond of the cultivation of fruits and flowers, and devotes a portion of his leisure to this, can possibly be a bad man. England's immortal bard has said,

“The man that hath no music in himself,
Nor is not moved with concord of sweet sounds,
Is fit for treasons, stratagems and spoils;
The motions of his soul are dark as Erebus;
Let no such man be trusted.”

If the influence of music is thus ennobling, how much more so ought to be the influence of agricultural and horticultural pursuits on those who live in the quiet country, surrounded by green fields, shady orchards and beautiful gardens, amid so much to please the taste and delight the eye, and where the air is filled with the perfume of flowers and the melody of birds!

Respectfully submitted,

JOHN COPP.

Report from Massachusetts.

In accordance with the requirements of the constitution the following brief report is presented. The observations therein recorded were, to a great extent, made on fruits shown at the exhibitions of the Massachusetts Horticultural Society, through the last two years:

The seasons of 1876 and 1877 were generally favorable to the fruits of different kinds. The apple crop was short in 1877, as was to be expected, and cherries were not as

abundant as in some seasons. The pear, the favorite fruit in this State, has been as abundant and of as fine quality as usual. The same standard varieties as were mentioned in previous reports, have continued most prominent. To avoid repetition of what has been previously said, reference may be had to those reports, and we shall here confine ourselves to the newer varieties.

STRAWBERRIES.

The seedlings of Mr. John B. Moore, referred to in our last report, are being disseminated, and continue to give promise of value. Another of his seedlings has been named this year, the *Henry Davis*. The fruit is very large, and the quality very good to best. Mr. Morse states that the plant is hardy and prolific, and thinks it the most valuable of all his seedlings. Some new varieties originated in other parts of the country have been shown, but do not, at present, give promise of value here. The *President Wilder* maintains its character, and after several years' trial has, in consideration of its size, beauty and fine quality, received the prize of fifty dollars offered by the Massachusetts Horticultural Society, for the best seedling.

CHERRIES.

Among the seedlings mentioned in our last two reports, as having a general resemblance to the *Dornier*, the *Norfolk*, from Warren Fenno, gives promise of becoming a valuable acquisition. It has not yet been disseminated.

RASPBERRIES, ETC.

Of the newer kinds the *Saunders* and *Herstin* have continued excellent, and give promise of becoming valuable standard varieties.

The crops of currants, gooseberries and blackberries have been abundant and of fine quality, but we have nothing new or of special interest to report concerning them.

PEACHES.

More specimens of the *Foster* peach were shown in 1877 than of any other variety. It differs but very slightly from *Crawford's Early*. Other seedlings have been shown by various persons, but nothing distinct or noteworthy.

APPLES.

The crop of apples in the "even" year 1876 was remarkably excellent, and that of the last "odd" year was, as usual, inferior in quantity and quality. Very fine specimens of *Large Yellow Bough*, *Williams*, *Greenstein*, *Garden Royal*, *Hallowston Nonsuch*, and other standard varieties, have been shown, but no new varieties worthy of notice beyond those mentioned in former reports have been presented.

PEARS

have, as usual here, been much more certain than apples, or indeed any other of our tree fruits. *Clapp's Favorite* has been as abundant and fine as ever, nineteen dishes being shown at the exhibition of August 18, 1877. No other variety of the same season approaches this in size or beauty, and consequently none can compete with it as a market pear. In 1876 the specimens of *Beurré Bose* and *Beurré d'Anjou* showed a marked superiority over those of any previous year. The last year the *Bartlett*, *Duchesse d'Angoulême*, *Winter Nellis*, *Doyenne du Comice*, *Beurré d'Anjou* and *Souvenir du Congrès*, were surpassingly fine. The specimens of the last named variety were the finest we have ever seen,

twelve fruits shown at the annual exhibition of the Massachusetts Horticultural Society weighing twelve and a half pounds, and the largest measuring seven inches in length. In quality it will rank as very good, and the tree is a most vigorous grower.

At the annual exhibition, twenty-eight dishes of *Bartletts* were shown, those receiving the prizes weighing 9 lbs. 3½ oz.; 9 lbs. 2 oz.; 9 lbs. ½ oz. and 8 lbs. 15½ oz. At the exhibition on the 6th of October, twenty-six dishes of *Duchesse d'Angoulême* were shown, the prize dishes weighing 13 lbs. 5½ oz.; 13 lbs. 4¼ oz. and 13 lbs. 4 oz. Several other dishes were nearly as large. That superb pear, the *Doyenne du Comice*, grows in favor yearly; it is of the largest size and finest quality. The largest twelve specimens of *Winter Nellis* were shown on the 10th of November, and weighed seven and one-half pounds, surpassing any we have seen from California—indeed, we know of no record of so large specimens being produced anywhere.

The *Emile d'Hayst*, a Belgian variety, of large size, handsome, and best quality, though introduced here some years since, has received far less attention than it deserves. The *Docteur Lantier*, also of Belgian origin, has been presented this year by Marshall P. Wilder, and pronounced of the finest quality. It is large, obovate pyriform, somewhat irregular; pale greenish yellow, with dots and splashes of thin russet; flesh white, fine grained, very juicy, sprightly, and very sweet, with a pleasant aroma, and sometimes a little astringency. Both this and the *Emile d'Hayst* are autumn pears.

The Messrs. Clapp have continued to exhibit their seedling pears. The No. 22, of which we have spoken so highly in former reports, has received the name of *Fredrick Clapp*. It continues to maintain its high character. The same gentlemen have exhibited several other seedlings of merit, as have also other cultivators, but we do not think it necessary to speak more fully of them now. The seedlings raised and disseminated some years since by the late Dr. Shurtleff, are now coming into bearing, and the *Admiral Farragut* and *President* have been shown the past season, and are of generous size and in quality will rank as very good.

The pear tree blight has been more prevalent in several localities around Boston for the last two years than ever before, and we are as much in the dark as to the cause and remedy as are others; but we trust that, like former visitations of this malady, it will prove only temporary. In some instances the apple has been affected in the same manner.

GRAPES.

The *Moore's Early*, mentioned in our last two reports, has grown in estimation as an early grape. Through the courtesy of Mr. John B. Moore, the originator, the writer had an opportunity, in company with the members of the Fruit Committee of the Massachusetts Horticultural Society, to examine the fruit on several hundred vines in his vineyard at Concord. They were found bearing abundant crops of fruit which was then (September 4th) fully ripe, while the *Hartfords* and *Concords*, growing beside them, apparently wanted two or three weeks of ripening. The bunch is large and handsome; berry larger than the *Concord*, and fully equal in quality. It will be remembered as having been exhibited at the meeting of the American Pomological Society at Baltimore in September last. The Massa-

achusetts Horticultural Society have awarded to it the prize of \$60, for the best new seedling grape. It is reasonable to suppose that this variety will be as much improved as is the *Concord*, when grown in localities more favorable to the grape, than the place of its origin.

Annexed is a report by John W. Adams, of Springfield, which will be found to convey much valuable information on fruit culture in Western Massachusetts. I must, however, dissent from Mr. Adams' opinion of the *Tetofsky* apple, which I esteem more desirable than the *Red Astrachan* for a family garden, though, owing to the delicacy of its skin and its less brilliant color, it is not so eligible for market.

For the Committee,

ROBERT MANNING.

REPORT FROM WESTERN MASSACHUSETTS.

In looking about for some of the hindrances to fruit culture, we find that for a series of years on the Connecticut, tobacco was the leading, and an exceedingly profitable, crop. All other farm productions being tributary, other crops were grown, that a larger amount of dressing might be had with which to increase the area and weight of the next tobacco harvest. Car loads and sloop loads of manure were brought one or two hundred miles, at a cost, delivered on the farms, of from twelve to twenty dollars a cord, "the buyers," says a distinguished teacher, "growing poorer year by year." The climax in this direction seems to have been reached when the golden corn, that world renowned product of the American soil, was crushed and buried beneath the roots of a weed, whose growth adds not to comfort, wealth, long life or cleanliness.

The culture of fruit has been to a great extent overlooked, because its profits were not speedy enough to immediately affect the interest at heart. Had the same outlay in experiment, in persistent labor, and in money, for thirty years, been expended in the department of fruits, how different the result! The country may be looked over in vain to find localities where the leading fruit trees grow with more luxuriance and beauty in a natural state. Forest and shade trees of colossal proportion in the valley of the Connecticut, the oft quoted specimens of the lamented Downing, indicate that the proper elements of growth, if directed by the intelligent labor of man, will return, in due time, thirty, sixty, and a hundred fold.

Looking the field over, ought we not to be satisfied with the progress that has been made in horticulture?

Thirty years ago a well known hotel keeper could not find cherries enough for a small fourth of July party. "Look now," says he, "at the tempting display of fruit that lines our streets from end to end."

"Come in and take a drink," is a too common expression when comrades meet. "The time will come," said the late landlord of the Astor House, "that all this will be changed, and fruit will be so plenty that the invitation will be, 'Come in and take a pear.'" It is well worth considering how many millions the country could afford to pay, better than to have the *Concord* grape and all its results blotted out.

Taking this vine as the type of vigor, health, productiveness and flavor, I have seldom, if ever, seen it do better than in the light soils on the second level above the Con-

necticut river, in Southern Massachusetts. With very ordinary care, my next neighbor produces them almost by the ton, and a single vine on my own place, allowed to grow at random, ripened this year a quantity estimated to exceed three thousand bunches, equalling in sweetness and flavor those that came from the south.

Of vines that may be classed with the *Concord* for hardiness, vigor and productiveness, able nearly to take care of their own body, I should name the *Martha*, *Hartford Prolific*, *Tullman*, *Worden*, *Tea* and *Clinton*. The *Martha* has some merits for family use, perhaps, but it is not a pleasant looking fruit, and can never be a profitable or popular market variety.

The *Hartford* continues to modestly work its way into every man's yard, though unpleasantly snubbed by the Pomological Congress in 1856, when it was first introduced.

The *Tullman* and *Champion* are the same. It proves to be very early, of fair quality, and a showy bunch. It is perhaps the best *very* early grape we have tried, yet not nearly as good in quality as the *Worden*, which appears to be a trifle earlier than the *Concord*, and is very much prized by several who have fruited it in this section.

Of a class not as reliable as the preceding are the *Rogers' Hybrids*, the *Brighton* and *Senasqua*. There are several varieties that have been too largely and unwisely planted. Among them the *Croton*, *Isabella*, *Eumelan*, and several of *Rogers' Hybrids*. Their successful cultivation must necessarily be confined to very narrow limits and favored seasons. Among

PEARS,

none stand higher than the *Bartlett*, and there are few more promising than the *Clapp's Favorite*. It proves to be productive, of showy appearance, and, when harvested early, of excellent quality.

Doyenne d'Eli is early and productive; always small and always good.

Madeline is discarded.

Manning's Elizabeth is growing in favor, and in the same list may be classed the *Belle Lueratiere*, *Sheldon*, *Doyenne Boussock*, *Onondaga*, *Louise Bonn*, *Seckel*, *Beurre Bose*, *Duchesse*, *Lawrence*, and *Winter Nelis*.

Opinion is divided in regard to the value of the following very fine sorts, partly because their culture is not generally understood.

Beurre Chirgou frequently overbears and the trees stop growing. The *Vicar* tries to bear four times the quantity it can mature, but the tree does not in consequence stop growing. The *Flemish Beauty* sometimes cracks, and the remedy is, to gradually graft the top with *Beurre Bose*.

APPLES.

The *Baldwin*, for profit, continues to be the leading apple in Western Massachusetts. For the hill towns, where it ripens late, it is doubtless of more value than any, or perhaps all other varieties combined. It ought not on this account to be the object of unlimited praise, for, like many in the human family, it has several failings. In the whole list of apples it seems to be the least hardy; its excessive productiveness is frequently followed by the death of the tree itself. Grown in the fertile soils near the river, it ripens too early, and the fruit decays prematurely.

The *Hartbut*, of the *Hubbardsbon* type, ripens in late autumn and early winter. On account of its superior flavor,

its rapidity of growth, its productiveness and season, it is slowly working its way into public favor.

The *Northern Spy*, in warm locations, rots on the tree and is a very unproductive sort in most places, though it occasionally does well.

The leading sorts now cultivated are *Red Astrorhan*, *Duchess of Oldenburg*, *Porter*, *Graenstein*, *Baldwin*, *Hubbardston Nonsuch*, *Hurlbut*, *King*, *Northern Spy* and *Greening*, and for sweet apples, the *Sweet Bough*, *Orange Sweet*, and *Talman Sweet*.

Through the persistent efforts of "tree tramps" and colored pictures, Russian apples have been planted far beyond their merits. That old sort, so long forgotten, the *Tchifsky*, has been brought to light again and exalted to the front rank, although it has no merit for this state, that the white man is "bound to respect."

In the department of Crab apples, the *Transcendent*, *Marango*, *Montreal*, *Lady Elgin*, and several others, are very decided improvements upon the older varieties, and further trial, it is hoped, will bring to light winter and long keeping sorts.

A most persistent enemy of this whole class of apples is the white scale, or bark louse, which to a great extent detracts from the value of the tree.

PEACHES

yield good crops more frequently than apples, especially in the city gardens. Trees in Springfield nearly thirty years old that have rarely failed to bear, have been pointed out to the writer. The winter sometimes injures the trees, but the borers appear to be the most deadly foes.

There has been an abundant crop this year. The *Early Crawford* appears to be the favorite sort. It ripens at the time when southern peaches are gone, and sells from \$3.50 to \$4.50 per bushel. The *Foster*, on the grounds of the writer, was nearly as beautiful as those the renowned Captain Foster used to exhibit at the horticultural shows in Boston, and for which he refused \$12 a dozen, and in size and flavor it was good enough for a king. It is only a moderate bearer. The

STRAWBERRY

is receiving increased attention. The *Wilson's Albany*, among market gardeners, stands pre-eminent, and any new variety, to gain favor with them, must yield nearly as many bushels per acre as a potato field. While for productiveness it is the standard, it is the poorest in quality, and the demand for a better flavored berry is happily increasing.

The *Champion* is very similar to the *Wilson* in productiveness and quality.

Charles Downing is large, handsome, productive and excellent, both for family and market.

Kentucky is only second to the last named.

Col. Cheney is large, of good color, a good grower, productive and excellent; it does very well on light soils.

Triomphe de Gand is large and fine, but the foliage burns in the sun.

Niveau is of medium and uniform size; a moderately good bearer and of good quality.

Boylan's No. 30 is very large and excellent; a moderate bearer.

The *Duncan* is growing in favor on account of the richness of its flavor and its earliness. The *Monarch* is attracting commendations for its size, and it has a good record for fruitfulness and quality. At least twenty other sorts are on trial, and the progress making in this line ought to satisfy the most enthusiastic. Why

RASPBERRY

culture has not kept pace with its more modest predecessor is a mystery to many horticulturists. The fruit is of the highest excellence, is easily grown, and sells readily at remunerative prices, yet most of the progress made in this state in its cultivation has been within the last decade. The sorts mostly grown are *Mammoth Cluster*, *Doolittle*, and *Darison's Thornless*, for black, and the *Herstia*, *Franconia* and *Clarke*, for red.

Less attention has been paid to

PLUMS

than to apples, pears or peaches. The trees grow remarkably well and are free from the black knot. The *Lombard* is exceedingly productive, and one grower, who has tried many kinds, this year planted one hundred trees of this variety. Another in Hampshire County reports the *Prunes* as excelling in quantity all other sorts. Where several trees are grown, good crops result; but in gardens with only a single tree, the curculio frequently takes the lion's share of the fruit.

Shelter has its disadvantages, yet the best fruit growers find it to be of the first importance. Pears, either north or south of an evergreen hedge, grow faster than those at a distance. Branches of grapes from vines planted on the south side of a close fence have strayed through some knot hole and ripened fine bunches equally early on the north side. As Mr. Tudor could not grow trees on Nahant until he had built a three-ply lattice to sift the wind, in a less ratio will it be found that sheltered gardens and orchards are the most abundant in fruitfulness. Too wide apart planting, in imitation of the practice at the west, has decreased the old-fashioned shelter that one tree afforded another, and a return to less land and more fruit upon it, is the tendency of the day.

JOHN W. ADAMS.

Springfield, October 25, 1877.

Report From Rhode Island.

PROVIDENCE, R. I., August 23, 1877.

P. BARRY, *Chairman General Fruit Committee, American Pomological Society:*

Dear Sir—I forward to you a corrected list of fruits for the State of Rhode Island, and the revision was very much needed. I have been assisted by Mr. Silas Moore and Hon. Edward D. Pearce. I regret to say my name has been misprinted in the catalogue, *Bourne* instead of *Bourne*, and communications sent to me have not been received. I trust you will have a delightful meeting at Baltimore, in September, and that much good will result to the science of Pomology, which we all delight to study.

Very respectfully yours,

JOSEPH H. BOURNE,

Member General Fruit Committee,

State of Rhode Island.

LIST OF FRUITS FOR RHODE ISLAND CORRECTED. THE REMAINDER OF LIST TO STAND AS NOW RECOMMENDED.

APPLES.

One Star.—*Cogswell, Pomme Royale, Early Red Margaret, Early Strawberry, Harby, Moore's Sweet, Northern Spy, Washington, Westfield Sick-no-farther.*

Two Stars.—*Ladies' Sweet, Red Astrachan.*

PEACHES.

One Star.—*Colt's Early Red.*

PEARS.

Moore's Pound, recommended for cooking.

One Star.—*Dojenne du Conice, Mount Vernon.*

Two Stars.—*Beurre Giffard, Dana's Honey, Rostiezer, St. Michael Archangel, Seckel.*

GRAPES.

Two Stars.—*Hartford Prolific.*

One Star.—*Iona, Isabella.*

PLUMS.

One Star.—*McLaughlin, Pond's Seedling.*

RASPBERRIES.

One Star.—*Mammoth Cluster (black cap), Doolittle.*

STRAWBERRIES.

One Star.—*Col. Cheney, Juvenia, Wilson's Albany.*

Two Stars.—*Seth Boyden.*

CHERRIES.

One Star.—*Belle d'Orleans, Black Heart, Early Purple Guigne, Gridley, Reine Hortense.*

One Star.—*Cherry.*

CURRANTS.

Report respectfully submitted,

JOSEPH H. BOURNE,

Member General Fruit Committee,

Providence, Aug. 23, 1877. State of Rhode Island.

Report from Connecticut.

LIST OF FRUITS.

APPLES.

Apples for general culture in the order of ripening:

One Star.—*Fall Pippin, Northern Spy, Westfield Sick-no-farther, Roxbury Russet.*

Two Stars.—*Red Astrachan, Early Harvest, Sweet Bough, Golden Sweet, Porter, Graunstein, Famous, Hubbardston Nonsuch, Rhode Island Greening, Baldwin.*

Dagger.—*Harbut, Ladies' Sweeting.*

Local or partially tested for special purposes

One Star.—*American Golden Russet.*

Dagger.—*Chenango Strawberry, Primula, Mexico, Cogswell, Baker, Ered, Yellow Belleflower, Canada Red, Peck's Pleasant, Burdett Sweet, Green Sweet, Belden Sweet, Palmer Greening.*

PEARS.

One Star.—*Dojenne d'Ele, Osband's Summer, Beurre Giffard, Rostiezer, Dearborn's Seedling, Onondaga, Dojenne Boussock, Belle Lucratie, Howell, Paradis d'Automne, Louise Bonne of Jersey, Beurre Rose, Beurre Clairgeau, Winter Nels, Vicar of Winkfield.*

Two Stars.—*Chapp's Favorite, Bartlett, Seckel, Sheldon, Beurre d'Anjou, Lawrence.*

Dagger.—*Dojenne du Conice.*

PEACHES.

One Star.—*Coolidge's Favorite, Crawford's Late.*

Two Stars.—*Troth's Early, Stamp the World, Large Early York, Oldmixon, Crawford's Early.*

Dagger.—*Stone Peach, Yellow Raveripe.*

CHERRIES.

One Star.—*Early Purple Guigne, Early Richmond, Black Eagle, Co's Transparent, Elton, Gor. Wood, Belle de Choisy, Rockport Bigarreau, Black Bigarreau.*

Two Stars.—*Black Tartarian, Downer's Late Red.*

PLUMS.

One Star.—*Lombard.*

Two Stars.—*Green Gage, Imperial Gage, Smith's Orleans, McLaughlin, Co's Golden Drop.*

QUINCES.

Apple, Pear.

GRAPES.

One Star.—*Delaware.*

Two Stars.—*Hartford Prolific, Concord.*

Dagger.—*Ives' Seedling.*

CURRANTS.

La Versailles, Cherry, White Grape.

RASPBERRIES.

Niami (true), Clark, Brinckle's Orange, Mammoth Cluster.

STRAWBERRIES.

Two Stars.—*Wilson, Charles Downing.*

Dagger.—*Col. Cheney, Russell's Prolific, Monarch of the West, Triomphe de Gand.*

T. S. GOLD,

D. S. DEWEY,

P. M. AUGER,

J. B. OLCOTT,

EDWIN HOYT.

Committee.

NOTES ON CONNECTICUT FRUITS.

THE APPLE.

The apple does reasonably well in all parts of the State; best in the hilly portions, and least just on the margin of Long Island Sound, unless sheltered seaward.

The *Baldwin, Rhode Island Greening, Roxbury Russet, Harbut* and *Hubbardston Nonsuch* perhaps claim pre-eminence as profitable varieties.

Uniformly good care and culture and regular manuring are sure precursors of success with apple orchards.

THE PEAR.

The pear does well in all parts of the State, without exception; occasional instances of blight occur, but to no such extent as to discourage the planting of the pear.

Pear trees are by far the safest and most profitable, as standards, and with the exception of three or four varieties, such as *Louise Bonne of Jersey, Vicar of Winkfield* and *Duchesse d'Angoulême*, we would not recommend the planting of dwarfs, and then not without suitable culture, care and pruning.

THE PEACH.

There has been much to discourage the planting of the peach in Connecticut; the trees have often been diseased and short lived, dying without producing fruit. For the last few years, however, those fruit growers situated on high ground, who have had a healthy stock of trees, have had satisfactory crops of fine peaches. With high land, not over-rich, properly sheltered, where peach trees have not before been planted, and with a stock of healthy trees of such varieties as the *Oldmixon Free*, *Large Early York*, *Stump the World*, *Hill's Chili*, *Barnard*, *Crawford's Early*, *Crawford's Late*, and some others, by giving shallow culture, moderate manuring, proper thinning and intelligent care, there is sufficient encouragement for planting the peach in Connecticut.

THE PLUM.

The plum is but very little cultivated, and is often barren, chiefly in consequence of the black knot, caused by the fungus, *Sphaeria morbosae*, and the attacks of the curculio. A little watchfulness and prompt removal will usually keep the former in check.

The curculio can certainly be controlled by the jarring process, and probably by enclosing the trees and thoroughly occupying as a poultry yard; in some instances this method has been quite successful.

The curculio has also been repelled by occasionally drenching the trees, in the curculio season, with an offensive mixture like the following: "Take six pounds of whale oil soap and one pint of tar, boil together with a few quarts of water till dissolved, then mix with forty gallons of water." This was used successfully by the late Dr. J. J. Howe, of Birmingham, Connecticut, also by others.

By proper management and care the plum can be successfully grown in Connecticut.

QUINCES.

The quince, though easily propagated, is one of the most difficult of all trees to get grown up to full bearing size, and then to keep the orchard intact, healthy and free from loss of trees.

We think the nurserymen often furnish trees propagated from a depleted stock, deficient in vitality, so that twenty, thirty and even sixty per cent. of the trees often die.

The trees need a good, deep, rather moist soil, and should have the best care always; especially guarding against the ravages of the borer, which attacks the quince with great avidity.

The quince does best in those towns bordering on Long Island Sound, and in rich land near the borders of streams or lakes. A moderate application of salt, evenly distributed, seems to favor the health, growth and productiveness of the quince.

Two or three washings a year with soap suds help to repel the borer and promotes the health of the trees.

CHERRIES.

The cherry does well in most sections of our State. The trees should be made to head low; the trunks should be shaded by a lattice frame, or something of the kind, till they have formed a good spreading head; sometimes the trunks seem to sun scald and exude gum over quite a surface, frequently spoiling the tree.

I have found a wash of soap and lime, properly diluted, good to prevent the above and promote the general health of the tree. I think cherry trees do best standing in grass land properly enriched.

GRAPES.

The grape is raised successfully. The *Concord*, *Hartford Prolific* and *Lees* are leading varieties, yielding the best profit.

Many of the finer grapes mildew and practically fail. A grape of the best quality, and as hardy and productive as the *Concord*, is what we want.

CRANBERRIES.

The Cranberry is grown somewhat extensively in several localities in Connecticut, especially in Lyme, Essex, Westbrook, Clinton and Madison. The ravages of the cranberry worm cause some apprehension for the future.

A meadow otherwise well fitted and having a living stream capable of flooding the meadow in thirty-six hours, is a great desideratum.

STRAWBERRIES.

The strawberry is successfully grown in Connecticut, several varieties in more or less favor have originated here, that of most pretension now being *Parnellee's Crescent Seeding*, a berry of fair size, great productiveness and good quality. It will probably be good for family use, or a near market. The strawberry needs rich land and clean culture. The great enemy is the white grub.

STATISTICS.

The fruits of Connecticut, in 1850, amounted to \$175,000; in 1869, which was a barren year, orchard products \$536,000; in the years of 1872 and 1874 the crop was estimated at about \$2,000,000 each year. In the year 1876 the crop, which was not a full one, was estimated at about \$1,000,000.

The care and cultivation given to orchards have increased very much during the last five years, so that our best orchards do not suffer now, in comparison with Western New York, or Michigan. As an instance of success in orcharding, a single orchard near New Britain, owned by G. H. Merriman, in 1874, yielded 1,500 barrels of select *Baldwins*; the entire orchard products of the farm exceeded \$3,000.

Many orchards of apples and pears have proved very profitable, and we anticipate much greater success in the future than in the past.

Report from Wisconsin.

MILTON, Wis., Aug. 20, 1877.

P. BARRY, Esq., *Chairman of Fruit Committee*:

Dear Sir—Since the last biennial report of our State Committee, we have had two remarkable periods in our pomological history, viz: The exceeding fruitfulness of 1876, and the general barrenness of the present year in all the cultivated fruits except the Strawberry, Raspberry and Grape.

The causes which have produced these widely different results, are in most cases plain to be seen.

1st. The small crop in 1875, and the mild winter of '75-6 brought our trees out that spring full of vitality and with

fully developed fruit buds, and hence with a favorable summer we had an extraordinary crop of apples, and of other fruits an ordinary yield, except grapes. These in some sections lost their young wood by the August frost of 1875, and required a full year to restore them to a bearing condition: Where this was not the case, the crop of grapes was truly magnificent, and 1876 will long be remembered as the *great apple year*.

2d. The long continued rains of last September prevented perfect maturity of wood in many locations, and the excessive cold of December doubtless injured the fruit buds throughout the Northwest. The morning of December 9th, the mercury marked 25° below zero, which was not equaled again until the 17th day of March. In the month of January it was below only five mornings, viz: The 3d, 12°; the 8th, 18°; the 13th, 22°; the 22d, 6°; and the 23d, 23°. Then in March below only three times, viz: The 10th, 15°; the 15th, 8°; and the 17th 28°, which was the lowest temperature at Milton, Rochester county, lat. 42° 45' for the winter of 1876-7.

February was very mild throughout, the snow and frost leaving the ground, but thanks to seasonable rains, no injury came to the roots of anything. But why, and when the injury which destroyed the fruit buds? Doubtless it was largely in December, but not alone then. A careful examination in February showed tender varieties of two-year apple in nursery, killed to the ground, and a large proportion of cherry buds killed. But apple buds were generally all right until after the severe cold of March, which, following the long warm term of February, destroyed the best fruit buds of the apple and the currant, and even injured the Lombardy Poplar, the Maples, and other deciduous trees very extensively throughout the West. But one thing is remarkable and very instructive. In the latitude of Green Bay and further north the currant crop was, as usual, very abundant, and the apple crop nearly an average yield in many localities, and a pear orchard in that vicinity, of 15 years' planting and 12 years' bearing, of several choice varieties, is this year producing a full crop. Now, these currants and pear trees experienced a lower temperature by 10 to 12 degrees than the same varieties in a more southern latitude, which grow no fruit this year. But they were, in the first place, grown in and for the climate; and second, they were not weakened by so much warm weather in mid-winter.

The pear orchard referred to is one of the finest examples of the theory of "*self-protection*" we can refer to in the West, it being situated on one of the highest, bleakest and most exposed hills of Central Wisconsin, in the vicinity of Green Bay.

Did space permit, we would refer to other notable cases of apple and pear orchards similarly located, which are completely successful, both in health of trees and fruitfulness.

The two questions of location and variety are forced upon us by the extremes of our climate, and we are at last focused upon two cardinal points:

1st. General planting only of varieties which have passed through the extremes of 1872 and '75, and the 5-year test of all new varieties and in different localities.

2d. That firm soils, of medium fertility, on high, airy locations only, can be relied upon for health and fruitfulness.

In following these principles there is a gradual weeding out of tender and half-hardy varieties from our list, making way for new favorites and those which pass safely through the trying ordeals of our climate. In this process of change the improved *Siberians* are growing largely into favor, not for preserving only, but for all culinary and dessert uses, since we now have all flavors from sharp tart to richest sweet, with seasons of ripening from early August to spring, and of size up to the *Fameuse* apple; any lack of size being fully compensated by their concentrated richness of juices. There are on trial apples from Russia in which some have a strong faith, that out of several hundred varieties now being grown here we shall find a few at least that will prove of great value; that will prove "iron clad." The great drawback on these so far is that they are largely of the *Trofsky* and *Duchess* class; early ripening and coarse. But if they develop winter varieties of good quality, such may prove of great value in their especial adaptations to the extremes of our climate.

Under the stimulus of necessity and notoriety, there is an increasing production or discovery of new seedling fruits in the Northwest, that seems bound to create a Pomology peculiar to this region. Yet we hold fast some of the eastern favorites that prove hardy. The revision of your fruit list for this state has been made by the aid of some of our most experienced fruit growers, and after the fact that the list as published really never did fairly represent our best experience, as a report of so much importance should.

In submitting our now thoroughly revised list we will here only remark on some of the leading characters in our Pomology:

APPLES.

Our leading summer apples are *Trofsky*, *Red Astrachan*, *Sweet June*, *Sops of Wine*, *Fall Stripe* and *Duchess*. The *Summer Pippin*, *Early Joe*, and *Kirkbridge* are also valuable varieties for our State, although but little grown.

The leading fall varieties are *St. Lawrence*, *Fall Wine*, *Coloet*, *Huas*, *Utter*, *Fall Orange*, *Plumb's Cider*, *Fameuse* and *Bailey Sweet*, the last named five becoming winter apples by early picking and proper storage, and in central Wisconsin are such by ordinary treatment.

Our winter list extends to the *Sack-no-Further*, *Talman's Sweet*, *Paradise Sweet*, *Golden* and *Perry Russets*, *Northern Spy*, *Jamt*, *Bu Davis*, *Paranka*, *Walbridge*, and *My Sack-no-Further*. These varieties so far named are all in general culture, and form the large bulk of our apple crop, but we have in bearing more or less of all the old eastern favorites.

We have several new varieties of great promise, which originating in the state, and having stood the most severe tests to be expected in our climate, may claim to have especial merit for the Northwest, which private enterprise will bring to public notice in due time. The Strawberry and Raspberry are of universal success; *Wilson*, the leading variety of the former; *Miami* and *Philadelphian* of the latter.

Delaware, *Concord* and *Janesville* Grapes have been planted more largely than any other varieties; but *Rogers' Hybrids* are successful in all cool, airy sections, and nowhere more so than in the valley of the Lower Fox River. The soil is a rich composite of magnesian lime rocks, and with the alluvial marly deposit, even temperature and

moist air, seems to suit the grape beyond any other in the West.

Of our native fruits the Cranberry exceeds all others in importance. The statistics of the crop for the present year will show a source of income to the state exceeding the wildest expectations of even those who have the "Cranberry fever." We will furnish you them in time for your published report.

The Blueberry comes next in importance, and is usually the means of distributing many thousands of dollars among the people of the new and sparsely settled, as well as the poorest agricultural part of the state. The wild Blackberry is also a source of large income to the new timbered lands of central Wisconsin.

Nomenclature has received much attention at the hands of our State Society, being provided for by standing committees, who have most arduous duties at our State exhibitions. These committees have freely exercised the power vested in them to correct the nomenclature of professional as well as non-professional exhibitors, and we now find very nearly accurate lists from all our reading and exhibiting growers of trees or fruits. We have traced many of our western apples to their origin, and identified others of supposed western origin by their old names and eastern homes. This difficult and thankless, but important work should receive more encouragement from state and local societies. For the purpose of securing definite information, this state has been apportioned to a Committee of Observation, in twelve districts, according to natural conditions of climate and soil. This committee report upon six different points, viz.:

1st. Give an outline of the general physical geography of your county or district.

2d. Nature of soil, elevation and aspect where your most successful orchards are located. Also, the same of the notably unsuccessful—all of not less than five years' planting.

3d. What varieties have proved most hardy and productive, and seem best adapted to your locality, of Apple, Pear, Plum, Cherry, Grape, and small fruits; also, of any new varieties of fruit, either seedling or not, that promise to have superior merit or adaptation.

4th. Give examples of any quite successful efforts in fruit growing, especially of Apples or other fruit for market in your vicinity, giving names and other data, so far as possible.

5th. Amount of tree planting—fruit, ornamental, or timber—this season, compared with former years, and what success has attended the same; also, statistics as to amount of fruit production, and extent of small fruit culture.

6th. To what extent has "fire-blight" prevailed; at what time did it appear, and all the conditions under which it occurred. What other diseases have appeared, with peculiarities and treatment of them.

The reports of these committees so far have been quite full, and give promise of great value in the future.

OBSTACLES TO SUCCESSFUL FRUIT CULTURE.

The obstacles to successful fruit growing in our state are largely climatic; hence the necessity of adapting our entire practice to this fact. We have a "New World" in our climate, and hence a peculiar pomology. The ex-

remes of seven degrees of latitude east of the great lakes meet for the first in our state. We have the mean summer temperature of Pittsburg and the mean winter temperature of Quebec.

Most of our native soils are rich in mineral elements and decaying vegetable matter. A luxuriant growth of wood in summer, prolonged into the season of severe frost by our warm autumn, and the inevitable winter which follows, are all conditions which we have had to meet and overcome in this state. The intelligence and energy of our people has in a measure, and ultimately will fully triumph in the production of abundance of choice fruits. We have learned to "go slow"—to restrain excessive growth; to secure early maturity of wood; to avoid rich valleys and all closely protected situations, but to protect from the drying south-western wind and sun of winter, by temporary or permanent sun-shade, and wind-break on the south-west *only*; to cultivate only early in the season or not at all; to train to low tops and little pruning, except in June and October. Then keeping in mind the two cardinal principles given, we have success assured in the culture of apples of the finest quality, rich in their juices and beautiful in coloring, which our glowing autumn always gives.

We find that early gathering and cool storage make our autumn varieties available for all winter use. We have waged war of extermination on the *Canker Worm*, by using arsenic solution—one pound to 40 gallons of water applied about June 1st, with force pump. The *Bark Lice* have succumbed to the *Acarus*, and is nearly or quite rooted out by this little predatory insect.

The *Callling Moth* as yet defies our best efforts, but we have great hopes of curtailing them with the summer bands *well tended*.

The *Fire Blight* prevails in all our alluvial lands under high culture, and most largely in the close-grained hardwood trees. The Crab family are especially liable to it. We are generally agreed that this disease in its various forms is not of insect nor of fungoid origin—that these may be present, but as *concomitants*. That the disease arises from defective circulation, caused by combinations of soil and atmosphere; governed by known laws of vegetable physiology, and may be largely avoided by conditions of location and culture. Facts before us yearly confirm this theory and afford good foundations for the hope of avoiding the plague in general orcharding. But woe to the surfeited trees of the hotbed gardens.

A word more about orchard culture. The inevitable conditions of our climate are driving us to the alternative of very moderate or no culture after the tree attains bearing size. A winter mulch being a necessity on all soils, and a summer check to excessive growth a safeguard on rich soils, the presence of some continuous growth is found very useful and consistent with successful orchard culture, provided that growth be cut frequently during the summer and allowed to remain on the land. I have no doubt this practice will succeed on poor lands, with an annual top dressing of needed fertilizers.

Through the joint efforts of our State Societies, we last winter secured the revision of our assessment law, providing for complete statistics of our entire soil productions, both acreage and quantities, including also timber resources. This plan contemplated two years' statistics for a complete report, but through legislative bungling or

clerical meddling the Act was shorn of its power. We will not fail to follow up the work another session.

In common with most States of the Union, we made an exhibition of our representative fruits at the National Centennial, showing 210 varieties of apples, 110 of Siberians, 13 of pears, 2 of plums and 32 of grapes. Our exhibition was commended for its large variety of apples and the correctness of its nomenclature. It was remarkable in its being largely western and north-western in its origin; for its varied beauty of colors; and last of all for its keeping qualities, the proof of which was the fact that without removal, our fruit was mostly in perfect condition through the entire exhibition. We had the heaviest and largest apple in the hall, except some from California, which variety was the *Alexander*. We had the most beautiful plate of dark colored apples, which were the *Black Detroit*. Our Siberian apples, in their great variety, large size and beautiful colors, were the admiration of the world. We had apples from a more northern latitude, probably, than ever before exhibited on this continent, viz: A plate of *Duchess*, from Superior, Douglas County.

When all the collections had been finally arranged on three large tables, occupying about 100 feet extension, two sides of which were closely packed with 450 plates, most of them piled full of the beautiful, high-colored apples of our northern climate, we felt proud of the display which our State made under such adverse circumstances of season and distance from home.

We cannot too highly commend these National Exhibitions as affording opportunity for the comparison of fruits, and of harmonizing the nomenclature of the nation, and we exceedingly regret the adverse conditions which render it inexpedient for our society as such to attempt a representation of our fruits at the coming meeting of the American Pomological Society, at Baltimore.

Very truly yours,

J. C. PLUMB,

Chairman of Fruit Committee for Wisconsin.

Report from Dakota.

YANKTON, Dakota, Nov. 26, 1876.

In reply to yours of the 17th, I am sorry to say that but little interest is manifested in fruit growing in our territory. We have been fighting Indians, droughts and grasshoppers, and keeping the "wolf from the door." However, a brighter dawn has broken and some fruit trees are being planted. I am experimenting in small fruits, and very much interested in pomology. There is a big field to labor in, and there is no fruit raised here.

Respectfully,

A. W. HOWARD.

Report from Montana.

BOZEMAN, M. T., August 4th, 1877.

P. BARRY, *Chairman General Fruit Committee American Pomological Society:*

Dear Sir—In submitting my first report to the American Pomological Society, I will say that a report at this time cannot be very creditable to our people, and will be void of interest to the Society. Our inhabitants perhaps have a very reasonable excuse for the lack of interest in this

branch of industry. A large majority of our people are of the opinion that certain kinds of fruit cannot be raised successfully. Owing to the very high altitude and the short growing season, it is considered in many localities to be a hazardous and unprofitable enterprise at best. Some of the counties the most remote from the main range of the Rocky Mountains, can and will in time, with proper care and culture, raise all kinds of fruit very successfully, while other counties situated on the very summit of the main range cannot expect to raise any but the small fruits, such as strawberries, gooseberries, currants and raspberries.

Many kinds of wild fruit grow plentifully nearly every season in this country, such as chokeberries, service-berries, strawberries, two varieties of whortleberries, three varieties of currants, raspberries, buffalo berries, gooseberries of good quality, and the Oregon grape.

Only two counties in the Territory have produced apples with any degree of success. Missoula county ranks first and Madison county second. Lewis and Clarke county will produce some apples this season. I am unable to state with what degree of success, as no report has been received from that quarter. Mr. Bass reports from Missoula county that the *Red Astrachan* apple ranks best in his locality. Small fruits are cultivated in all parts of the Territory very successfully.

The chief obstacle in fruit growing in this country are that the trees winter-kill, and the rabbits are liable to girdle the trees. The hardy varieties of apples, such as the *Siberian Crab* would undoubtedly do well in this altitude; the people here have to rely entirely on California and Utah for their fresh fruit. Two, out of the committee of five, appointed by me in June last, have responded; the reports sent by them will accompany this article. I am in nowise engaged in the cultivation of fruit, and the appointment of myself as chairman of the committee of fruit growers was a gross mistake of the society, therefore I tender my resignation, and recommend that the society, at its next annual session, appoint the Hon. W. E. Bass, of Stevensville, Missoula county, in my place; he is the most successful fruit grower in Montana, and deserves the highest position.

Very respectfully yours,

J. D. McCAMAN,

Chairman Committee.

STEVENSVILLE, July 23d, 1877.

MR. J. D. McCAMAN:

Dear Sir—Your favor of June 25th was duly received and contents noted. All I can do at present is to write you a few items about fruit growing in this county. I have always taken a great interest in the matter in this valley, and I believe I am the only one that has. I have always claimed that in a climate like this valley, where melons, tomatoes, egg plants, &c., grow to perfection, without any protection or extra care, apples would also grow to perfection if they had a chance. Plums and cherries are doing well, and bear fruit every year. The variety of apple that seems to do the best is the *Red Astrachan*. There is no nursery, no practical horticulturist; most of the fruit trees we have come by mail from the States; a large part of them from B. M. Watson, Plymouth, Mass. The great drawback is that the trees winter-kill; the cause of which is clearly in my opinion a mismanagement

in irrigation and a lack of, under drainage. There are probably from thirty to forty apple trees bearing fruit this season in this county; there are probably three thousand growing altogether. The oldest trees in the valley are about ten years. During the present season I will take and save items and try and make up a full report for next season. I hope we may be able to keep up our connection with the American Pomological Society. I think it may be of great advantage to us in the way of introducing the fruit growing business in this country. Anything I can do in the matter I will do cheerfully.

Yours truly,
W. E. BASS.

DEER LODGE, MONTANA, July 7th, 1877.

MR. J. D. McCAMAN, *Chairman Pomological Committee Montana*:

Dear Sir—Yours is at hand and in haste I report. We raise in this county, currants, gooseberries, blackberries, raspberries and strawberries; apple, plum and cherry trees grown by me, and nearly large enough to bear, seem to be doing well. Remarks as to the cultivation of these kinds of fruit will doubtless be made by Mr. Bass and others, and will apply to the irrigating region generally.

Yours truly,
ADDISON SMITH.

Report from Washington Territory.

To the Chairman General Fruit Committee American Pomological Society:

I would say, in regard to a pomological report from this Territory, that we have a great variety of soils and climates, and those who have some experience in fruit culture are scattered far apart, and it is therefore impossible to assemble together to discuss the subject and arrive at some general definite conclusions.

Most of us too are new beginners in fruit culture here, and we find the soil and climate quite different from those of the Atlantic States, so that we have to begin and learn all over again.

It will not be possible for us to send fruit to Baltimore in September. Our winter fruits do not mature till October, and there is no direct route for transportation.

We could exhibit fruit that would astonish you by their size. Some of our fruits (apples and pears) are very large, but I think not equal in flavor to those of the Atlantic States. Plums and cherries cannot be excelled. I would like very much to meet with you at Baltimore, but my time and means will not permit. With my own I enclose such reports as I have been able to procure.

Respectfully,
C. W. LAWTON

REPORT FROM SEATTLE DISTRICT.

I think we can grow successfully, apples, pears, plums, and cherries, and I believe we can make a success of peaches, that is, certain varieties in certain localities, and some varieties of grapes under similar circumstances, but I do not think we can raise the grape for profit; and I am trying some figs. All the small fruits do well here, excepting gooseberries, and they mildew very badly.

APPLES.

All the varieties that have been tested, grow vigorous and rapidly and bear too soon; but as the country is young yet, and as there has not been anybody here raising fruit that knew anything about it, and I have not been here long enough to determine which does the best. I started my nursery on the river bottom land, and after getting started, there came one of those "spells," as they are called in this country, and killed out a great deal of my shrubby and herbaceous plants, and then I sold out the land on the river bottom and bought bluff land, and have just got started; so you see that it will take three or four years more before I can give any definite report; and if you ask the people here as to the best variety, one will tell you one and another something else, but I will give you a few names, *Red Astrachan, Early Harvest, Golden Sweet, Gravenstein, Dutch Mignonne, Blue Pearmain, Gloria Mundi, Sprout, Golden Russet, King of Tompkins County, New York Vanderveer, Hubbardston Nonsuch, Yellow Bellefleur Rhode Island Greening, Baddwin, Northern Spy, Red Chuck Pippin or Winesap*; there are other varieties that do very well in certain locations. Pears are the same as apples. There are only a few varieties that have been tried here yet, and they are as follows: *Early Butter, Madeline, Bartlett, Seckel, Winter Nelis, Vicar of Winkfield*. There are a great many other varieties that I expect to fruit next season. The varieties that I have named do very well here. The plums all seem to do well here, as yet. I will mention most of those that have been fruited so far: *Bradshaw, Columbia, Cox's Golden Drop, Green Gage, Jefferson, Damson, Yellow Magnum Bonum, Washington*. I have several others that have not fruited. For drying the *Peach Plum, Italian and German Prunes* do very well.

Cherries all grow finely here, and most of them do well. I will name a few which I consider the best as a general crop: *Black Tartarian, Cox's Transparent, Elton, Governor Wood, Napoleon, Black Republican, Royal Ann (Napoleon), Yellow Spanish, Kentish*.

PEACHES.

It is difficult to decide on. I have fruited one of *Rivers'* two years in succession, and it has proved a success; *Rivers' Early* and *Hale's Early*, do very well in some locations, and one large peach, *Cox's Cling*. I had several others, but they got killed by the frost three years ago.

I have tried grapes, quinces, mulberries, figs, but have not been very successful; currants, raspberries and strawberries do as well here as in any part of the world, but the large kinds of gooseberries are liable to mildew.

I have raised a new seedling peach that is very fine and large, and the tree is a strong grower and good bearer. It has borne four years in succession, and I think it will be valuable for this climate, as this is not a peach country; it ripens about the 10th of September.

I have a new cherry raised by a farmer named Henry Adams, of White Run. It is a cross between the *Kentish* and *Royal Ann*, and is a superior cherry; looks very much like the *Royal Ann*, but I think a much finer fruit. I have named it *Adams' Seedling*. I have raised two very fine strawberries from seed, very large, of fine flavor and very prolific. I have named one *Lawton's Pineapple* on ac-

count of shape and flavor, and the other *Laurton's Seedling*. I raised a lot of gooseberries from seed and fruited some last year and they were fine, but this year they are all injured by mildew.

4th. This is a question that I am not prepared to answer now.

5th. Obstacles.—The most serious obstacle is a blight that affects the trees in winter or early spring—the apples, pears, plums and cherries and peaches—but I think the apple is affected the most. It takes a great many of the one year old trees in the nursery and kills them down to the ground; and two and three year old trees are injured on one side, six or eight inches in length; sometimes more. Sometimes it goes clear round the tree, but it is not noticeable until spring. Larger trees it will kill by taking one limb at a time, and sometimes take the whole tree seven or eight years old. I think it is on account of the mild weather here in winter. All the trees grow nearly all winter, and then when a little frost comes it freezes the sap in the trees. The peach is affected differently from the other trees; the leaves curl up and fall off after the fruit is set. I think the cause of that is the cold damp weather in the spring; because just as soon as the warm weather comes, the old curled leaves fall off and new leaves come on. My seedling is less subject to the curled leaf than any other variety.

There have been no trees cultivated here, as yet now fruited. I started an orchard on the farm that I bought, but I found it was not suitable for the nursery business, so I thought I would sell out and buy other land; and in consequence I have got none on the way very far; that is, large enough to bear, but I think proper cultivation and good drainage will obviate the blight. I sold a man some trees three years ago last February, and he went to work and planted them on bluff land, and followed my directions, and they are the finest lot of trees that I know of in this county; clear, smooth and nice; there is only one fault, and that is he has not pruned enough, but he said he would prune them well next fall. Most of the fruit trees are ruined for the want of proper pruning, as the trees bear too soon. I have seen some varieties of apples bear at two years from the graft; the trees make a strong growth after planting out, and the second year after, they bear. You cannot very well prune the trees too much here, as the trees bear so young.

8th. There has not been any packing done here yet, as there has been no fruit to spare.

9th. In regard to statistics I could not give any. I do not think there is much increase, as the people neglect their trees too much; about all the increase there is, is in the new places that are taken up, and the lots around town.

REPORT FROM WEST OF CASCADE MOUNTAINS.

Being appointed by the Chairman of the Fruit Committee of Washington Territory, as one of the members of the above named Committee to forward answers to some questions in regard to horticulture of Washington Territory, I hereby comply with the Chairman's wishes, and send you such answers as I am able to give, according to my knowledge and experience.

QUES. 1.—What varieties of fruits have been found, by experience, best adapted to the soil and climate of your locality?

ANS.—As to apples, pears, plums and cherries they succeed here, without exception, admirably, and without blemish; we are less successful with peaches, apricots, nectarines and grapes, because they want a little warmer climate and warmer nights. All the small fruits grow here perfect, and are, like the large fruit, never molested by insects and worms; for instance the apple borer, curculio, raspberry worms, etc., have not been found here, only the currants are sometimes troubled by the currant worm.

QUES. 3.—If there are any new varieties of recent origin in your locality giving promise of excellence, you will please make special note of them?

ANS.—There are a few new varieties of apples, which originated with Mr. C. W. Lawton, in Seattle, and are of excellent quality and good size. Among my cherry seedlings I got one cherry that surpasses any that I have seen yet, and tasted; I have named it the "*Brilliant*;" its color is a beautiful dark crimson; size, larger than the *Gov. Wool*; flavor very superior, and perhaps the sweetest I have seen yet; ripens in early part of July. It is soft and therefore a fine desert fruit, but does not bear shipping very well. Among peaches, there originated a fine, middle sized one of excellent flavor and free stone, with Mr. Beale, on Fidalgo Island, which I think is not only of the greatest value for us here, but all over the United States; its best quality is, it ripens here in the middle of August, which I should call extremely early. Among strawberries there originated a splendid, large, fine flavored one with Mr. C. W. Lawton, who will make mention of it in his reports.

QUES. 4.—Give as much information, etc.

ANS.—In regard to this question, I would state that all the different kinds of fruit in the Atlantic States bear the same names here.

QUES. 5.—What are the chief obstacles to successful fruit culture in your locality, as regards soil, climate, insects, diseases, etc.; and what remedies have been most effectually employed?

ANS.—One of the obstacles (on this west side of the Cascades), in regard to soil, is the want of alkali in our soil; for this reason it is our duty to supply the alkali substances by lime, salsoda, soap water, ashes, etc. Another obstacle to the success in fruit culture in our part of the country is that the soil itself is, in most places, too sandy, with too little clay and loam; hence there is too little moisture during our dry summers for the support of trees. As to the climate I will say, that we do not need a better climate, except that we would prefer, during the summer, occasional showers of rain, and less rain in the winter. Insects do not trouble trees here; the only insects I ever found were currant worms. In regard to diseases, we have sometimes seen the blight about as much as we saw it in the Atlantic States; and in fact we have to learn yet about the most effectual remedies against the blight.

QUES. 6.—What treatment of the soil, etc.?

ANS.—As we know that fruit trees will thrive better in clay soil (especially where the sub-soil is clay), there ought to be clay moved to those places where the soil is too sandy and gravelly. But I am sure that trees can be benefited in any kind of soil by heavy mulching, and at the same time heavy pruning.

QUES. 7 and 8.—We follow here the same method in storing apples and packing fruit in general, as is done in the Atlantic States.

Very respectfully,

A. EGGERS.

REPORT FROM VANCOUVER.

MR. C. W. LAWTON, SEATTLE, W. T.:

Dear Sir—Your favor of 22d June was received. It has not been convenient for me to answer sooner. I hope it will now be in time, and that you will pardon the long delay.

Answer to first question:

1. I consider this section, in its soil and climate, well adapted to all fruits, without an exception, which are adapted to a mild northern latitude. Peach trees bear well with me every year, and the fruit is of good quality.

2d. No new varieties worthy of note.

3d. No obstacles at all, except a lack of intelligent efforts. Apple trees are considered short lived—I know of no remedy.

5th. All orchards in all countries, especially when young, need careful and thorough cultivation, such as you would bestow on a patch of vines. Do not cultivate late into summer. Young trees, especially apple trees, need a good deal of thinning when young. After that, not much, but moderate heading or cutting back.

6th. In this climate I usually store in lime barrels in barns, or ordinary fruit houses. Some winters I have to remove to cellars or well built fruit houses as a protection against frost.

7th. We ship apples altogether in square bushel boxes.

8th. We can raise any amount of plums, and of the finest quality. People are now setting out extensively with a view to drying.

Respectfully submitted, yours truly,

S. W. BROWN

REPORT FROM WALLA WALLA, EASTERN PART OF WASHINGTON TERRITORY.

SEATTLE, W. T., August 4th, 1877.

Having been requested to write a few words touching the eastern part of Washington Territory, as to fruit raising, I will say that I am not learned in the technical "saws" of the fruit grower, nor am I familiar with the names of many kinds of our several fruits. I have, however, a most excellent tooth for all manner of fruits; and having resided for several years at Walla Walla, in Eastern Washington, I will give a general idea of that country as a fruit region.

I may suggest, however, that the climate and topography of Washington Territory are but little understood in the east. The Territory is divided by the Cascade mountain range, running north and south, into two distinct sections as to soil and climate. In all that portion west of the range the country is heavily timbered; and there are but two seasons, wet and dry. The rains usually commence in October and continue until May. The winters are mild, seldom below the freezing point.

In Eastern Washington, the Walla Walla country, there is but little timber, except in the mountain ranges; high rolling prairie lands largely impregnated with alkali. There are four seasons, the spring, warm and pleasant; the sum-

mer, hot and dry; the fall, pleasant and dry; and the winter, in general, mild and short; say about as the winters in Southern Missouri; ordinarily no rain from May until September; in June and July quite hot. The falls usually late, quite often mild until December, yet liable at any time after October to be quite cold. Twice since the settlement of the country, to wit, 1860-1, 1873-4, the winters have been so severe as to kill the peach tree.

Now as to the fruits. At Walla Walla, and for fifty miles north from there, the apple, pear, plum, cherry, peach and apricot do exceedingly well. I think that I have never seen better fruits of all these varieties in any country. I cultivated a small orchard while residing there, of the several varieties of apples. The *Newtown Pippin*, the *Spitzenburg*, the *White* and *Blue Pearmain*, the *Baldwin*, the *Winesap*, the *Rambo* and similar varieties do exceedingly well. The trees are large and healthy. The fruit is entirely sound, never any worms or other insects destroy the apples.

CHERRIES.

I have tried the *Royal Ann*, *Napoleon*, *Black Republican* and *Black Tartarian*; all do well. The *Royal Ann* is especially fine. The trees bear well, and seldom fail. There are no better cherries in any country.

PLUMS.

The *Green Gage*, the *Peach* and the *Prune* all do well, and as yet have not been troubled with the curenlio, or any other insect.

PEARS.

All varieties do extremely well. I have raised the *Bartlett*, the *Fall Butter*, *White Doyenne* and *Winter Nalis*, and have tested many other varieties; all do well.

PEACHES.

The peach does remarkably well; no more luscious fruit can be grown in any country. I am not familiar enough to give many names. The *Early York* and varieties of the large yellow free peach do well. Many of the finest varieties are extensively cultivated. In the winter of 1874-5 the trees were mostly killed. I had a few which escaped, but they bore no fruit until the second year. I saw, however, this spring, at Walla Walla, most extensive young orchards, set since the severe winter, which this year are in full bearing, and will produce fifty to one hundred barrels each of excellent fruit.

GRAPES.

The grape does very well, and I think is as good as that of California. I cannot give the varieties, save *Black Hamburg*, the *Cal. Mission*, *Hartford Prolific* and *Isabella*; all do finely. There is no mildew.

The smaller fruits grow to perfection. So as to the melon family.

As a whole, the Walla Walla country is specially adapted to fruit growing. The long, dry, hot summers tend to develop the fruit and add to its saccharine properties; and I here predict that ere many years the fruits of that region will become cultivated throughout the Union.

The trees are unusually thrifty and healthy. The principal growers about Walla Walla are Mr. Isaacs, Mr. Jesse, Mr. Ritz and Mr. Gellarie, but almost every family raises more or less.

Truly,

J. R. LEWIS.

Report from Oregon.

PORTLAND, Oregon, Aug. 15th, 1877.

MR. P. BARRY, *Chairman General Fruit Committee:*

DEAR SIR:—I herewith send in a Pomological Report for the Lower Willamette Valley. I have not seen Mr. Dufur, as he was away for a while, therefore I send it independently, and as I had no Society's Catalogue, I could not make suggestions. What I have written is from my own experience, as I have been the worker, and afterwards part owner of the oldest and largest orchard in Oregon, and have also been extensively engaged in the buying and shipping of fruit. One year we shipped 10,000 boxes of apples, requiring 100,000 feet of lumber.

I had intended to hand the papers to Mr. Dufur, Chairman for Oregon, but not seeing him, and time being limited, I must send it to you with but little revision and correction.

Yours truly,

HENRY MILLER.

SPECIES OF FRUIT SUCCESSFULLY GROWN.

Apple, Pear, Plum, Prune, Cherry, Quince, Peach, Grape, Blackberry, Raspberry, Strawberry, Gooseberry and Currant.

VARIETIES OF FRUIT.

APPLES.

One Star.—*Rambo, Gravenstein, Saar, Northern Spy, Blue Parmain, Baldwin, White Winter Parmain, Orley, Ruel's Gemet, Monmouth Pippin.*

Two Stars.—*Red Astrachan, Gath or Warren, Esopus Spitzenburgh, Winesap, Lady, Yellow Newtown Pippin.*

Twenty Ounce, Gloria Mundi, Fall Pippin, Yellow Bell-flower.

PEARS.

One Star.—*Louis Bonne of Jersey, White Doyenne, Beurre d'Ajou, Flemish Beauty.*

Two Stars.—*Bartlett, Seckel, Easter Beurre, Winter Nils, Madeira, Pound, Passe Colmar.*

PLUMS AND PRUNES.

One Star.—*Yellow Egg, Jefferson, Columbia, Reine Claude de Bayay.*

Two Stars.—*Peach Plum, Washington, Bradshaw, German Prune, Fellenburg.*

Dagger.—*Dominic Dull, Prune d'Agen.*

Coe's Golden Drop.

CHERRIES.

One Star.—*B. Bigarreau.*

Two Stars.—*May Duke, Royal Ann, Luelling or Black Republican.*

Kentish, Late Duke, Black Tartarian.

PEACHES.

One Star.—*Hale's Early, Early York.*

Two Stars.—*Early Crawford, Golden Cling.*

QUINCE.

Two Stars.—*Apple or Orange.*

GRAPES.

One Star.—*Delaware, Iona, Diana.*

Two Stars.—*Concord, Royal Muscatine, Isabella, Creeling.*

CURRANTS.

One Star.—*Red Dutch and White Dutch*

Two Stars.—*Cherry, White Grape.*

GOOSEBERRIES.

Two Stars.—*Champion of Oregon.*

BLACKBERRIES.

Two Stars.—*Larion.*

Kittanning.

RASPBERRIES.

One Star.—*Oregon Blackcap.*

Two Stars.—*Red Antwerp.*

White Antwerp.

STRAWBERRIES.

Two Stars.—*Wilson's Albany, Triomphe de Gand.*

These two for the main crop, but others are also successfully grown to some extent.

NEW NATIVE VARIETIES.

An apple, ripening just between summer and autumn apples, say about the time of *Rambo*, promises well.

Cherry.—*Luelling or Black Republican* is a valuable acquisition; late, hard, black and very sweet; promises next to *Royal Ann*; profitable.

Gooseberry.—*Champion*, an Oregon seedling of unrivalled excellence; bush medium, like most English varieties; berry larger than *Houghton*; yellow-green, fine; prodigious bearer.

SYNONYMS.

Orley, or *White Bellflower*. *Monmouth Pippin*, or *Red Cheek Pippin*. *Fall Butter*, or *White Doyenne*. *Pound*, or *Black Worcester*. *Marie Louise*, or *Passe Colmar*. *Fellenburg*, or *Italian Prune*. *Royal Ann*, or *Napoleon Bigarreau*. *Luelling*, or *Black Republican*

OBSTACLES.

Orchards do best on high, dry lands with a northern or north-eastern aspect, the sun sometimes burning the apples on exposed southwestern situations. There is little or no lime in our soils, yet trees every year bear good and heavy crops; but the lack of lime is, perhaps, one of the causes of our trees dying in the limbs, and consequently, apples especially require heavy pruning after each year's crop; in fact the large, continuous crops are destructive to the trees, breaking the limbs and exhausting the trees and land, for where a tree has been dug up no apple tree will grow, even if fresh earth is supplied, until two or three years intervene; but plum, cherry or peach trees will do well, and pears, tolerably, on the same spot.

For a few years back the Bark Louse seemed to threaten destruction to our apple and pear trees, but this danger has passed. That anti-Bark Louse insect, (what is this insect?) appeared and destroyed myriads of cells; and also an application of lime and salt in strong doses, applied to the trunk and branches as far as could be conveniently reached into the limbs, soon destroyed them.

Most of the oldest trees, brought across the plains in wagons in 1847, are now dead or are fast dying out. Trees that I set out 23 years ago now look old and stubby, but are bearing heavy crops yet, but perhaps will not much longer. New orchards have to be set out from time to time, and

with these Oregon can beat the world in apples, plums, cherries and quinces, and is only second in pears and prunes, and not to be excelled in small fruits. Peaches bear good crops every third year, of good quality. The American grape does well; the foreign only in favored localities. A certain Frenchman is quite successful with a large variety of French and German grapes, on the south side of a high hill or *bate*. He cultivates on the renewal style, in bow form, close to the ground.

PRUNES.

Of prune trees a large number have been set out of late years; many thousands of the Italian, or *Felluberg*, have been planted. The introduction of the Aklen Dryer and afterwards of the Plummer, has stimulated the planting out of large tracts of prunes and *Peach* plums especially, and greatly renewed the setting out of apple and pear trees.

PEARS.

Pear trees are hardier than apples here, and are remarkably vigorous and productive, the *Bartlett* often bearing in the nursery row, and being always a great bearer and a valuable market pear.

PLUMS

Have no enemies, neither curculio nor black knot. Twenty-five years ago Mr. H. Luelling (who brought the first grafted fruit trees across the plains, and had the first nursery in Oregon), discovered the curculio, as he thought, and exerted himself to exterminate the pest, and whether it was the enemy or not, we have not heard of the curculio being in the valley or state since.

The Borer I have cut out of many a tree twenty-two years ago, but we have not been plagued with it for many years.

The flocks of Cedar birds have, probably, something to do with its destruction. I know that they (the birds) have something to do with the cherries.

We have no Pear Blight, but peaches curl the leaf badly nearly every spring; growing weather followed by a cold spell is the presumable cause. Oregon, so far as the Willamette Valley is concerned, is not a peach country; yet, on Hood river, in Wasco county, peaches do remarkably well, bearing every year. In Eastern Oregon, peaches do well, when the mercury does not run too much below zero.

QUINCE

Is a very fine, healthy tree, and bears good and healthy crops.

CHERRIES

Have no enemies, excepting the birds, in time of fruiting—pigeons, cedar or cherry birds, blue jays and robins, all of which are shot in great numbers; but there is not much danger of exterminating them, as our heavy forest-covered mountains continually furnish a new supply.

CULTURE AND PRUNING.

Our trees are mostly or all standards, and generally grafted with a slanting cut on pieces of roots, except perhaps cherries and peaches, the latter often being budded. The prune is often grafted on peach stocks, as the plum suckers badly, while the peach does not.

In most orchards the trees are planted 16 feet apart each way. This is far enough, as our trees do not grow over large, the heavy crops keeping them small. Formerly we dug the holes four feet in diameter and twenty inches deep, filled in with top soil; but this has been discarded, and the holes are now dug just wide enough to receive the tree readily.

One or two year old trees are preferred for setting out; the first five years or so the ground is well cultivated, generally in potatoes, never in grain; the trees then begin to bear considerably and the land is then generally put down to clover for 3 or 4 years, and then plowed and harrowed, but not cropped, and this plan may be continued.

Pruning is mostly confined to the apple, whose limbs must be yearly shortened in, or they would break with the loads of fruit; and thinning out is also well attended to, the object being to get as little bearing surface as possible, to save the tree.

Pears are not pruned so much excepting of broken limbs. Cherries are not much cut, except to shorten the limbs when they have become too long and bare.

Plums are thinned out and shortened.

Quinces are thinned out.

Peaches are shortened in to make the trees more bushy.

STORING AND KEEPING OF WINTER FRUITS.

This is done in houses built in the side of a hill, three sides in the ground, well ventilated, on shelves 4 feet deep, 6 or 8 shelves, one above another, the apples 8 to 10 inches thick on the shelves. This is the best method, though much fruit is stored in bushel boxes, not pressed, and set away in stacks, in such manner that every box has an inch or so of air. Winter pears may be treated in the same way.

Packages for shipment are boxes, generally of fir, $\frac{3}{4}$ stuff for sides, bottom and top, and inch for ends; size of box, 19 inches long, 11 inches deep and 15 inches wide, outside measure, holding a bushel of 45 pounds. In these the fruit is packed one by one in layers, and the lid pressed on tightly and well nailed. These measure 2 feet, or 20 to the ton.

STATISTICS.

California is our main market for all our late fruits, commencing with late cherries, of which the *Royal Ann* or *Napoleon Bigarreau* makes nearly the whole bulk, and in smaller quantities are shipped *Black Bigarreau* and *Luelling*. Next *Bartlett*, not often other pears, and seldom plums. Afterwards the late apples, of which the *Winesap* is first as to quantity, and the *Yellow Newtown Pippin* as to quality, these two now constituting almost the only varieties of apples profitable to ship; but in "short" years in California *Roch's Genet*, *Monmouth Pippin*, *Little Red Romanth* and other varieties are shipped in limited quantities.

HISTORY.

In 1847 a few hundred one-year old grafts planted in boxes, were hauled across the plains by H. Luelling, from Iowa. A bushel or more of apple seeds furnished stock for grafting, and a nursery was started in 1849 near Milwaukee, Clackamas county, Oregon. In 1852 Mr. Luelling went back and brought out a large variety of all fruits across the Isthmus of Panama, carried across by Indians and mules. In the same year a nursery was also started near

Salem, Marion county. In the fall of 1853 a few bushels of apples were shipped to San Francisco. In 1854 about 500 bushels, at \$1.50 or \$2.00 per pound. In 1855 over 6,000 bushels were shipped, at about \$30 per bushel, for which \$10 to \$16 were paid in the orchards. In 1856 we paid \$5 per bushel and sold for \$20 to \$30 per bushel. In the winter of this year (1856), I sold one bushel box of *Esopus Spitzenberg* for \$60, clear of expenses, in San Francisco. About the same time I sold 3 boxes of *Winesap* in Portland for \$102. This year, perhaps 20,000 boxes were shipped, all by steamers. From this time on the shipments were heavy, often from 3,000 to 6,000 bushels per steamer, and prices declined correspondingly, till in 1861 the market broke badly, California having gathered her first heavy crop from the millions of trees planted out instigated by the high prices that prevailed. The 60-acre orchard of Luelling & Meek, that cleared \$30,000 in 1860, only netted \$5,000 in 1861. From that time the varieties shipped contracted from year to year, California furnishing all the early fruit, but still buying the later or winter apples, as they keep much better here; but the varieties have contracted to five or six. The following are still shipped: *Yellow Newtown Pippin*, *Winesap*, *Moumouth Pippin*, *Gent* and *Red Romanite*.

The average price paid here for apples is about 50 cts. per bushel delivered; pears 75 cts. or \$1; quince about the same; plums bring from 1c. to 3c. per lb.

Farmers distant from market bring in but little fruit; thousands of bushels rot in the orchards or are fed to stock. Since the introduction of dryers, large and small, however, a considerable amount of dried fruit finds its way to market; apples at 6 cts. per lb., plums without pits, 12 cts. per lb.; prunes have heretofore sold fresh at 6 cts. to 8 cts. per lb.

Of the dryers the Alden is the costliest, the larger sizes costing from \$10,000 to \$16,000 to start; these have not proved a financial success. Small Plummer dryers are sold for \$150—the largest for \$600.

The *Gala* or *Waren* apple (*Belmont*) proves to be the best for drying, making a white and tart fruit, while the tree is the very healthiest of all and a great bearer. The *Peach* plum is the best for drying, and many thousands of pounds are dried. Next to the *Peach* come *Washington*, *Jefferson*, *Cox's Golden Drop*, etc.

Many varieties of the apples that were at first winter are now considered fall apples, such as *Roxbury Russet* (specks badly), *Northern Spy* (does finely, but is a long time in coming to fruit, namely 14 years), *Baldwin*, *Orley*, *White Winter Pearmain*, and others.

The *Yellow Newtown Pippin* is excellent in the fruit but unhealthy in the tree, more so than most others.

The apple trees, according to healthfulness, may be placed in this order, *Gala* (*Belmont*), *Winesap*, *Northern Spy*, *Red Astrachan*, *Lady*, *Fall Pippin*, etc.

Report from Pennsylvania.

P. BARRY, *Chairman General Fruit Committee, American Pomological Society*:

DEAR SIR:—After the failure of our State to make a creditable show of its fruits at the Centennial within its borders, while it had such an abundance wherewith to do

it, you will not be much disappointed at my shortcomings in making a report such as is due you, and as may be expected from our State. The failure was not the want of fruits, but want of proper organization. The Pennsylvania Fruit Growers' Society, organized in 1860, has done much to stimulate fruit growing over a greater extent of territory, but thus far its sessions have been held almost entirely in the eastern counties. Not half the counties of our State have Horticultural organizations, especially in the mining and lumber regions; hence the difficulty to obtain the desired information to make a full report.

From the tidewater regions of the Delaware to the summit of the Alleghany mountains, our State presents striking geological and geographical differences; consequently the reports are necessarily conflicting, which makes it very difficult to make a general report without dividing the State into sections. Were our State to be reported in sections, eastern, middle and western, as Tennessee generally is, the reports could be made much more satisfactory.

APPLES.

Apples are grown more generally than any other fruit, but our State has not marketed enough for home consumption for many years; not from want of soils adapted to the production of apples, but from want of enterprising men to engage in it as a business. True, there are few farms that have not an apple orchard, but it and its fruit do not generally receive the attention which other farm crops do.

It will, therefore, not seem strange that barrelled winter apples from Pennsylvania are scarcely seen in our markets, except possibly a few from some of the counties bordering on New York, which State largely supplies our cities and towns with late keeping fruit. The greatest drawback now is, too small a proportion of good late-keepers have been planted in the last 20 years. Another is the want of proper attention to orchards generally. The popular winter apples of New York have proven not to be sufficiently good keepers when grown in eastern and southern Pennsylvania. Hereafter, such as are better adapted to our soil and climate will be more generally planted. We may, therefore, be considered in a kind of transition state, having hardly a well authorised catalogue of apples (winter apples at least). In our northwestern counties, and on the greater altitudes, especially on the Alleghany range, the northern winter apples give much better satisfaction.

PEACHES.

Peaches are grown quite successfully in some sections of our State. Several years ago it seemed as if a large business in the peach trade would be established speedily; the dull times, in connection with the general over production in Delaware and Maryland, have however, checked the anticipated progress. With the peach trade so well systemized in those States, the progress will be less rapid; but as their soils become exhausted for that purpose, our thousands of acres so well adapted will necessarily be brought into requisition.

PEARS.

Pears, a few of which are grown on almost every farm, with more certainty than the apple, have also been grown on a more extensive scale quite successfully. There were, I believe, never better crops or finer pears grown in

this or any other State, than those produced by Tobias Martin, of Mercersburg. E. Satterthwait, of Jenkinstown, is no doubt the most extensive and successful pear grower in this State, as his exhibits generally prove. With a proper selection of varieties and soil, the only serious drawback is blight, which prevailed to such an extent in 1876 as to lessen the usual stimulus to planting. With our long list, a few good valuable winter pears would still be a valuable acquisition.

PLUMS.

Plums are still planted sparingly. The good news advanced by some, that the curculio is disappearing gradually, does not yet seem to be realized, as the stereotyped complaint continues the same as in the past. The only prospect of success is by fighting the "little Turk" in good earnest. In some sections on the eastern slope of the Alleghanys, plums continue to be successfully grown.

CHERRIES.

Cherries are not so extensively grown as they were. The common *Mazzard*, in congenial soil, of sand, gravel and slate, flourishes and fruits abundantly without much human aid, and large quantities go to waste every year. On the same kinds of soil wherever the improved kinds have been planted, they have proven worthy of more extensive planting. York continues to be the banner county for cherries in this State.

GRAPES.

Grapes are grown to some extent, but our cities and large towns are largely supplied from other States. There is no want of soils adapted to grow them, but want of enterprise, such as is shown in other States, which, if applied here would make it an exporting instead of an importing State. The many promising new varieties have, however, created a new stimulus to planting, (for the purpose of testing at least), which will possibly result in vineyard planting to a greater extent than heretofore.

SMALL FRUITS.

Except in the vicinity of cities and towns, these have not received the attention which they deserve; in the rural districts only a few make at all a business of growing them for market. The large new promising varieties of strawberries and raspberries are already making a stir, which promises to extend their cultivation.

Each additional year confirms more the difficulty, or may I say impossibility, of reporting a reliable list of fruits for the entire State. I am of the opinion that our State should be reported as eastern, middle and western. Already we have indications that *Smith's Cider* and *York Imperial* do not give satisfaction on the Alleghany range; eastern Pennsylvania has no more reliable winter apples than these. I shall in the report omit starring any, as the Pennsylvania Fruit Growers' Society's catalogue, now in progress, will be more nearly correct than any other document. New varieties are constantly forthcoming; *Mellinger*, a new fall apple from Lancaster county, promises to be one of the best of its season. *York Stripe*, not entirely new, but little known outside of York county, is one of our most promising winter apples; the fruit resembles the *Northern Spy*, but surpasses it here.

The new early peaches, *Willder*, *Saunders*, *Downing* and *Musser*, from Lancaster county, and *Cumberland*, from Cumberland county, are as fine as any others of the new early varieties, and I believe for earliness some of the Pennsylvania varieties will stand at the head.

OBSTACLES TO SUCCESSFUL FRUIT GROWING.

As to the apple and pear the Codling Moth plays the most conspicuous part. Bands around the trees to catch the larvæ, properly attended to, have proven very efficient, but it is only a few who avail themselves of the remedy; consequently their ravages have been but little curtailed in the aggregate. Peach culture sustains the greatest drawback from the Yellows, for which no certain preventive has thus far been devised, and no cure except the axe. Plum culture is still retarded by its prominent pest, the Curculio. The greatest drawback on grape culture is rot, and neither preventive nor cure has thus far been found that is reliable. Amid all these failures there is scarcely a season in which there are not some trees and even orchards that bear full crops, while failure is general, which seems to prove the possibility of overcoming climate as well as other causes of failure.

CULTURE AND PRUNING.

Although many are successful with orchards in grass, the best results generally follow cultivation (shallow), with proper manuring.

The majority of orchards are pruned up to tall stems, the more progressive, however, are gradually adopting the system of low heading, especially with peaches and pears.

Storing and keeping winter fruits have not received the attention common with fruit exporting States. Comparatively few have adopted the barrelling method, which has proven most successful, while the great majority simply gather their winter apples in heaps or in bins until threatening weather appears, when they are either buried in pits in the ground or placed on shelves in cellars.

PACKAGES FOR SHIPPING.

There is nothing in use thus far to take the place of barrels, for apples. Peaches are generally shipped in crates holding from three pecks to a bushel, and when properly packed seem to give entire satisfaction. Pears are packed in boxes or crates about the size of those for peaches, but the trade is small in our State. Huckleberries are shipped largely from the mountainous districts, generally in barrels and boxes, but do not generally receive the proper attention to bring them in good condition to the consumer. Blackberries are also shipped in large quantities, but are generally carried in too large bulk, hence they arrive at their destination in worse condition than huckleberries.

Respectfully,

Marietta, Pa.

H. M. ENGLE.

Report from Virginia.

P. BARRY, *Chairman General Fruit Committee American Pomological Society;*

Dear Sir—We have on many occasions expressed a decided opinion that the soil and climate of Virginia are well suited to the production of fruit of the finest quality,

and that nearly all the fruits adapted to the temperate zone can be grown here about as successfully as in any other section of the country. The apple, pear, peach, cherry, grape, gooseberry, blackberry and strawberry find a congenial home over a large portion of the State. In a less extended area, or where more care is devoted to them, the plum, apricot, nectarine, quince, fig, raspberry, currant and cranberry yield fair returns to the cultivator.

Of the chief obstacles in the way of success we may say first, that during the winter months we sometimes have a succession of warm days, that cause the fruit buds to swell, and occasionally the peach and apricot buds will open the last of February or early in March, when a killing frost is very apt to catch them before warm weather fairly sets in; we do not feel safe from these frosts until after the 10th of May. The apple, pear and grape crops are not so frequently cut off by this cause. We seldom suffer from a low temperature during the winter; the blossom buds are not very liable to be injured until after they open. Some seasons they seem very tender and easily killed, while at other times it is really astonishing to see them go through a severe freeze and escape destruction. Much, we think, depends upon the condition of the tree; if it has been exhausted by a large crop of fruit the previous year, it does not seem to have the vigor to withstand any great strain on its vitality, while on the other hand if it has had a season of rest or produced a light crop the previous year, it seems almost iron clad, and usually goes through safely.

Second.—The blight is the greatest drawback to pear culture; it is not so destructive here as in some sections of the country, but here, as in other places, its action is unaccountable; it may be very destructive in one orchard, and in another, close by, under apparently the same conditions, it will not show itself. There are many valuable orchards of long standing that have not suffered much by it. No remedy is known to your committee that will cure a tree when once attacked, nor is any preventive known to us. It is generally believed that the use of very stimulating manure, or cultivation that induces a succulent growth of wood or a late growth that does not ripen well before cold weather, will favor the development of blight. On the other hand the conditions most favorable for the tree are a well drained soil, and either naturally or artificially, avoiding the use of highly stimulating manure, but promoting a fair growth by good cultivation and the use of slow acting manures, and lastly not allowing the trees to overbear; this can be avoided by thinning after the fruit is formed. We do not think this malady is on the increase, or more destructive than it was thirty years ago; and one of your committee would suggest the same remedy that was, about that date, recommended to him, namely, "to plant ten trees for each one that dies of blight;" if this is adopted we feel confident that there will be no scarcity of pears in the future.

PEACHES.

A fair crop is being gathered throughout the State. The *Early Boatswain* has fruited in nearly every section, and so far as we can learn, has given very general satisfaction. It has varied in time of ripening, in different localities, from two to three weeks in advance of *Hale's Early*. It is not large, but of fair size when allowed to hang until

ripe; its beautiful color makes it very attractive and salable in the market; it is remarkably free from rot and bears transportation well; flavor good. It appears to be an excellent bearer, promising well. *Ausden's June* has not been so thoroughly tested here, but it seems likely to prove a little earlier in ripening, and somewhat larger in size than the *Boatswain*; it is also well colored and of good flavor, and will be likely to rank as one of the best of the very early peaches; we mark it as promising well.

Alexander's Early has not fruited enough to justify an opinion on its merits, but so far as we could see, there was little or no difference between it and the *Ausden*.

Early Louise ripens four to six days after *Boatswain*; is of large size and finely colored.

Early Rivers.—An excellent peach; ripening about ten days after the *Boatswain*; of good size; pale straw color, with a delicate pink cheek; too tender for transportation, but fine for home consumption.

PLUMS.

The *Wild Goose* Plum, is proving itself a valuable acquisition in the line of plums where the crop of the more improved class fails, owing to the depredations of the curculio; this plum is seldom troubled by that little pest, and now that we have learned to look for the coming of the *Wild Goose*, without much care on our part, we feel that we could not well spare it.

CULTIVATION.

It seems evident that the cultivation of the soil about fruit trees is essential to their success, and especially when young, and it is desired that they should make wood, this must be attended to; a clean mellow soil is as indispensable to a good growth of a fruit tree, as it is to successful corn-farming; if this cultivation is neglected it will soon tell in a stunted growth and unhealthy appearance of the tree.

PRUNING.

It is deemed best to train trees with low heads; and to do this, select those that are young and thrifty, but of small size; then cut the tops well back at time of planting, to induce them to branch low. In this latitude the stem or trunk of the tree, especially of the apple, pear and cherry, frequently suffers serious injury from the direct rays of the sun, or atmospheric changes, or sudden freezing and thawing of the sap, or some other cause or causes unknown to us. Very seldom is there any trouble of this kind amongst the branches, therefore it seems advisable to have the branches start low down near the ground; what little stem there is will be below them and will be kept shaded, as also will the ground over the roots. Farther north it is no doubt best to provide for the admission of the sun, light and air into the head of the tree as much as possible, but here we need shade, and find it best to do but little pruning or thinning of the head farther than to cut out dead branches and those that may cross or crowd each other very much, and to form a well balanced head.

In the absence of statistical information we may say that, until about twelve years ago, there was but little interest taken in fruit culture in this State, farther than to produce a supply for home consumption, but necessity, in this case as well as in many others, has slowly but surely developed considerable interest in the subject; the commercial value of the orchard and vineyard is now con-

sidered, and contrasting the commercial orchards and vineyards of the State twelve years ago, with the same of to-day, we think the increase has been fully five hundred per cent. The fruit grown for market in the eastern and southern parts of the State is chiefly of the early varieties, and finds a ready market at remunerative prices in the northern cities, which are mainly reached by water transportation. In Piedmont, and the western portions of the State, winter apples and grapes are the fruits most generally grown for market; the apples grown in this division of the State rank high in the scale of excellence, and the same may be said of the grapes.

Yours truly,

FRANKLIN DAVIS,

Chairman State Fruit Committee.

Richmond, Va., Sept., 1877.

Report from Western North Carolina.

ASHEVILLE, Buncombe Co., N. C., Aug. 10, 1877.

MR. P. BARRY, *Chairman General Fruit Committee, American Pomological Society:*

Dear Sir—Your kind favor some time since received, asking me to aid the Chairman of the Committee on Fruits, from this State, in furnishing a proper report to your society, I fully intended to comply with after the manner of your circular enclosed me, but sickness in my family and other causes have, up to this time, prevented me from doing so; and I suppose, by this time, a report has been made for this State; but I beg in a brief and general way to refer to this part of our State, and its adaptation to fruit culture, and hope you may not think it amiss to allow it a place in your next volume. Our elevation above tide-water, from 2,000 feet in our valleys, to 6,700 feet, our highest point (Mount Mitchell), together with our southern latitude, makes this, in my opinion, the finest fruit climate under the sun. We are free from the extremes of heat and cold, with a most delightful climate, noted for its evenness of temperature, and this, together with our long seasons for growing brings fruits to great perfection, not only as to size but in quality as well.

Notwithstanding this great bounty bestowed upon us by nature for fruit growing, that business from any intelligent stand point can hardly be said to be in its infancy yet. After a manner, however, we have raised fruit, and for the last fifty years you could hardly go to a farm house where you did not find one or two, and sometimes more, varieties of fine apples. Every one who saw them (strangers) was astonished at their great size and fine flavor, but in consequence of our remoteness from market, no one cared to raise more than was necessary for home consumption. Our surplus was disposed of by being hauled in wagons to Tenn., Ga., S. C., and the eastern portion of this State—often a distance of a hundred miles or more over rough roads—where their superiority always commanded the highest price; sometimes as much as *five dollars per bushel*. But within the last ten years railroads have been gradually approaching us, until now we are about to witness the completion of two fine railroad lines, crossing each other at this place, which will be completed in about twelve months.

Since this better state of things has been nearing us, we have been buying and planting more extensive orchards

of different kinds of fruits, of the finer and more improved varieties. A few of these here and there have come into bearing, and it has thus been demonstrated that the same varieties grown here are larger and of finer quality than they are on any other portion of the globe. To illustrate this fact, I will mention that I have seen specimens of the *Fall Pippin* that weighed twenty-six and a half ounces; *Buckingham* or *Equivalently* twenty-two ounces; *Buff* twenty-four ounces; *Twenty Ounce Pippin* twenty-four ounces, and other varieties in proportion, and this too on standard trees, and without any special care or attention.

Not only are our apples of superior size and quality, but the same may be said of peaches, pears, plums, cherries and the small fruits. Grapes rarely rot in any portion of this high elevation. There we never have a failure of apples, and on our thermal belts (about three hundred feet above the valleys on the mountain sides), the peach seldom fails, as it is free from frost, except in mid-winter. On no portion of the globe is there presented to fruit growers and pomologists such a field for their enterprise and operations. We are in the midst of the south with a market for our fine fruit in every direction, east, west, north and south. We want men experienced in the business, and with capital sufficient to go forward at once, and a few years will demonstrate what I have asserted as our merit in this respect. Our lands are cheap (from \$1 to \$10 per acre), and we have the finest climate and purest water that providence has given to any portion of the American Continent. Our inhabitants are unusually peaceable and law-abiding, and will welcome good citizens from any portion of the globe. It will afford me pleasure to give in detail any information that I may be able to impart, relative to the country, to those who may address me at this place.

Very respectfully yours, &c.,

NATT ATKINSON.

Report from Ohio.

PAINESVILLE, Lake Co., O., August 30, 1877.

P. BARRY, Esq., *Chairman General Fruit Committee, American Pomological Society:*

Dear Sir—The revised fruit list for Ohio, sent herewith, is the work of the committee of our State Horticultural Society, having Dr. J. A. Warder as chairman. We find in this State, as elsewhere, that some varieties of fruit, which were popular and reliable some years ago, have lost caste in consequence of liability to disease or winter killing, and hence are assigned a lower position or excluded from the list, while a few of the newer kinds are promoted in their stead.

Our State Society has made it their rule to recommend no new varieties for general cultivation until after they have been fairly tested in different localities; hence but few of the numerous new sorts of some promise that have been brought to our notice, are as yet recommended for a place in the lists of the American Pomological Society.

Owing to the wide range of latitude and diversity of soils of our State, the fruits which are most reliable and esteemed in one section may not be well suited for another. Hence our State Society is compiling lists for the differ-

ent districts founded on the late experience of the local fruit growers.

APPLES.

Of the varieties of apples originated in Ohio, and not now in the American Pomological Society's Catalogue, we would recommend as of special value in Central and Southern Ohio, and deserving of trial elsewhere, the *Clermont*, a winter apple of the *Newtown Pippin* class, with better growth of tree and fairer fruit, though not of quite so high quality; a good keeper and profitable for market. Also the *Kincaid*, a handsome and good fall apple, not very new, and not as well known as it deserves to be. Its origin has not yet been fully determined. One of our popular fall apples in Central Ohio, named "*Western Beauty*," in the books also called "*Big Rambo*," and, by some persons supposed to have originated in Ohio, we now think is of foreign origin, as Dr. Warder found it, in 1874, at the Vienna Exposition, and elsewhere in Europe, under the name of *Rambour de Lorraine*.*

PEACHES.

Of peaches we have several new seedling varieties which promise to be of value for their extreme earliness. Like the *Ausden*, *Beatrice*, &c., they are from seed of *Hale's Early*, and considerably earlier than that variety, with supposed less of its habit of rotting. In relation to *Hale's Early* peach, however, we wish to say that it is not a reliable standard of comparison as to time of ripening. We find trees in the same orchard sometimes differing, in this respect, from seven to ten days; and no other peach is so fastidious as to climate, soil, exposure, &c. On our sand ridges in Northern Ohio it is very good and profitable, but elsewhere quite uncertain.

STRAWBERRIES.

Of new strawberries, Ohio has produced her share; but there have been of late so many candidates for fame in this arena that we have not cared to press the claims of our favorites—at least until quality shall be allowed the precedence over mere size as the basis of merit. Referring back to our *Burr's Pine* as the standard of quality, and superadding sufficient size, firmness and high color of fruit, with vigor and productiveness of plant—we name the *Sterling* as combining more excellence than almost any other variety. It originated in Northern Ohio, and was fruited the past season in a number of other states. Its flowers are pistillate. The *Forest Rose* is a newer variety, originating in Central Ohio, and fruited there five or six years. It is of large size and fine color, with firm texture resembling *Jucunda*, with more vigor of plant and productiveness; will no doubt be popular as a market fruit wherever it succeeds. It has staminate flowers—in other respects it is not unlike the *Sterling*.

RASPBERRIES.

We are testing a number of the new varieties of the *Red* or *Autumn* class, some originating at the east and others west, without, as yet, very satisfactory results, but we think we have one or two new varieties of the *Black-cap* class that are real improvements. The "*Greasy*," originating in Indiana, is larger and finer every way than the popular *Mammoth Cluster*—berries larger and better and

*See Mr. Downing's note on this apple.

more of them to the acre, as grown in South western Ohio. Another and similar berry originating in North-western Ohio, and named *Obbs*, is also quite promising. The noted *Throck* of Missouri, as grown in Northern Ohio this season, was of strong growth and the fruit of good size, but too poor in quality to deserve commendation.

GRAPE CULTURE IN OHIO.

The past few years have not been favorable for grapes. Both new and old varieties have failed in many localities, partly from injury by the winter, but more from the rotting of the fruit in summer. This disease appears to be, in part at least, owing to an excess of moisture at the roots, as it almost always follows heavy rains in the month of June; but this is not the sole cause, and no remedy or means of prevention has as yet been discovered. Mildew of the foliage is also prevalent, to a greater or less extent, sometimes causing much damage to certain varieties, especially those of part foreign parentage. Sometimes it causes extensive injury to the Catawba vineyards on the lake shore and islands. The use of sulphur as a remedy for mildew is becoming somewhat common with our vineyardists, and there is talk among them of laying the vines down and covering slightly for winter protection, but this has not been practiced to any extent as yet.

STATISTICS.

Some idea of the extent and value of our grape interest may be gathered from the returns of our assessors, which show in round numbers, 10,000 acres of vineyards in the state, with no material change in the past five or six years. About half of these vineyards are scattered throughout the State, and range from one to four or five acres in size, these are mostly of the *Concord* variety, and the fruit is sold in the nearest markets. The other half of the vineyards are on the lake shore and islands; the larger part on the islands and points of land off Sandusky; and about seven-eighths of these are of the *Catawba* variety, designed mostly for wine making, though some of this fruit, along with *Delaware*, *Concord* and other varieties, is also shipped to the market for table use. The warmth of the water protects these vineyards from autumn frosts so as to allow a longer period than elsewhere for the ripening of grapes.

The grape crops have been deficient for several years past, and this year the cold weather in March caused destruction of fruit buds, so that the crop is less than half an average one; but very little rot or mildew has occurred, and the vines and fruit are quite healthy. In 1874, the crop in this district was nearly an average one, and the statistics are, Ottawa county, 1,607 acres of vineyards, and Erie county, 1,299 acres; the products were, Ottawa county, 5,630,734 pounds of grapes harvested, and 434,542 gallons of wine pressed; and for Erie county, 3,960,669 pounds of grapes harvested, and 251,005 gallons of wine pressed. Some of the vineyards on the main shore, and a few on the islands, were badly located, and are of little account, hence the average product of the whole is only about one ton of fruit per acre, while the better class of vineyards yield twice that amount.

EXTENSIVE PLUM CULTURE.

Within the past five years it is estimated that about 100,000 plum trees have been planted in Ohio; making,

with those before in orchards, about 150,000 trees. Of these, more than one-third are *Damnsons* of several varieties, the younger orchards and majority being the *Shropshire*. These are located chiefly on the hilly clay lands near the Ohio river in the south-western section of the State; and in Ross county where about 20,000 *Damnson* trees have been set within two or three years; and some older orchards are proving quite profitable. The "*Wild Goose*" and other native plums from the south-west, of the *Chicosa* genus, have also been extensively planted in three or four counties of South-western Ohio—chiefly Hamilton and Clermont—probably 40,000 to 50,000 trees. Five or six years ago some orchards of these plums bore good crops, and the fruit sold for high prices; but since then the crops have generally failed, and planting has mostly ceased. Of the European large plum, there has also been much planting in various parts of the State; some very good orchards in the northern counties; the older ones have yielded good and profitable crops, of the *Lombard*, *Orleans*, *Yellow Gage* and other popular varieties. The question of the reliability of the plum crop is, however, not yet decided.

THE CURCULIO

is of course the great hindrance to successful plum culture; but our large planters do not consider this a misfortune; as it prevents the markets from being glutted with this fruit and thus ensures good prices; and they find the cost of protecting an orchard, of a thousand trees or more, a trifling matter compared with the value of the crop. The method is, by the well known jarring process and the use of "catchers" of improved forms made to run on wheels, and with a contrivance by which the beetles are held in a tin reservoir until the whole orchard is gone over, which is done by a single man at the rate of a thousand trees in four hours—if the trees are not too large. It is the opinion of some, that the portable form of catcher, invented by the late Dr. Hull, of Illinois, will prove more convenient than the kinds on wheels.

The growers of *Damnsons* and native plums have not as yet found it necessary to fight off the curculios, as the insects have not caused more fruit to drop than was needed to relieve the trees from overbearing. But as the orchards grow older, it is probable the insects will become more numerous than is desirable.

PEAR CULTURE AND BLIGHT.

Pear trees have been planted annually by tens of thousands, for many years, and each year the fatal blight has blasted the hopes of hundreds of planters, soon after the trees have commenced to bear, if not before. And still the planting goes on, because a few trees, in favored localities, or from some cause, have escaped the malady. Almost every year we have the cry, *Eureka*, in reference to this problem which has so long perplexed the horticultural world, and still it remains unsolved. After all that has been discovered or published on the subject, my opinion is that there is the most hope for Ohio pear growers in the recommendation of several experienced cultivators of this fruit, contained in the *Country Gentleman*, April 19, 1877; to mulch the entire surface of the orchard with coarse manure or other litter, renewing it annually, so as to protect the roots from heat and drought in summer, and from

injury by cold in winter. Our climate and much of our soil are favorable for pears, as is shown by the instances of complete success. We do not yet despair of seeing the great obstacle overcome, and this desirable fruit produced so plentifully in our State as to be common on the tables of the million.

OUR APPLE CROPS.

The apple is of course our great staple, "all the year round." Every farm has its apple orchard, of greater or less extent, and almost every household makes daily use of this fruit during at least half of the year, excepting in seasons of scarcity or failure. Fortunately it is very seldom that a failure of the crop occurs throughout a large portion of our State; and as the orchards are vastly more numerous and extensive than are needed for home consumption, one fourth of a full crop, if at all evenly distributed, is sufficient for the wants of our people. The number of acres of orchards of all kinds in the State is reported as in round numbers, 400,000. Of this number, 100,000 may be set down as peach and other fruits, leaving 300,000 acres of apple orchards. In our fruit season, as in '72-4-6, the aggregate apple crop is stated as over 20,000,000 bushels, and in the "off years" only about two or three millions. The habit of bearing thus a full or excessive crop every alternate year is very injurious to the trees as well as damaging to the interests of orchardists. It is also an evil which perpetuates itself and cannot easily be remedied, though it may be alleviated to some extent. Last year, for instance, the apple crop was so abundant that no market could be found for the fruit, at prices which afforded any profit to the growers. The fruit too was generally deficient in size and quality owing to the excessive crop, and the trees were exhausted so as to prevent fruiting this year; hence, as a rule, there is no fruit for sale this year, and of course no profit from the orchards either year. The exceptions are where the orchards are young and kept in a growing condition, and have not yet formed the habit of alternating. This has for some years been the case with a majority of the orchards in the north-western quarter of the State, which is of most recent settlement, and orchards have borne fair crops when the rest of the State was nearly destitute, so that high prices were realized for the fruit.

THE CODLING MOTH,

the great enemy of our apple fruit, is also less abundant where the orchards are young and there is still plenty of forest. But in the older parts of the State, a large proportion of the crop is annually destroyed or rendered unsalable by this "apple worm."

The remedy proposed for this pest, by our Michigan and other friends—trapping the moths with bands placed around the trees and removing these every ten or twelve days during summer and autumn, we find requires too much work to suit the tastes of our farmers. A more easy and practicable remedy, is keeping a sufficient number of hogs in the orchard to consume all the wormy fruit as it falls; and most of the first brood of worms do fall in the young fruit, and if the first brood is destroyed of course there will be little chance for a second. A number of the best apple orchards in the State have been successfully protected by this method, for some years past, and the practice is extending each year. When the orchard is too large

for the number of hogs, sheep are turned in to assist, but only left in for a day at a time, three or four times in a week, as they are liable to gnaw the trees if left in when food is scarce.

WANT OF CULTURE.

is the next great fault with our apple orchards, especially those of the older class, and where the soil was not naturally deep and rich. Many of our orchards have been planted half a century or more, and are past all profitable fruitage, and yet the owners let them stand with all their scraggy ugliness rather than incur the little labor and expense of planting new ones. But this is not peculiar to Ohio, and such farmers will not be likely to read this report, so I will close.

M. B. BATHAM.

Painesville, O.

Report from West Virginia.

P. BARRY, *Chairman of General Fruit Committee, of the American Pomological Society:*

August 1st, 1877.

The arable lands of West Virginia, lying between the 37th and 40th parallels of latitude, ranging in altitude from 300 to 3,000 feet above the sea, diversified with mountains, valleys and rolling plains, wooded and well watered, with soils of every imaginable variety and quality, with sloping exposures to all points of the compass, have been found peculiarly adapted to the production of fruit; and it is believed that any of the fruits grown in the northern and temperate regions of the United States may find a congenial home somewhere within this diversified territory.

HISTORICAL.

The early settlers of this region, chiefly emigrants from the Northern and Middle States, established orchards of the fruits most in vogue a century and a half ago; apples, peaches, plums, pears, cherries, apricots and quinces, all of which prospered exceedingly. The products were consumed at home, manufactured into brandies and cordials, and the surplus fed to pigs and cattle. About fifty years ago, from some cause unexplained and unknown, the peach trees began to die out; at the same period there seemed to be a general decline in the spirit of fruit culture. The plum and apricot nearly disappeared from the region; cherries became more and more rare, and even apple orchards fell into neglect and decay, and there was no general or systematic effort made to renew them. This decadence, which continued until the war of 1861-65, may be attributed to a combination of natural and social causes. The life and produce of the peach tree had become so precarious that it was no longer planted. The curculio and black-knot made way with the plums, apricots and cherries, while the various insect enemies of the apple made its culture more laborious and uncertain. In addition, there was no profitable market either at home or abroad for fresh fruit, and as the growth of temperance opinions gradually encroached on the profitable manufacture of apple-jack and peach brandy, old established orchards fell into neglect, and very few new plantations were made. After the successful experiments in grape culture at Cincinnati, numerous vineyards were planted at

Wheeling and at other points along the southern bank of the Ohio river, which have been as uniformly successful and profitable as in any other in the country. This movement was feebly re-echoed in other parts of the State, but produced no permanent or important results.

Since the termination of the late war and the definite establishment of the new State of West Virginia, there has been a remarkable revival of interest in fruit culture in every section of the State. Many thousands of trees and vines have been brought into the State from the north, south, east and west, and home nurseries have also been established. Among the new plantations are found most of the approved varieties cultivated in the United States, and many of the experimental varieties more recently introduced by domestic and foreign fruit growers. Many of the experimental plantations have resulted in failure and discouragement, but the older and proved varieties are generally successful, and the spirit of fruit culture increases from year to year, improving in knowledge and experience. Owing to the lack of organization and inter-communication among the fruit growers in different sections of the State, it seems quite impossible to obtain the information necessary to present a full and satisfactory report on the subject, and we have therefore been obliged to respond to the queries of the American Pomological Society upon very limited and imperfect data, but which we believe to be entirely reliable as far as it goes.

First Question.—West Virginia produces apples, pears, peaches, plums, cherries, apricots, grapes, melons and all the varieties of small fruits and berries usually found in the United States.

Second Question.—Varieties of fruit named in order, as follows:

APPLES—SUMMER.

Two Stars.—*Early Harvest, Maiden's Bush.*

Dagger.—*Red Astrachan.*

Juncating, Early Margaret, Summer Pippin, Quincy Early, Summer Sweet Paradise, Early Strawberry, Summer Sack-no-Further, Waldora, Keswick Collin, Golden Sweet.

APPLES—FALL AND WINTER.

One Star.—*Rhode Island Greening, King of Tompkins Co., Roxbury Russet.*

Two Stars.—*Rambo, Archie, Baldwin, Yellow Bellflower, Rome Beauty, Newtown or Albemarle Pippin, Winter Sweet Paradise, Rachel's Janet.*

Dagger.—*Northern Spy.*

Egg Top, Red Streak, Davidson, Fall Pippin, Ben Davis, Hightop, Winter Pearmain, Lady Apple, Pomme d'Api, Spitzenberg, †Sack-no-Further, ‡Romanite, Pennock, Black (Detroit) Apple, Grindstone, Monstrous Pippin, Talphocken, or Fallwater, Pryor's Red.

Vanderer, in clay soil spots badly and falls prematurely.

Baker and Mason. Native varieties; well reputed winter apples. Grown in the Valley of the Shenandoah.

There are many other varieties grown in West Virginia; good, bad and indifferent fruits, unnamed, misnamed, or with local names not known elsewhere.

The apple is the standard fruit with us in all sections of

† Downing makes synonyms of certain names which are here used for distinct varieties.

the State. The growth is rapid and large, the tree healthy, long-lived and generally very productive. The fruit grown near the railroads finds a profitable market in Baltimore, Washington and Richmond. Much of it is manufactured into cider and apple-jack, both for export and home use. Dried apples are also exported to a considerable extent.

PEARS.

Among the early planters in this region the pear seems to have met with little attention. Thirty or forty years ago we never heard of a pear orchard, and single trees were few and far between. The varieties we remember were the *Early Sugar*, the *Seckel*, the *Pound*, and certain *Choko* pears, sometimes esteemed for cooking and preserving, and often good for nothing.

Since the revival, a great many pear trees of the improved varieties have been planted in West Virginia, as elsewhere, with varying results. Among these we have reported as follows:

PEARS—SUMMER.

One Star.—*Dearborn's Scalling*.

Two Stars.—*Tyson*, *Bartlett*.

Dagger.—*Doyenne d'Été*, *Rostüzer*, *Bloodgood*.

PEARS—AUTUMN.

One Star.—*Duchess D'Angoulême*.

Two Stars.—*Flemish Beauty*, *Belle Lucrative*, *Seckel*, *Doyenne Boussook*.

Dagger.—*Clapp's Favorite*, *Bonne d'Anjou*.

Fletcher.—A native pear.

PEARS—WINTER.

Two Stars.—*Vicar of Winkfield*.

Dagger.—*Luttrell*.

Bonne Clairgaut, *Winter Nelis*.

Of the above list we have personal knowledge as far as developed. The list might be greatly extended, but we have no reports from other sections.

The old-time pear trees were hardy, long-lived and productive, although of very inferior fruit. The products of the new varieties vie in size, appearance and flavor with any in the United States, but the crops are less assured and the trees are so often destroyed by blight that cultivators have already become discouraged, and some have given up planting them.

PEACHES.

Notwithstanding the general decadence in the health of the tree and the uncertainty of its crops everywhere, this fruit is still popularly cultivated in this State, the plantations being generally of native seedlings, which are hardier than the improved tree, but yield a smaller and inferior fruit. The healthiest sites for orchards are on the hill sides, several hundred feet above the streams and with a northern or western exposure. Orchards thus located habitually yield fair crops when the fruitage in the valleys is annihilated by frosts. Since 1865 large numbers by the improved varieties have been planted and fruited with flattering success. These are generally short-lived, fruiting the third year after planting and dying after they have yielded three or four crops at most. The fruit pro-

duced equals in size, flavor and beauty any to be found in this country.

PEACHES—EARLY.

In order of ripening.

Two Stars.—*Beatrice*, July 20th, *Hale's Early*, July 25th, *Crawford's Early*, August 20th.

Amsden, July 6th, *Alexander*, *Foster*.

PEACHES—MEDIUM AND LATE.

One Star.—*Troth's Early*, *Crockett's White*.

Two Stars.—*Susquehanna*, *Stamp the World*, *Harker's Scalling*, *Grosse Mignonne*, *Black Georgia* or *Blood Peach*, *Early York*, *Parie de Pomponc*, *Old Miron*, *Cling* and *Free*, *Crawford's Late*, *White Heath*.

George Ath, *Eliza*, *Morris White*, *Titon de Venus*, *Shipley's Late*, *Tippecanoe*.

Peaches are canned, dried, and distilled into brandy, very little fresh fruit being sent to market.

PLUMS.

One Star.—*Early Harvest*, *German Prune*, *Common Damsou*.

Two Stars.—*Green Gage*, *General Hand*, *Imperial Gage*, *Huling's Superb*, *Jefferson*, *Washington*, *Fletcher*.

Damsou, *Bratshaw*, *Bingham*.

The plum grows healthfully in West Virginia, and when protected from insects and diseases yields bountiful crops. It is not extensively planted, as its products are not generally considered remunerative.

NOTE.—Varieties which are not specially reported, or which we have not proved personally are not marked.

CHERRIES.

Cherries of all the older varieties, *Morellos*, *Hearts Dukes*, and *Bigeareans* are generally disseminated in West Virginia, and are usually found hardy and productive. In the forests the indigenous "Wild Cherry" is very common, and grows to extraordinary size. My own experience in the finer varieties of nursery trees has not been encouraging, having made three several plantings within the last ten years of the *Black Tartarian*, *Yellow Spanish*, *Napoleon Bigarreau* and *Belle de Choisy*, without being able to get a single specimen of fruit or to preserve the life of a single tree. Having no reports from other quarters, I am unable to give any intelligent information on the subject.

APRICOTS.

This fruit is but little cultivated. A few amateurs have tried it with indifferent success, on account of insects and late frosts. The *Moorpark*, *Birds*, *Early Golden*, *Roman*, *Royal* and *Turkey* are the varieties usually planted.

QUINCES.

This fruit is but little planted, and so generally neglected where grown that the trees produce poorly and soon die. With reasonable culture the *Apple* or *Orange* quince grows well and produces very handsome fruit.

GRAPES.

The most common and universally distributed vine in the forests of West Virginia is the wild grape of several varieties, of which are the *Fox Grape*, *Summer Grape*, and

Frost or Chicken Grape. These vines grow to enormous size and are immensely prolific. The improved grape has been cultivated here with more spirit and intelligence than any other fruit of recent date. Farmers, and all who have gardens, plant for domestic use, but the larger vineyards for wine and market are generally found in the western part of the State on the Ohio river and its tributaries. Of these we have no report, and very imperfect knowledge from personal observation.

GRAPES—FOR THE GARDEN.

One Star.—*Hartford Prolific, Creeping, Maryland.*

Two Stars.—*Concord, Delaware, Rebecca, Allen's Hybrid, Rogers' Hybrids, Gathe, Massachusetts, Wilder, Ludley, Agawam, Salem,* are all very fine.

GRAPES—FOR VINEYARDS FOR WINE.

Two Stars.—*Virginia Seedling, Delaware.*

Ives' Seedling, Herbermont, Concord.

The *Isabella* is being discarded, as superseded.

The *Catawba* rots, mildews, and fails to ripen, and is generally discarded.

SMALL FRUITS AND BERRIES.

Cranberries are found growing wild in the high, swampy glades of the Alleghany, whence they are gathered for market. I have never heard of their being cultivated in this State.

Strawberries, Raspberries and Blackberries are also indigenous all over the State, the two latter competing with the cultivated varieties in size and flavor.

Most of the popular and improved varieties of strawberries here attain the highest grade of excellence.

Of raspberries, none but the improved *Black Caps* are perfectly hardy here. All other varieties, whether or not reputed hardy, require some protection in winter.

Of blackberries, we have cultivated *Wilson's Early, Lorton* and *Kittatinny*, and frequently find wild varieties superior to either in size and flavor.

The whortleberry is the most esteemed and generally disseminated of our wild fruits. On the summit plains of the Alleghany mountains, there is a variety which bears its fruit in large trusses, the individual berries three-fourths of an inch in diameter. It hangs long on the bushes and we have found it a very pleasant and nourishing fruit on the 15th of October. We have no knowledge of any attempt to transplant or cultivate this or any other variety of the whortleberry.

Third Question.—We know of no new native varieties of fruit, except two or three noted in the general list.

Fourth Question.—There is generally so much confusion and uncertainty in the nomenclature of fruits here that we have no basis for a list of synonyms. Where we ask the name of a fruit the usual answer is, "I don't know."

Fifth Question.—The obstacles to fruit culture here are the same as in the Middle States generally:

1st. A variable and uncertain climate, winter thaws and late spring frosts, sleet and long continued rains in summer—never from drought.

2d. From the insects and diseases common to the whole country, the apple has the Borer, the Tent Caterpillar, the Canker Worm, the Bark Louse, the Woolly Aphis, the

Apple Worm (Codling Moth); also a blight which suddenly kills twigs and often large limbs. The pear suffers from the Fire Blight, the Tent Caterpillar, Canker Worm, and the Curculio and Apple Worm in the fruit.

The peach tree dies of the Yellows and the Peach Borer. The Yellows seem to be more fatal to the native seedlings than to the improved trees from external nurseries. The Borer is the common enemy and generally triumphs after three or four years. Lime, ashes, tanned paper, ley, salt, and hot water are all quite futile against its attacks. The knife and wire used with care and vigilance are the only efficient remedies.

The fruit of the peach while ripening is often destroyed by birds, hornets, wasps, yellow-jackets, honey bees, and a certain small, olive-colored beetle which buries itself in the ripening flesh.

The plum trees suffer from the Black Knot, which is readily cured by the application of the knife. An ugly worm an inch or more in length is sometimes found in the heart of the young limbs about midway between the trunk and the terminal bud. The limb above the worm turns black and dies. The knife is the ready and efficient remedy. The bark of the trunk and principal limbs cracks and exudes quantities of gum, sometimes killing the tree but more frequently healing of itself without serious apparent injury—the cause and remedy unknown. Among the improved varieties, large limbs and portions of the tree blight and die without apparent cause. We know nothing either of the cause or the remedy.

The curculio, the common enemy of the plum fruit, can be managed by vigilant shaking and hand-killing.

In some seasons the fruit of some of the improved varieties, when full grown and maturing, rots and falls without apparent cause. In very wet seasons the finest plums sometimes mature in apparent health and are found entirely lacking in flavor and are uneatable.

The cherry tree, like the plum, has the black knot. Its bark cracks and exudes quantities of gum. It blights in the limbs and dies sometimes without any ostensible reason.

The quince tree is annoyed by borers like the apple. It is also attacked by a blight which begins in the terminal buds and blossoms, and extending to the trunk kills the tree. We know nothing either of the cause or the remedy.

The grape vine is afflicted with blight—mildews, premature falling of the leaves. Sulphur dust is supposed to be a remedy. The green grapes rot and drop off early; they ripen and rot, with a very disagreeable bitter flavor. The cause is supposed to be too much rain and damp weather; no remedy is known. When ripening, some varieties crack and are destroyed by bees, wasps, etc. Sometimes our crops are nearly destroyed by insects of the bee tribe. Whether they make the primary attack, or are attracted by the cracked fruit, I have never been able to decide; but am of the opinion that in dry seasons they are responsible for the destruction of the ripening grapes.

In regard to the obscure constitutional and supposed insect diseases which destroy so many of our trees we know nothing either of causes or remedies, and have no theories on the subject. Having experimented in most of the nostrums and preventives against the noxious insects which commonly infest our fruit trees, we have found them all futile and worthless, and can only rely upon *hand-killing*

Sixth Question.—We have no uniform or received system of culture or pruning. This varies with the soil, the locality or the fancy of the individual.

Fruit trees are usually pruned only to shape and thin their limbs. The peach tree is sometimes treated by the "shortening in" system recommended by Charles Downing, and greatly benefited thereby. Apple and pear trees are pruned at all seasons indifferently, when they are young and forming. When full grown they are rarely pruned except to remove a dead or broken limb.

Plums and cherries are rarely pruned at all, except for the before-mentioned reasons.

There is the same variety in the modes of culture. Some plow and crop their orchards until the trees come in bearing, then turn them to grass. Amateurs and gardeners habitually cultivate and manure their trees with lime, ashes and stable manure, but we have no systematic reports which will enable us to judge of results.

AS TO GRAPES.

Most of the proprietors or managers of vineyards being Europeans (Germans and French), the grape was formerly cultivated as it is in Europe—on short stocks tied to stakes, and fruiting near the ground. Latterly there is a tendency to allow the vine more scope, on larger trellises, on walls or on trees (as in Italy), and this method is certainly preferable for the *Concord* and other strong growing native varieties.

Seventh Question.—Winter apples are stored in cellars, garrets or vacant rooms, generally in heaps; sometimes on shelves or in boxes or barrels. They are sometimes pitted in the ground and covered with straw and earth. We have no reports to enable us to judge of results. We have kept the *Winter Sweet Paradise* packed in hay until June 1st, and in *ground plaster* until July 10th; the fruit was then sound and in admirable order and would have kept longer. We have no knowledge of any of the methods of keeping grapes, other than packing in dry boxes and storing them in a cool room: some pack in sawdust and cotton.

Eighth Question.—Apples are generally shipped in barrels—grapes in paper or wooden boxes.

Ninth Question.—We have no reliable statistics on the subject of fruit culture, owing to the lack of organization and inter-communication among the fruit growers in the State.

Yours very respectfully,

DAVID H. STROTHER,

Chairman of Fruit Committee for West Virginia.
Berkeley Springs, West Virginia.

ADDITIONAL REPORT.

BERKELEY SPRINGS, W. Va., Aug. 10th. 1877.

MY DEAR SIR:—Your note of acknowledgment for my Report contains a query which I will answer by a supplement to the Apple List, and some additional information received since:

Archie.—Among the old apple trees in this county. It is hardy and a great bearer; very mellow, and if carefully handled lasts until Christmas; good for drying and superior for cider.

Quincy Early.—A sweet, good apple.

Waldon.—A very large and superior apple; good for drying.

From Report of ex-Gov. F. H. Pierpoint, Fairmount, Marion county, West Virginia.

Summer Suck-no-Further.—Large size, roundish, pale yellow, flesh white, tender, with sprightly sub-acid flavor; a strong, hardy grower and regular bearer; one of the best summer apples we have in every respect: July and August.

Davidson.—Medium, yellow, first quality; October. Introduced from Thomas Allan's nurseries, Winchester, Va.

Report from William Moray Raudolph, Moorfield, Hardy county, W. Va.:

Shell, Seymour Black, Dan Pry, Mammy Apple.—Native apples of the South Branch Valley, which are prolific, hold their fruit well, and are sound, good keepers.

Additional apples commended from that region: *English Red Streak, Five Square, Sweet Bough.*

Report from A. M. Wood, Lost River, Hampshire Co., W. Va.:

Born Apple, Try Me, Red Winter, Striped Winter.—Fall and winter native seedlings, which are of best quality and the proprietor would like to see them tried elsewhere.

This gentleman (Mr. A. M. Wood) has tried sowing tansey about his peach trees, and mulching them with cut tansey, which he thinks protects them from the Borer.

I am, very respectfully,

DAVID H. STROTHER.

Report from Iowa.

P. BARRY, *Chairman General Fruit Committee, American Pomological Society:*

Dear Sir—As chairman of the committee for Iowa I appointed the usual number of associates, two of whom have responded, Mr. James Smith of Central Iowa, and Mr. Suel Foster of Eastern Iowa, whose reports you will find inclosed.

The fruit crop of 1876 was the heaviest known in the history of our State—in contrast with which we place 1877 with almost no crop at all. Last year many thousands of barrels of apples were shipped abroad from the several packing points, while this year there is not one-fourth enough to supply the home demand. This failure, so general, cannot be attributed to any one cause alone, but what the combination consists of we hardly dare to venture an opinion. Exhaustion of the tree from overbearing, a severe winter, heavy rains while in bloom, have in all probability had something to do with it. In looking over the Catalogue of fruits published by the Society we find but few changes to recommend, and as Mr. Smith, of Des Moines, says, "this year is no time to alter stars in the Catalogue." But upon my own responsibility I take the liberty to offer the following amendments, and in this I am governed mostly by the list as altered by our State Society at its last meeting, and besides there are some errors in the Catalogue which I think are typographical mistakes; such as starring the *Red Stripe* for Missouri; it should be Iowa; and then the *Shockby* never should have been on the list for this State.

We would give two stars to *Dyer* and *Red Stripe*; the latter cannot be too highly recommended for family use;

it bears every year and ripens in succession for six weeks, beginning about July 15th; it is of medium size, always fair, quality good for cooking and eating.

White Pippin should have one star, and the following should be stricken from the list:

Pryor's Red, Shockley, Roxbury Russet, Early Chandler and Lansingbury.

Respectfully submitted,
G. B. BRACKETT.

To HON. G. B. BRACKETT, *Chairman Fruit Committee for the State of Iowa:*

I labor under several embarrassments in attempting to make a satisfactory report on the subjects, or branches of the subject, to do it in a sufficiently condensed form.

APPLES.

1st. *Species*—*First, Apples*—This is our greatest and best fruit, from August to August. It should be upon our tables in some form every day. Its usual cost is about 30 cts. per bushel, and can be kept till midsummer for \$1 to 1.50.

In addition to apples we have strawberries, raspberries, cherries, grapes and pears, and peaches to a limited extent.

2d. *Varieties*—You will please copy our list of the State Horticultural Society for Central Iowa. I would strike out *Early Pennock*, and add *Abrson's Early*. It is not generally known—a much better apple than *Early Pennock*, earlier, coming between *Tetefsky* and *Oldenburg*. Having the *Oldenburg* (which is three times more productive) we do not need the *Pennock*.

In the fall list, I would strike out *Chautango Strawberry*, and add *Goff* and *Dyer*. The *Goff* is a September apple, ripening with the *Benoni* and *Dyer*, a very large, fair, tart cooking apple, and exceedingly productive alternate years. The trees have so far proved as perfect as the *Duchess of Oldenburg*. I would also strike out *Ramba*, and add *Gros Pommier* (also called *Haus*).

Winter List—I would strike out *Lansingbury, Virginia Greening*, the fruit being inferior to the *Ben Davis*, and that is as low in quality as we ought to go.

3d. *New Varieties*—There are many in this part of the State, but I am not sufficiently acquainted with but one to recommend of my own knowledge, the *Wealthy*, and with that I have but six years' acquaintance. The trees in my nursery commenced bearing at three years, and have borne each year since, even this year, whilst nine-tenths of our orchard trees have no fruit. It is true this is not a native of Iowa, but of Minnesota, having stood the winters there for fourteen years it places it sufficiently hardy for Iowa. It is very important that we improve our orchards by getting more healthy hardy and productive varieties, and I am quite confident that the *Wealthy* will prove very valuable in all these respects. My experience with the *Wealthy* confirms Chas. Downing's description of the quality of the fruit, "flesh white, fine grained, stained with red, tender, juicy, lively, vinous, sub-acid, very good; core, small." In Minnesota it is a winter apple; here, late fall and early winter.

CHERRIES.

Early Richmond and *Late English Morello*. The latter is rapidly coming in favor.

STRAWBERRIES.

Wilson, Green Prolific and *Darwin's Prolific*. They require a good deal of care, and pay amply for the care and labor. For a few years past their market value has been ten to twenty cents a quart.

RASPBERRIES.

Doolittle, Mammoth Cluster, Philadelphia and *Turner*. The latter comparatively new, a native from Illinois, which is proving best of all the varieties; hardy, productive, large, handsome light red, rather soft for carrying, but of most delicious flavor. Suckers greatly, which will have the good effect of spreading a good thing at cheap rates.

BLACKBERRIES

generally winter-kill, and the briars are too sharp to make it pleasant to cultivate and pick the fruit. Mr. John Barnard, of this place, has a variety called the *Barnard*, very hardy and productive, of medium size and quality.

GRAPES.

I think the grape second to the apple, for ease of culture, abundance and cheapness. The *Concord* continues to be the main grape, and the main grape continues to be the *Concord*. It does not continue long enough, loses its flavor and drops from the stem soon after ripe. The *Ives* does better with me in this respect, and so does the *Clinton*, which is a better grape for canning. A new seedling grape originated with Mr. Doder, some years ago in Washington Co., in which we expect an improvement on the *Concord*, in quality and keeping. It is called *Doder*, and by some, *Washington*.

OBSTACLES.

5th. Cold winters, dry atmosphere. Mulching and wrapping the trees with building paper is a good remedy.

CULTURE AND PRUNING.

6th. Plow the orchards; everything needs clean mellow culture. Prune in the spring before the trees leaf out, or at time of leafing out.

STORING AND KEEPING.

7th. Store in cool dry cellar; and in early winter wrap each apple in paper and pack in tight barrels or boxes.

PACKAGES.

8th. One quart boxes or baskets for berries; ten pound boxes for grapes; and barrels that will hold three bushels of apples, when well packed and pressed in. I packed in this way last fall in flour barrel size, and the fruit dealers told me that they measured out three bushels.

STATISTICS.

9th. About 50,000 bushels of apples were marketed in Muscatine Co. last season, which was by far the largest crop we ever had. Many were ground for cider and vinegar. Our market is good by shipping north and west, and we get twenty to fifty cents per bushel, which makes the orchard profitable.

SUEL FOSTER,
Muscatine, Iowa.

DES MOINES, Iowa, August 2, 1877.

I have been three days looking at the fruits and fruit prospect, and have to report that this is the first general failure of fruits for the last twenty years, or since we have had fruit trees, vines and plants in bearing. Beginning with the strawberry, it was the lightest crop we have ever had. *Dourmers* produced the principal crop, though *Charles Downing* gave very general satisfaction, and *Green Prolific* making many friends; *Wilson's Albany* is generally discarded. We have many other sorts in cultivation, but not sufficiently tested to take position in our catalogue. We had a two-thirds crop.

RASPBERRIES

were almost a total failure. The fruit set a fair crop, but notwithstanding we had all the rain we wanted, the fruit dried up before or soon after it set—quarts only were gathered where bushels were expected. *Mammoth Cluster* and *Doolittle* are most esteemed, though *Saucea* is becoming very popular. Many others are on trial, but not sufficiently tried to be starred.

CHERRIES

were a total failure. *Morillos* only in cultivation; *English Morillo* and *Early Richmond* only giving satisfaction; *English Morillo* bidding fair to outstrip *Early Richmond* as the main crop.

GRAPES

The grape is among the most important fruit crops we have; the *Concord* well nigh superseding all others, *Hartford Prolific* and *Delaware* standing next highest on the list. *Delaware* this season produced a good crop where it has had proper culture. The *Janesville* is perfectly hardy, bears well and is quite a fair grape; many others are in cultivation, but require more time to establish character. *Clinton* has been discarded on account of its liability to insect injury. About one half a crop this year; bunches small, the first buds having been destroyed by frost.

PLUMS

as usual are a failure.

PEARS

as usual are blighting, but not producing the usual amount of fruit. In three days search I only found one tree with a fair crop of fruit; that a *Flemish Beauty*, a sort that gives more promise of success than any others.

APPLES.

The apple this year has but a very light crop, and almost every specimen has a worm in it. This year is not a time to alter stars in our catalogue if they were right two years ago.

J. SMITH.

Report from Nebraska.

P. Barry, Esq.:

DEAR SIR:—In the performance of my duty as Chairman of the Fruit Committee for Nebraska, I submit the following report:

The last two years have been good years for apples throughout the State, but not so good for other varieties of

fruit. The apple crop of last year was a very good one, but not so good as this year. We have an unusually large crop and the fruit is of the best quality.

NEW VARIETIES.

The *Otoc Red Streak*, is a Nebraska seedling of great promise; it is a late fall and early winter apple, of the best quality and an early and abundant bearer. There are two seedling peaches which originated with Mr. J. H. Gregg, of Wyoming, in Nebraska, which are very fine varieties, one ripening about July 20th, and the other August 1st; both ripening with us before *Hale's Early*.

CHANGES NECESSARY TO BE MADE.

The following which have one star in the last report should have two stars, to-wit: *Red Astrachan* and *White Winter Parmatin*.

Perry Russat should have but one star, and *Yellow Bell-flower* should be stricken from the list.

The following should be added to the list on trial: *Matan* apple, *Primate*, *Western Beauty*, *Ohio Nonpareil*, *Shockley* and *Cole's Quince*.

The only insects that are doing us any damage are the Codling Moth and Flat Headed Borer.

Twig Blight has prevailed to some extent and has injured some of our orchards very much.

The Rotten Root has prevailed to some extent and has injured some orchards. The best remedy yet found is wood ashes put around the trees; lime and sulphur have been used to good effect.

Pear Blight has been very bad for several years; it has destroyed some orchard almost entirely. We are trying salt with good results; trees where the salt has been are doing much better than those that were not salted.

In conclusion I would say that we have demonstrated that our State can grow fruit equal to any State in our latitude, both in quality and appearance.

I would like very much to be with you at Baltimore next month, but it will not be possible.

Yours Truly,

J. H. MASTERS,

Chairman Fruit Committee for Nebraska.

Report From Kansas.

P. Barry, Esq., Chairman General Fruit Committee American Pomological Society:

DEAR SIR:—In compliance with your request, and in conformity with the custom of the above Society, I herewith send you my report as Chairman for the State of Kansas.

SPECIES OF FRUITS.

I would remark that our State is about as successful in the cultivation of what are called the large fruits, such as the apple, pear, peach, apricot, plum and cherry, as any one of the Western States, so far as I am informed. Yet notwithstanding, we are surrounded by many discouragements in regard to the cultivation of all, but more especially in regard to the pear and the plum.

In regard to the small fruits, such as the gooseberry, raspberry, blackberry, strawberry and currant, we are reasonably successful, excepting with the currant.

VARIETIES OF FRUIT.

Under this heading we are requested to state what particular varieties of each species of fruits are shown by *experience* to be adapted to the soil and climate of Kansas. This is an embarrassing question. Our State, as such, is not yet out of its teens and cannot, of course, have any large amount of or long experience in regard to anything, and more especially in regard to the subject of fruit growing, which requires more than an ordinary lifetime to make such experience reliable; we must, nevertheless, be content to approximate as nearly as we can towards something reliable.

APPLES.

Of the apple species we would say that, as far as our experience goes, and as far as we have the experience of others, the *Early Harvest** is one of the leading summer varieties. We have also another summer variety introduced into this State from Kentucky by the writer, which now promises to lead all other early summer varieties. It is called the *Summer King*** This variety commences ripening in advance of the *Early Harvest*, and continues ripening in succession till into September. The tree is a fine symmetrical grower, a certain and profuse bearer, but tardy as to time of coming into bearing. We have now, July 16th, been gathering ripe fruit from it for more than ten days.

The *Carolina Red June** (or *August*), is generally esteemed here as reliable.

The *Maiden's Blush*** although generally set down as an autumn variety, commences ripening in Kansas the middle of August, and should be classed with the summer kinds. This apple, if I were called upon to select two varieties to run through the whole season, from early July to October, would be one of them, and the *Summer King* the other. The *Maiden's Blush* will ripen from the 15th of August to the 15th of October, and with proper care can be kept till December. It is an apple of great beauty, a fine cooker and good to eat when fully ripe. Altogether reliable here.

As fall apples, the *Rambo*, the *Fulton* and *Fall Sweet*, are reliable.

As winter varieties, the *Winesap*, perhaps, stands for all purposes, at the head of the list. The *Ben Davis*, *Smith's Cider*, and *Raele's Genet*, are most reliable and most profitable.

PEARS.

The *Bartlett* and *Duchesse* are considered most to be depended upon.

PEACHES.

The *Hale's Early* is the most reliable, although on rich locations liable to premature decay. The extra early new varieties recently introduced, such as the *Lashen's June*, the *Alexander*, the *Honeywell*, the *Wilder*, *Warder* and *Saunders*, have not been sufficiently tested to warrant any definite statement about them.

PLUMS.

The *Wild Goose* is the only one which gives any promise of success.

APRICOTS.

The *Breda*, as far as I know, is the only tolerably reliable variety.

SMALL FRUITS—GOOSEBERRIES.

The *Houghton* gooseberry is reliable.

RASPBERRIES.

The *Miami Black Cap* raspberry and the *Philadelphia* raspberry are somewhat liable to be winter-killed, but by judicious management can be carried safely through the hardest of our winters, and from their fruitfulness and ready selling in the markets will justify a very considerable amount of care.

BLACKBERRIES.

The *Kittanning* is the most reliable. The *Lorton* variety is perhaps as good in every respect but one, and that is it is more liable to be winter-killed. But by cutting back in mid-summer this defect can be almost entirely overcome.

STRAWBERRIES.

The *Wilson* is, so far as my experience goes, the only reliable variety cultivated in this State.

CURRANTS

are generally a failure here. Some persons succeed in raising them, but the failures as compared with the successes are as ten to one. We have much yet to learn in regard to the successful culture of this useful fruit.

NEW VARIETIES OF FRUITS.

As to new varieties of fruits that are native to this State, I know of none that I could safely recommend.

SYNONYMS.

This inquiry can have but very little interest, except as applied to the apple. There are not many apples here that are known under different names. The *Mc. Afee's Nonsuch* used to be known under some twelve to fifteen different names, but is now known only under the above, its proper name.

The *Ben Davis* is known as the *New York Pippin* and *Hutchinson's Pippin*, but these two last are now pretty generally laid aside.

OBSTACLES TO SUCCESSFUL FRUIT CULTURE.

The first obstacles in the way of successful fruit culture in this State in regard to soil is, that the land is *generally* too rich, causing the trees to grow too rapidly, thereby rendering them liable to bark bursting at the ground in some varieties, especially while the trees are young. The trees also make a very large amount of young wood in the early part of the season, caused not only by the richness of the soil, but also by the rains of spring and early summer. The latter part of our seasons is unusually dry after the snows are melted, and is also sometimes extremely hot, the mercury frequently ranging from 92 to 98 degrees in the shade.

The great richness of our soil coupled with our usually wet springs and early summers, together with the intense heat of summer and early fall, renders our trees extremely liable to sun scald on the trunks, giving rise to the flat headed borer, and also to twig blight in the newly made wood of the branches.

The *insects* that are most inimical to successful fruit culture here are the codling moth and the beetle of the round-headed borer. These are both quite formidable enemies here. The remedy known to me for all these evils, is in selecting a site for an orchard, to select that which is comparatively thin, if this can be done with the other necessary surroundings. If, however, the land should be rich, give but little cultivation and that continued not later than the middle of July. A crop of corn among young fruit trees is, perhaps, the very best crop that can be raised, as its cultivation ceases at about the right time for the trees, and it will also appropriate a great part of the plant food that would otherwise go to the growth of the trees and thereby lessen their luxuriance, a thing much to be desired here. Against the extreme wetness of the early seasons, we can only guard by under-draining (which would deter most men from planting), or by selecting a location which has a natural surface drainage.

As a remedy against the extreme heat of summer, I would in planting reduce the top as much as the tree would safely bear, to lessen the force of the wind upon it until it can make fast hold in the ground by its roots, and also lean it a few degrees to the south-west. These precautions will, in most cases, save the trunk from sun-scald, and consequently from flat-headed borers. Whatever will hasten an early ripening of the young wood will go a great way towards preventing twig blight. To obviate all of these I would plant at only one-half the distance I intend the trees to remain permanently, and have them with low heads at first. By these means they afford a mutual protection to each other, a thing also highly necessary in this windy climate.

As a preventive or as a remedy against the codling moth, I know of nothing better than letting hogs have free range in the orchard to eat the premature fallen fruit. Trapping the moths while climbing the trees is tedious, and no more successful than the hogs.

Against the round-headed borer I use an application of lime and soft soap, in the proportion of one-third of the former to two-thirds of the latter, brought to the consistency of common whitewash, and applied with a whitewash or paint brush in early May. To make the application more effectual, remove the earth from around the tree for a few inches down, and after the wash is applied place it back again. Thus applied for a foot or so up the trunk it will, in almost every case, either prevent the beetle from depositing her eggs there, or, if she should do so, the eggs will not be likely to hatch, nor would the grub, if hatched, be likely to penetrate into the tree. If, however, a few or many should be found to escape this precaution, a knife and a barbed wire will bring them out.

There are many other preventives and remedies in use, but I hold that those recommended above are most generally successful here.

CULTURE AND PRUNING

Here I am again met with difficulties, because we are

not old enough to have proven any system either of culture or pruning as well established by experience. I must, as before in regard to varieties, content myself with an approximation.

With regard to cultivation, what I have already said while speaking of the obstacles in the way of success, must be taken as applicable here. In addition, however, to what I have already said on this point, I would remark, that after trees have come into successful bearing they should be treated, both in respect to the cultivation and pruning, pretty much as a man would treat a family of grown up children: in some respects all alike, but in other respects each one according to his individual constitutional peculiarities. If, in planting an orchard, we would plant all of one variety, this question of cultivation of the soil and pruning of the tree would be very much simplified. Under such circumstances it would not be hard to ascertain what kind of soil best suited such single variety, provided all were growing each on its own roots, nor would it be difficult to learn what amount of pruning, if any, and of what kind, best suited that single variety. But, unfortunately for the fruit growing interests of the country, most men when planting an orchard think they must have a large number of varieties, and this delusion is not discovered until at least half of a man's lifetime is spent in a *fruitless* effort to have fruit. It is known to every parent that in a large family of children every one has a temperament and bias of its own, and that any attempt to govern all by the same inflexible rule does not always give the best results. But if he could know just how to suit each individual case the very best results would crown his efforts. So with an orchard or family of fruit trees, if we could know just what each one really required, the most perfect success would be the result. So then no specific rule of universal application for even a single neighborhood can be laid down; each variety must be cultivated and pruned according to its peculiar constitutional wants. When we shall have learned this lesson well we shall have made a long stride in the direction of *successful fruit growing*.

All fruit trees require in general terms pretty much the same kind of food; and yet all differ in some minute particular to produce in each its peculiar color of skin and flesh, together with its flavor. When we can know just these peculiarities we shall have learned a valuable lesson. Each tree requires a different amount of pruning according to its peculiar habit of growth and for different purposes, so that each grower must be guided by his own judgment as to what effect he wants to produce. One thought in pruning should, however, be always kept in view, and that is, that a reasonable amount and a fine quality of fruit is the object of everything we do in an orchard.

STORING AND KEEPING WINTER FRUITS

Upon this subject I cannot say that any general system has been adopted. So far as I am informed, the usual practice is to put them in cellars, either in barrels, boxes or bins. My own method is to store in my cellar in bins about six feet long, coming one after another the whole length of the cellar, one and a half feet deep and about three feet wide, one above the other, from within two feet

of the floor to the ceiling. Tier after tier is thus made until the cellar is full, leaving sufficient room to pass around them freely. I cover the tops of my fruit bins with newspapers to prevent them from wilting. By this method my fruits—I mean my apples—keep quite well; are easily got at and are easily sorted, when this becomes necessary.

PACKAGES FOR FRUITS

For apples I believe the most successful method of packing for distant markets is in barrels perforated with several holes of about an inch diameter; the fruit being laid in carefully with the stems on the head at the bottom until the head is completely covered and the apples closely packed. After this the barrel is filled carefully and shaken two or three times gently so that the fruit comes an inch or so above the upper end of the barrel. Then the head is put on and gently pressed with a screw till the head fits into the chime. The hoops are then put on and securely nailed. Thus packed they will safely ship thousands of miles. Pears are usually packed in boxes holding about one half a bushel each, with the necessary ventilation. Peaches in one third or one-fourth bushel baskets, or one-third bushel boxes lathed at bottom and top. Strawberries and raspberries are packed in crates holding twenty-four one quart boxes. Sometimes raspberries are shipped in pint boxes. These methods are all successful.

In conclusion allow me to say that I would have sent my report sooner, but was waiting to procure the fruit statistics of the State, but have been unable to do so up to this time

Very respectfully,

WM M HOWSLEY.

Report from Utah.

Both last year and the present year fruits have been more or less injured by late frosts in various localities. To this trouble we are annually liable, especially in narrow valleys where high lands or mountains arise near, the danger being greatly lessened in wide valleys and open country.

The present season, peaches, plums, apricots, almonds, nectarines and cherries were killed by frost in my locality, and in some instances, apples, pears, and even berries, have totally failed; yet in many localities the hardier sorts have made from a few to half crops or more. The Counties of Millard, Utah, Salt Lake and Davis have fair crops in some localities, while in others near, there has been a failure. Washington and Kane counties have suffered less than any others, and have fair crops of most varieties, but the great heat and total absence of rain the whole summer has been a great detriment to a full development of size and flavor

KINDS OF FRUIT GROWN

Of varieties commonly grown in Southern Utah, and which seem hardy and adapted to our alkali soil and arid climate, may be named apples, pears, peaches, plums, prunes, nectarines, apricots, crab apples, almonds, figs, pomegranates, currants (native), goosecherries, mulberries, blackberries, raspberries. Strawberries do fairly if plenty of water is given the plants. Cherries grow rank and blossom very full and handsomely, but bear but few solitary samples of fruit. Grapes, both foreign and native, are fully at home and ripen off with the highest possible flavor. The

pear also appears here to find the conditions for growth to perfection both in tree and fruit; trees often fruiting at only three or four years old from seed. The almond and mulberry are also quite as precocious and as much at home.

In localities to the north, in greater altitudes, cherries, and all the berries named, grow to great perfection; and the fig, almond and pomegranate are too tender to be relied upon, and but few varieties of foreign grapes will stand the rigors of frost, and ripen their fruit with proper flavor; but most of the native varieties are healthy, and produce as good fruit as countries east on like parallel, and it may be here noted, that of many foreign varieties that have been tried in our frosty regions, the *White Roman* is superior in endurance, health and quality of fruit.

VARIETIES BEST ADAPTED.

Apples—Early.—*Early Harvest, Astrachan, Early Joe, Red June, Sweet Bough.* Summer—*Greenstein, Washington Strawberry, Channing Strawberry, Summer Queen, Williams' Favorite, Porter, Roxbury Russet, Twenty Ounce, Golden Pippin.* Winter—*White Winter Pearmain, Esopus Spitzenberg, Newtown Pippin, Gout, Ben Davis, Rhode Island Greening, Limbertwig, Hubbardston Nonsuch, Virginia Greening, Higgins Red Winter* (an apple of great promise, originated here from seed, large, deep red, fine flavor, long keeper and tree thrifty and healthy). There are a number of seedlings propagated and variously valued for some peculiarity, but few have been named. *Orton's Seedling* and *Miller's Cherokee*, are very much alike; large *Red Winter*, of fine flavor, doubtless seedling of the *Spitzenberg* which they resemble. Here in St. George, the *Early Harvest* and *Red Astrachan* begin to ripen the middle of June, with *Amsden* peach and *Doyenne d'Ete* pear; but like all early summer apples and pears in this climate, will turn dark or black on the trees soon after being fully ripe. Most fruits of trees, vines and shrubs are here very precocious, and one may often find apples or pears bearing at three or four years old from seed

PEARS.

The pear seems to be especially adapted to our mountain soil and climate and to nearly all localities. And especially here in the south, where it attains a flavor and size nowhere excelled, and seldom equalled, except perhaps in California or the country south-west of this. We have frequently weighed specimens of *Bartlett* attaining eighteen and twenty ounces in weight.

VARIETIES MOST PROPAGATED

For early—*Doyenne d'Ete, Kirtland, Patecock.* Winter—*Winter Nellis, Josephine de Malines* and several others. For intermediate—*Bartlett, Seckel, Louise Bonne of Jersey*, and a score of other fine French varieties

PEACHES

This must be the country described by the poet—

"Where peaches grow with tuscious dyes
Like maiden's cheek when blushes rise."

For we have never seen peaches larger, of better color or more delicious than are easily produced here in the south. In the north they are also very superior in most localities adapted to their growth. As to varieties, many of the

most desirable sorts cultivated elsewhere are grown to perfection here; and besides we have many very desirable seedlings. These are easily proven, and either adopted or discarded, as they bear fruit at two and three years old from seed. Utah peaches, dried, bring a noticeable market rate higher than those of any other region.

PLUMS

are also at home here, and have never yet been troubled with the curculio. Budded on peach, they flourish and attain a healthy old age.

VARIETIES.

Green Gage, Imperial Gage, Washington, Jefferson, Golden Drop, Braulshar, Duane's Purple Gage, and many fine seedlings from foreign and native varieties.

Prunes and nectarines do equally well as their relatives the plum and peach.

APRICOTS.

Like the peach, the apricot here grows healthy, abundant and delicious, and we have no fruit, in fact, that seems more perfectly at home than the apricot. We have the usual cultivated varieties, but the *Gates*, and some other seedlings originating here, are generally larger and superior in flavor. This fruit is grown to that extent in Utah, that many are dried and canned, and like the plum and peach shipped abroad.

CHERRIES.

Thus far the cherry has not been a success; the trees grow luxuriously and bloom immensely, but no fruit sets worth giving them room. It may be that varieties which prefer a hot, dry atmosphere may do better—they do quite well north.

CRAB-APPLES.

This fruit grows well, but its usefulness, as yet, is unappreciated, and they are grown for ornament.

FIGS.

A number of varieties of this sweet and delicious fruit have been tried, and several varieties have been successful. The very tenderest get killed down in winter once in a while, but come again from the roots. They have not succeeded north. The *Black Spanish, Brown Turkey, White Ischia* and *White Genoa* varieties are most common.

POMEGRANATES.

This beautiful shrub grows luxuriantly here in the south; the blossom is beautiful; it fruits very well and is liked by many, but thus far we find it of no important commercial value, though no garden grounds would be perfect without it.

MULBERRIES.

There is no tree that grows more luxuriantly than the mulberry in any variety. Utah will one day be noted for its silk product. The fruit is abundant and good from *Downing's, English Black,* and hundreds of seedlings.

ALMONDS.

This nut-bearing tree is a prolific bearer and a complete success here in the south, and some are grown north. The best varieties are seedlings, both soft and hard shell.

As they have been fairly proved profitable, orchards will be planted and the nuts grown for export.

BERRIES.

Berries are not a success here, but many varieties do well north, especially the strawberry and gooseberry. Our improved native currant does well here, but it is too hot and dry for all other berries; the roots of the plants are too superficial.

MELONS AND TOMATOES.

These fruit vegetables are grown of finest quality and of large size all over the arable territory.

GRAPES.

There are many small vineyards in southern Utah, mostly planted with foreign grapes, though the *Isabella* is much esteemed for high colored wine. We have experimented with 150 varieties, and find the *Muscats* all do well, and are very superior. *Gros Coleman, Reine de Nice* and *Black Hamburg* grow large, showy and excellent. The *Sultana, Verdello, Zinfandel* and *Lady Dornes* are greatly admired. And many other varieties are desirable, and all we have tried do well. The *Sultana* and all the light *Muscats* make fine raisins. The *Muscot Hamburg* is the highest flavored grape we have ever seen or tasted, and is delicious and sugary when dried.

Very respectfully,

J. E. JOHNSON.

SALT LAKE CITY, August 6, 1877.

JAMES E. JOHNSON, Esq.:

Dear Sir—Hon. A. P. Rockwood handed me your letter to him, of June 24th, 1877, and requested me to comply with the requirements therein made.

For the last few years we have been very remiss in looking to our fruit interests, and consequently I shall be unable to render as comprehensive a report as I might otherwise have done.

Our apple crop has for the last four years been a failure in consequence of the worms, codling moth, and during the last two seasons the trees have been blighted by the red spider or lice; still in the settlements in the vicinity of this city the fruit and trees have not suffered so much. J. R. Winder has raised on his place, south of this city, some very fine fruit.

The pears have suffered fully as much as the apples, of both of which we have a large selection of the best varieties.

We have but one seedling variety of pear that we can recommend as first rate; in appearance it is very much like the *Bartlett*, but having a red side set in a yellow ground; ripens about one week later than the *Bartlett*; we call this pear the *Redfield*. This tree was brought out from seed by J. W. Crosby of St. George.

Of seedling apples we have the *Desert Pippin*, an early winter variety, very good, large and great bearer, and makes a beautiful tree. The seed from which this tree was raised was planted by Joel H. Johnson at the mouth of Mill creek, in Salt Lake county, twenty-six or twenty-seven years ago. Mr. Woodberry has a very fine seedling called the *Cluster*—winter. And I have a very handsome, dark red cooking apple called *Wallace Kitchen*—so named by the Gardener's Club of this city; very good—winter.

Of peaches and cherries we have a very fine collection. The green lice have destroyed our plum crop for some years; last year the crop was better than for a number of years, but this season it is a failure, having been killed by frost while in blossom.

Our apricot crops have been very good. Of this fruit we have two seedling varieties that are far superior to any of the imported, both in size and flavor; they are the *Carrington* and *Gates*; the latter about two weeks earlier than the *Carrington*, but not quite so large.

GRAPES.

Most of the foreign varieties have been destroyed by mildew, but the native varieties do very well.

The same as above is the case with goosecherries. Currants do remarkably well. Strawberries and raspberries do well, and we have a good many of the best varieties.

We ship annually a great many dried peaches, plums and apricots. We ship very few apples, either dried or fresh.

Winter apples want to be kept on shelves in a cool, but dry cellar, and to be laid ten or twelve inches deep.

Hoping this will be satisfactory, I am

Your obedient servant,

GEO. B. WALLACE.

P. S.—Apples for market have been packed in boxes holding about two bushels, each apple wrapped in paper and packed in layers and pressed as close as possible. In that way they will keep well, and fetch enough more to pay for the extra trouble.

G. B. W.

Report from California.

P. BARRY, Esq., *Chairman General Fruit Committee*:

In the performance of my duty as Chairman of the State Fruit Committee, I beg to submit the biennial report, necessarily condensed to points of general application deduced from an extensive range of facts, which can be utilized as bases towards perfecting pomological knowledge. I have been most efficiently assisted in this labor by the great experience and devotion to their calling of the following gentlemen, who consented to act as the State Fruit Committee: Th. A. Garey, of Los Angeles; W. B. West, of Stockton; James Shinn, of Niles Station, Alameda county; John Rock, of San José, Santa Clara county; and also by Messrs. Howe & Hall, most extensive fruit commission merchants of San Francisco.

To facilitate future compilation by the General Fruit Committee, I follow the order of your Circular.

1. SPECIES OF FRUIT.—It can be truly said that all the fruits of the temperate zone, and many of the semi-tropical find a congenial home in California, and are grown in great perfection and abundance; here are many homesteads surrounded with an endless variety of growth. Cherries, apples, pears and plums thrive side by side with olives, oranges, dates, pomegranates, figs and cacti, locust and pine trees, with the Eucalypti, Grevilleas and Araucarias. The climatic conditions and topography of our State afford locations with diverse attributes more suitable for some varieties than others; thus correct judgment is required to select the best adapted for certain uses. The long dry

summer renders it imperative to provide ample supplies of water, complemented by proper culture, to make such enterprises pecuniarily profitable, but with these adequate conditions, endless crops of fruit can be raised to supply the principal markets of the world.

2. VARIETIES OF FRUIT.—The foot-hills of the northern part of the State, and the counties bordering the Bay of San Francisco, are well adapted for and produce large quantities of apples, pears, plums, peaches, cherries, quinces, and small fruits and berries. The southern slopes of those hills sheltered from the ocean winds, more or less exempt from the slight frost of our winters, are unsurpassed for the culture of the grape, the finest foreign varieties prospering most. American varieties are little in demand, but the *Isabella* is doing well; the *Catawba* is the poorest in flavor. Figs, pomegranates, olives, and the citrus family are taking possession of the land—here the dwarf banana, date palm and pineapple will find some abiding spot. Over this great extent of country, grapes, when once rooted, do not require irrigation even in the driest of seasons. Fruit trees of all varieties in years of average rain-fall of twenty inches, do well without artificial watering; in dry years the growth of the fruit and its quality is promoted by a thorough soaking of the ground and subsequently plowing. Berries and small fruits generally must be irrigated to secure good crops. Up the San Joaquin river and down the coast, with scantier rainfall and more sandy soil, a few spots are found in deep glens surrounded by springs, affording choice locations for orchards, but most of said region needs irrigation to produce anything beyond a scanty growth of grass during the winter months. Even with this, the extreme heat and dryness of the air precludes the successful culture of northern fruits, but is most favorable for the production and curing of raisin grapes, and many semi-tropical fruits. Nearing the Colorado river, the banana, pineapple, and probably the coffee tree will reign supreme. Grapes raised in this southern belt of the country are very rich in sugar, but deficient in acids—good for brandy, but not for fine wines. The region about Los Angeles is now the center of the orange culture, which promises well to supply the demand of the Western States and compete in European markets with Italy and Spain. The growing and bearing trees dotting the country here and there for four hundred miles above Los Angeles, attest the practicability of such being the case in the near future. The orangeries of Wolfskill, on Putah creek, Solano county; General Vallejo, near Sonoma; the Alhambra gardens, near Martinez, Contra Costa county, and other sheltered places, produce as choice fruit—that on Putah creek ripening earliest—bringing higher prices in the San Francisco market than the best of Los Angeles growth. The large bearing trees are all seedlings, reproducing themselves, vigorous and little affected by slight frost, and if properly cared for the fruit is of good size but rather thick-skinned, fine flavor and keeps well, specimens often remaining on the tree two years from the blossom. Some seedling trees bear extra fine flavored and heavy fruit, and these are now selected to propagate from by grafting and budding. The imported grafted orange trees are decidedly lacking in stamina, and so far as tried the fruit is often inferior to our seedlings.

The lime reproduces itself from seed truly, and is a precocious bearer. Lemons show more sporting, but many

trees produce fruit of choicest quality identical with the *Seily*, and of the largest size.

The delta at the confluence of the Sacramento and San Joaquin rivers, but a short time ago the abode of waterfowl and beaver, is being gradually reclaimed, and already is in serious competition with the garden counties in the production of berries and orchard fruits; contrary to all former experience, land thus reclaimed and having water within a few feet of its surface apparently laving the roots, promotes an astounding growth of healthy wood, loaded with the largest apples, pears and peaches of their kind—and what is more interesting, the vine is literally smothered with clusters of grapes well adapted for table use.

The banks of the Sacramento river are covered with extensive peach orchards producing immense crops of large sized, early ripening fruit, somewhat deficient in flavor but afforded so cheaply as to keep the monopoly of supplying the San Francisco market.

The strawberry trade centers around San José, in Santa Clara county, owing to the abundance of artesian wells most conveniently located for the culture of berries.

Alameda county, over the stretch of arable land facing the bay, swept by cool ocean breezes, is studded with currant and gooseberry bushes without number.

APPLES.

Growers are now curtailing the number of varieties, planting only the best and most marketable; large, showy fruit, even if lacking in quality, finds readier sale than the finest flavored, if small. Sweet apples find no demand. Cool, low sites, with rich soils retentive of moisture, produce apples in great perfection—juicy and keeping well. The following varieties are most in demand:

Two Stars.—*Yellow Northern Pippin*, *Esopus Spitzenberg*, *Yellow Bullflower*, *Early Strawberry*, *Peck's Pleasant*.

Varieties extensively cultivated:

One Star.—*Astrachan*, *Alexander*, *Jonathan*, *White Winter Pearmain*, *Ben Davis*, *Rhode Island Greening*, *Smith's Cider*, *Early Harvest*, *Redbury Russet*, *Randa*, *Nickajack*, *Maiden's Blush*, *Northern Spy*, *Holland Pippin*.

PEARS.

Ancient pear trees around the old missions in most instances standing uncultivated and neglected, yet look thrifty and are overloaded with fruit—assuring us of the longevity of that tree; and the younger orchards producing fruit of the finest quality, of our ability to supply our neighbors without stint. *Bartlett* and *Winter Nellis* meet with a ready demand; all other varieties are more or less a drug in the market.

CHERRIES.

are largely cultivated. The trees succumb easily under harsh treatment by the pruner, plowman and the gnawing gopher. *Black Tartarian* is the favorite, followed by the *Monstreuse de Mezel*, *Napoleon Bigarreau*, *Governor Wood*, *Miyaduke*, and *Acaduke*.

PEACHES.

Peach trees are very hardy, neither subject to the yellows nor the peach tree borer. Neglected trees are vitalized by a severe top-pruning. The favorite varieties are: *Briggs' May*, *Tillotson*, *Large York*, *George IV*, *Alexander*, *Crawford*, *Strawberry*, *Ward's Late*.

APRICOTS.

are produced in great abundance: *Peach, Royal*.

NECTARINES.

Very few raised.

PLUMS.

are very prolific. Most varieties do best budded on the peach: fruit perfect.

QUINCES.

The *Portugal* is the largest fruit, but the tree is subject to black-knot. The *Apple* quince tree does well.

FIGS.

are most easily raised, producing enormous crops, if properly irrigated. The *Mission* fig is most palatable; the *White Marcellis* best for drying.

POMEGRANATES.

require copious watering to fruit well.

ALMONDS.

succeed well in locations not subject to late spring frosts; require moisture and good cultivation to raise large nuts.

ENGLISH WALNUTS.

require the same conditions as the almond; subject to sunburn, of the young growth. The

PECAN.

now on trial, promises to be one of our most valuable acquisitions. The seedlings grow rapidly without requiring much extra care besides copious watering. The older trees look very thrifty, and are of symmetrical and handsome appearance.

Within the last ten years efforts have been made to raise the chestnut. Trees were disseminated from our nurseries under the name of "Italian and Japanese" grafted chestnut. They begin to fruit the third year from graft. So far the opinion is prevailing that the dry and warm climate of Central California is unfavorable to their growth.

The native California black walnut is a beautiful tree, and, given a modicum of care, is a rapid grower and bears early; the nuts are very palatable. OF

GRAPES.

several hundred varieties of the best European repute are cultivated. The dreaded phylloxera has admittedly made its appearance in Sonoma county, evidently introduced from Europe on imported vines; it does not make much headway. There are often found spots amidst our most luxuriantly growing vineyards where, owing to an impervious, hard clayey soil or barren sand, the vines dwindle without making much wood, and the fruit is small, insipid and mildewed, without a sign of phylloxera.

The best marketable varieties are: *Chasselas Fontainebleau*, *Black Hambury*, *Muscot of Alexandria*, *Seedless Corinth*, *Damascus*, *Black Prince*, *Flame Tokay*, *White Malaga*, *Black Ferrara*, *Isabella*—enabling us to pick ripe grapes from the vines during six months of the year.

3. NEW NATIVE VARIETIES.—The desire to excel in pomology remains active, stimulated by the well cultivated taste for the best of a kind, and finds recompense in liberal prices for such fruits as are rare or of very superior quality, causing new fruits or improved varieties to be eagerly sought after and tried. Those originated abroad and per-

sistently heralded are found in most instances to be over-rated and by no means to reach the standard of the best. Especially is this the case with the new named peaches. They are all too small, with earliness as the only desirable point, but even this is entirely eclipsed by a native seedling under the appellation of *Briggs' May* peach, one to two weeks ahead, in the market, of its competitors. *Shinn's Ravrip* promises well. Besides these, there are many fine chance seedling peach trees of superior merit, but so far no effort at money making by their propagation has been made.

Skinner's Seedling, originated in Santa Clara county, has the only claim among apples.

Seedling pears come nearer to the parental stock, often blending the desirable qualities of two varieties, but none have been sufficiently tried.

We have here the *Golden Champion* grape, imported at \$5 for a goose-quill root, which proves itself a miserable failure.

4. SYNONYMS.—The standard nomenclature of fruit is rigidly observed with but a few deviations, of which the most noticeable are: the *Black Prince* grape is called here the *Rose of Peru*; the *Red Lombardy's Flame Tokay*; most white or yellow plums are called in the market *Green Gages*, and black cherries all *Tartarianus*.

5. OBSTACLES.—Multitudes of inferior varieties propagated and sold by nurserymen under captivating promises of excellence, are found after years of waiting for the fruit, to be of no market value. Trees being now propagated by the million in single establishments, makes it impossible to obtain scions or grafts from bearing trees, whose fruit comes up to the full standard of excellence of a variety, and to this circumstance may reasonably be ascribed the deterioration of many old varieties. Over-production, high cost and inefficient or unreliable labor; insects begin to multiply, increasing the cost of production.

6. CULTURE AND PRUNING.—Clean, mellow culture is imperative. The waste of the constituents of the soil must be replaced, and the renovating system of pruning assiduously followed, with the removal, while young, of all superabundant fruit. Any kind of alkaline washes consisting of lime, potash, salt, &c., are of decided benefit in destroying mosses, fungi, and insects on the stems or roots of trees. The good effect of one efficient washing of the stem may be observed for years, in the cleanness and brightness of the bark as compared with the unwashed.

7. STORING.—Large quantities of apples and pears can be conveniently stored in piles under each respective tree, and they keep fully as well as those under roof, the rain doing no injury and a slight covering being sufficient to keep out frost.

8. PACKAGES.—For apples and pears, 40 to 50 lb. boxes; for stone fruits and grapes, 20 to 25 lb. boxes.

9. STATISTICS could be compiled from the usual assessors' and surveyors' general yearly statements, without gaining reliable data of the growth, extent and results of horticultural science in our midst; these are more vividly represented by commercial transactions in that line by comparison, and the price, abundance and quality of the fruit in the central places of consumption.

Before the year 1850, but few fruit trees were grown in the State, and after the rapid increase of population, that

small amount raised sold at fabulous prices. This was an incentive for many to plant extensive orchards, no matter at what expense of money or labor, and those bearing earliest proved exceedingly profitable. 75 cents to \$1.00 per pound for fine peaches, and *Mission* grapes 25 cents to 50 cents per pound, stimulated others to follow the enterprise. From three to five years brought most of the trees into bearing, soon glutting the market. Prices rapidly sank, and by 1865 fruit was within reach of all; by 1870 some varieties had to look for disposal to distant markets, and drying and canning were engaged in extensively. A gradual depression in prices continued until last year, when with a superabundant crop the prices realized did not cover the outlay for production. It is not from supineness or lack of enterprise on the part of the horticulturist that such a state of facts exists. Our market for dried and canned fruit is governed by the price of the foreign article, irrespective of the cost of labor current among us, and the available help is untrained and unreliable. To illustrate our position, I refer to the strawberry culture. The first planting around Oakland in Alameda county has all been vacated, and the largest gardens are now established in Santa Clara county, mainly in the hands of Chinamen, who raise the fruit on shares whereby the owner of the land is assured of a steady and certain income, and the shrewd Asiatic, a stranger in the land, manages with such consummate skill and ready coöperation that the market is most judiciously supplied, and a remunerative price secured, which was not formerly the case.

Strawberries are to be had here almost any day of the year, but the main crop continues about four months, and at the height of the season as many as 700 chests, or about fifty tons, are received daily in San Francisco, and distributed to distant points in the State.

EXHIBIT.

PRICE OF STRAWBERRIES.			
	Price per lb.		Price per lb.
May 20, 1867...	\$1.00 to \$1.50	June 12	\$.18 to \$.25
" 14, 1868...	.20 to .25	" 4	.10 to .18
" 12, 1869...	.08 to .124	" 23	.10 to .15
" 6, 1870...	.10 to .15	" 29	.08 to .10
" 11, 1871...	.06 to .10	" 22	.05 to .10
" 15, 1872...	.07 to .11	" 17	.02 to .04
" 18, 1873...	.08 to .10	" 26	.04 to .06
Apr. 15, 1874	2.00 to ...	May 20	.05 to .08
Mar. 15, 1875	2.00 to .50	" 15	.05 to .20
Apr. 3, 1876	1.50 to 1.00	June 5	.06 to .15
Feb. 26, 1877	2.50 to ...	Aug. 8	.05 to .07
1874.—Arrived in April	664 chests	—80 to 90 lbs.	
" " May	5791	"	
" " June	3281	"	
" " July	500	"	
		10,236 chests.	
1875.—Arrived in March	2 chests.		
" " April	1,930	"	
" " May	10,860	"	
" " 17th June	710	"	
		13,502 chests	
1876.—From April 3 to Nov. 1	18,901 chests.		
1877.—The crop will be several thousand chests larger—			
	steady, moderate price.		

Our advance in orange culture furnishes an instance of the energy and enterprise of our people. The impression prevailed in 1850 that oranges could be grown in a few favored spots around Los Angeles, the San Gabriel mission being the center thus favored by public opinion. Orange groves began to cover this favored county, greatly assisted by the indomitable zeal of T. A. Garey, under whose leadership the raising and propagation of choice varieties of the *Citrus* increased annually to many hundred thousands in nursery.

CONSIGNMENT OF LOS ANGELES AND SAN GABRIEL ORANGES RECEIVED IN SAN FRANCISCO.

CROPS.	ORANGES.	LEMONS.
1871-2	4,701,290	480,570
1872-3	1,581,810	301,800
1873-4	4,544,140	400,200
1874-5	5,380,300	619,720
1875-6	2,775,970	363,810
1876-7	7,395,790	521,390

Over 40,000 boxes of raisins were cured last year and the product in most instances compared favorably with the best imported, but owing to the reluctance of leading merchants to patronize the home article, the venture was unprofitable to the producer.

The trade in other fruits is in so many hands, the shipments reaching San Francisco by multitudinous avenues, that it is impossible to gather accurate data of its extent; and it is still more difficult to make any estimate of the amount of fruit consumed in the State. Much of it goes to waste and a great deal is fed to stock—sugary delicious grapes thrown before swine. For these reasons a comparison of the ruling prices when the work of the horticulturist began in earnest, with the prices obtained for fruit to-day, furnishes a better criterion of the advance since made. Thus, in 1852, apples sold as high as \$100 to \$125 per box of 45 lbs.; to-day, one-half to three-fourths of a cent per lb.

Peaches, \$1.00 to \$2.00 apiece are now 50 cents to \$1.00 a basket.

Pears of the *Pomud* variety, hard and insipid, sold at \$5.00 apiece, to-day 25 cents to \$1.00 for a fifty-pound box of the most luscious.

Cherries \$3.00 to \$5.00 per lb. now 8 to 20 cents.

Native strawberries sold by the dozen for a price that coated them with gold-dust, and all other fruits in proportion.

Despite of the great risk and the exorbitant freight charges, which on a car load of 20,000 lbs. to New York, were \$1,175 for fast time, \$675 for slow; to Chicago, \$800 fast time, \$500 slow, there were last year shipped east 334 car loads, viz., 143 cars from Sacramento, 168 from San José and 23 from Marysville. Preparations are being made for an increased business this year, using mostly refrigerator cars for perishable fruits.

Owing to the great deficiency of rain over a large part of our territory, about four inches only having fallen during the past year, the productions of the horticulturists are as injuriously affected as those of the grain grower. Under careful pruning and thinning of the fruit, and thorough ground culture, mitigating the injury, the trees have made a very fine growth, still nothing can replace the vitalizing fluid. Thus where irrigation was not practicable or the soil naturally moist from surrounding springs, the fruit is small and lacking crispness. The injury was augmented by a hot spell in the month of June, beginning on the 8th

and culminating on the 12th, which scorched the fruit in many instances and checked its growth; some varieties suffering less, but of others the crop was utterly ruined. Late cherries and almost the entire crop of currants and gooseberries were lost, and most of the prunes dropped from the trees. The falling in temperature was as sudden on the 13th and 14th of June, injuriously affecting grapes, which at once showed signs of mildew. Many northern counties, however, received abundant rain, together with the facilities for irrigation, yearly augmenting, and the Tule delta coming under cultivation, have made amends for the deficiency suffered through the dry region, and fine fruit is abundant in the leading markets.

Another peculiarity observed, especially this season, has been the retarded foliation and imperfect inflorescence of trees on dry land, not entirely accounted for by the want of moisture. It appears that after the only copious rains during the months of October and November, there was a period of warm, dry weather, causing the buds to swell rapidly and prematurely during December; then slight warm showers in January, increasing the rapid development, were followed by very warm days and frosty nights which most injuriously checked the growth and blighted the expanding bloom.

Notwithstanding these disadvantages, the early fruits were abundant and of good quality. The first cherries came to market on the 12th of April. About the 20th of April the height of the strawberry season was reached, the arrivals aggregating from 600 to 750 chests daily, selling at \$5.00 to \$9.00 per chest. In June, with decreased supply, they sold at \$12.00 to \$15.00, declining in August to \$5.00 to \$6.00 per chest. Some of most extraordinary size were of the *Monarch of the West* variety, grown by C. M. Silver & Son. The *Alpine Everbearing* proved itself deserving that name in the care of a successful cultivator near Santa Cruz. The *Longworth's Prolific* is a leading variety cultivated here.

Apricots were undersized and scarce, the crop evidently having been injured by the premature development of the fruit buds.

Almonds are small, and in some places an entire failure.

At this late day we are enabled to give some estimates of the fruit crop for the season:

Grapes—An average crop.

Apples and Plums—About one-sixth of an average.

Cherries—Two-thirds of an average.

Pears—*Bartletts*, two-thirds; other varieties, twenty-five per cent. over average.

Quinces—An average crop.

Peaches—Full average; deficient in size.

Blackberries and Raspberries—Half a crop.

Currants and Gooseberries—Almost an entire failure.

We have been able not only to furnish our own population for a score of years with the most delicious and acceptable fruits at a minimum price, but have shipped abroad, even to China and Japan, of our superabundance, besides supplying our immediate neighbors in the States of Nevada, Oregon and Mexico; and further than this, we continue in a lively desire to furnish raisins for every pudding in the land, nuts for every urnin, and to distribute all semi-tropical fruits with our golden apples of the Hesperides to the northern-most ends of the earth.

Respectfully yours,

J. STRENTZEL.

Alhambra, August, 1877.

Report from South Carolina.

1st. Nearly all of the fruits of the north temperate zone will grow somewhere in South Carolina. Oranges, lemons, and figs, with the early varieties of apples, peaches, pears and the *Scuppernon* grape grow well on the coast; from there to the falls in the rivers commonly known as the tide-water region, all of the fruits common to the latitude in Georgia and North Carolina grow well, but the earlier varieties of apples, peaches, pears and the *Scuppernon* grape are the most profitable; these fruit trees are short-lived. As we go further up the country, apples, peaches, strawberries and raspberries do better. Grapes, peaches and pears grow finely all over the State, the *Scuppernon* doing best, however, in the low country. As a general rule, we grow apples, peaches, pears, plums, apricots, nectarines, grapes, figs, quinces, cherries, strawberries and raspberries, successfully.

2d. Grapes, and particularly the *Scuppernon* grape, peaches, early apples, figs and strawberries are grown successfully in the lower part of the State; insects destroy the plum and apricot, and "blight" destroys the pear trees. In the upper section of the State into the mountains the same fruits, excepting the fig, and with the addition of summer, autumn and winter apples, pears, quinces and raspberries grow well.

3d. There are a number of seedlings of fine local reputation, without names, of peaches and apples. There are on the coast two strawberries, the *Norman's* and *Noisette*, I think are the names given them, that have become the principal market berries for Charleston gardeners. A few of Dr. Wylie's Hybrid grapes are very promising—the *Beckmans*, *Peter Wylie* and *Janie Wylie*. The *Hebe* pear, a seedling of Mr. Summers, does well in some sections.

4th. Knowledge of intelligent fruit-growing is so limited and an absence of discussion of the names of fruits for many years make it impossible to give definite information at this time, as to synonyms. We are organizing or reviving, at this time, a State Horticultural Society; and as there is very great interest now felt in fruit growing, this will be corrected by the end of the next year to the extent of adopting a nomenclature.

5th. The obstacles to successful fruit culture are not numerous, nor, with the exception of blight, difficult to overcome. Negligence in not planting the proper varieties is a great source of failure; neglect to fertilize and cultivate the orchards is another. Frosts or cold winds are obstacles that are not easily remedied; but their effects may be mitigated by selections of proper exposure and location. In many parts of the State we get four crops of peaches out of five—two very full and two moderate ones. There are no insects here to destroy apple trees or their fruit to any extent; nor do insects destroy our peaches to any extent; the *Egeria* is often troublesome, but by a little pains at the proper time its efforts are almost harmless in results. The *Curculio* very seriously affects our plums and nectarines; but this loss may be avoided by keeping hogs in the orchard and plowing the ground up in mid-winter. This year nearly the whole of the grapes of a vineyard, which I grew in this city (Columbia), were destroyed by June Bugs, bees and wasps. What we most need here is insect-eating birds. We have not a bird that will eat a caterpillar, but a great many that will eat grapes. I heard

of a gentleman who offered a premium to any one who would find a worm in a peach to be taken from any of a number of baskets.

All that we need is intelligence and faith in our natural resources to develop into the finest fruit-growing country for variety, abundance and excellence, in the world.

6th. As good, and in my own experience, the best cultivation for an orchard is to plant it in cotton, year after year (fertilizing the cotton heavily each year with phosphate of lime and potash), as long as the size of the trees will permit it to be planted, and plowing it up well during mid-winter, across the cotton rows, leaving each year a little wider strip of unplowed land near the trees. After the trees get too large to make a field crop profitable, shallow plowing in summer and winter, and the use of the spading fork and hoe directly under the trees, applying potash and phosphate of lime annually broadcast under the trees. Apples with us require but little pruning, if they are started right, except occasional thinning out of the limbs. With peaches and pears the shortening-in method; cutting off half of the preceding year's growth of each branch is successfully practiced. With grapes, the Thomery system of pruning, a little modified, and the vines trained to a trellis, gives the best results.

7th. Apples may be kept through the winter by being kept in a cool cellar, covered with dry sand or charcoal. This is rarely done, however.

8th. The best packages for market, for apples, pears and peaches, we find to be crates, made of laths nailed to the ends and middle pieces, and of a size to hold from one-third to one-half bushel. Cotton and live moss are both used successfully in packing peaches, putting a layer of cotton or moss and a layer of fruit, the fruit touching laterally.

9th. There is quite an interest, amounting in some sections to enthusiasm, manifesting itself in the State, favorable to fruit culture. The evidence of this is that last year only about 500 bushels of peaches were shipped to market, and this year about 5,000 bushels have been shipped.

I append a list of varieties of different fruits grown in the State, their merit indicated by stars, according to the plan adopted by your Society.* All of which is very respectfully submitted.

R. M. SIMS,

Chairman of Fruit Committee for South Carolina.

Report from Georgia.

P. BARRY, Esq., *Chairman General Fruit Committee:*

DEAR SIR:—Eighteen hundred and seventy-seven will long be remembered here as one of the most remarkable fruit years on record. The unprecedented cold weather of the winter of 1876-7 instead of causing the disastrous results which many fruit growers feared last spring, seems to have had the most beneficial influence upon all classes of fruits. Seldom has there been such freedom from insects which usually prey upon our fruit trees, or from diseases affecting trees or plants. This abundant and perfect crop of fruit has had the most beneficial results in

*Varieties arranged and starred in Catalogue, as far as descriptions of them could be obtained.

encouraging fruit culture and is stimulating the production of the better classes of fruits. The abundant supply in all our markets has demonstrated practically that it will not pay to produce fruit of an ordinary quality, thus compelling our fruit growers to adopt both improved varieties and improved methods of cultivation in order that their products may meet with remunerative prices. We look therefore upon the abundant fruit crop of this year not only as a generous blessing from a kind Providence to our people, but as a wonderful incentive to pomological progress.

We are happy to report most satisfactory progress in fruit culture in Georgia. A State Horticultural Society was chartered and organized a little over one year since, with fourteen charter members, upon the joint stock principle and with a capital stock of \$10,000, the shares being ten dollars each. The objects, aside from promoting and encouraging horticulture in all its branches by the most feasible means, are also to establish, maintain or endow Horticultural Schools or Colleges in Georgia, and prescribe the course of instruction therein; no personal benefit being expected by the members of the organization other than the satisfaction of aiding in developing the productive resources of the State and elevating the standard of education.

At the first meeting one hundred and forty two shares were subscribed. At this date it has eighty members, all stockholders, and there is the most encouraging prospect of large additional subscriptions, which will at an early day enable the Society to establish a College of Horticulture, as hoped for in the inception of the organization.

The second annual session of the State Horticultural Society convened at Macon, Ga., on the 1st and 2d of August last. The discussions were practical, interesting and instructive. The exhibition of fruits, it is safe to say, was never equalled in the Southern States. The exhibition of peaches, as to variety and excellence, may be noted as surpassing any similar exhibit, perhaps, ever made in the United States. Many collections contained from forty to sixty varieties, *all in good condition of maturity*. Never before were such perfect specimens shown; they demonstrated conclusively that the section of country extending through middle Georgia and South Carolina is emphatically the best peach-growing belt of the Southern States.

As one of the first practical results of this Society, its transactions of the first session of 1876 have been published and distributed extensively among the people. These transactions contain a catalogue of the various classes of fruits susceptible of being grown in Georgia. Each class is arranged in separate divisions as to their adaptability to each of the main geographical zones of the State, viz: the mountain, middle and coast regions.

This catalogue has already proved of much value, is now being carefully revised by the Society, and will be issued in enlarged form this fall, in time to allow all prospective fruit tree planters to consult it with profit.

We must not omit mentioning that since the organization of our State Society, several local Pomological clubs have been formed in various counties of the State; these reported to the parent Society an aggregate membership of 249 up to July 25th. Most of these county societies have semi-monthly meetings during the spring, summer and fall

months, and one, the Atlanta Pomological Society, meets every Saturday during the fruit season.

In former reports to the American Pomological Society, full lists of our fruits and their particular merits have been given. Your committee therefore beg leave to omit mentioning such varieties as have been already fully discussed. We confine our remarks to varieties whose additional merits claim our attention.

PEACHES.

Immense quantities were shipped to Northern markets with generally very satisfactory results.

Alexander and *Amsden*, fruited in many sections of the State; both ripen together and very little, if any, difference could be noted. In Middle Georgia they began to mature May 24th, and lasted until June 6th. In size and quality they surpass *Beatrice*; they mature from 6 to 12 days before the latter; carry well, and the general verdict is that the trees are remarkably prolific.

In Thomas county, which is near the Florida line, *Early Beatrice* matured May 23d, whereas *Alexander* and *Amsden* did not mature until the beginning of June.

Early Beatrice ships well, and though small, brought on an average, \$8 per bushel in New York.

Gale's Early was exceedingly successful this year, and by many of our large growers is still considered as the most profitable early kind. It rotted very little this year and as late as June 13th sold for \$9 per bushel in New York.

Early Louise and *Early Rivers* are too tender for shipping to distant markets, but very valuable for home use and home markets.

Briggs' Early fruited to a limited extent. Fruit quite similar to *Amsden* in quality and texture; ripens one week later and promises well.

Chinese Clings were in wonderful perfection this year. Some growers sold this variety at one dollar per dozen in July, when our markets were overstocked with excellent peaches which brought scarcely one dollar per bushel. Those who shipped to New York, realized in many instances sixteen cents apiece for *Chinese Clings*.

Our State Society recommends the following as the best early peaches for shipping North:

Alexander, Amsden, Beatrice, Gale's Early, Fleita's St. John, Early Tillotson, Mountain Rose, Chinese Cling, Early Crawford, Gen. Taylor and Duff Yellow. The two last named are large and very highly colored early clingstones.

APPLES.

The crop is reported very large all over the State, but summer varieties proved unsalable this year, owing to the profusion of peaches in our markets.

There is much complaint of twig blight in the upper section of the middle region, and to a smaller extent in the coast region. No remedy has proved effectual so far.

PEARS.

Crop good upon the whole; trees less affected by blight than last year. *Duchesse d'Angoulême* when shipped to New York came in competition with *Bartlett* from Virginia and sold at very low prices.

GRAPES.

Best crop in ten years and remarkably free from mildew. Maturity about two weeks later than usual, owing to drought in May. Markets have been overstocked with *Concord* and *Ives*, prices having in some instances fallen to three cents per pound.

Many new varieties fruited this year. At the State Society's exhibition, fine specimens of the following varieties were shown: *Eleira*, *Lady*, *Black Eagle*, the last exceedingly fine in size and of good quality. *Peter Wylie*, as grown in Thomas county, was of superior quality and the best white grape exhibited. *Berckmans* (Dr. Wylie's Hybrid of *Clinton* and *Delaware*) grown in Richmond and Thomas counties, was also very fine in quality. *Croton*, grown in Richmond and Fulton counties, very sound and best quality; it is usually unreliable. *Sauvignac*, has, after five years' fruiting, proved very valuable; it is very prolific, produces large bunches and is superior in quality. Diligent search for the past two years has failed in discovering any traces of *Phylloxera* in this State.

PLUMS.

For the first time in many years plums, other than those belonging to the *Chickasaw* type, have been very successful. There seemed not to be the usual crop of *Curculio*, hence fine plums,

STRAWBERRIES.

The crop was very good, and the average price per quart in our markets was 12½ cents. This admits of very satisfactory profits when this fruit is properly cultivated. No variety is superior to *Wilson's Albany*, so far.

As references for the fruits best adapted to each main division of Georgia, we append the official Catalogue of the State Horticultural Society.

Respectfully submitted,

P. J. BERCKMANS,

Chairman of State Fruit Committee.

Augusta, Ga., September 1st, 1877.

Report from Florida.

To P. BARRY, Esq.

Sir—The Fruit Committee of the American Pomological Society for the State of Florida have delayed their report in hope of collecting fuller information from distant and widely separated parts of the State, and still are compelled to content themselves with statements which they acknowledge to be very meagre. Our small population is scattered over so broad a territory, the State presents such varieties of soil and climatic conditions, and fruit culture in Florida, as a separate industry, is of so recent a date, that the collection of facts on which to base a satisfactory report is a matter of exceeding difficulty.

It is undoubtedly true that every species of fruit produced in any other state, can be raised in Florida. The production of some of them, however, cannot be relied on as a source of profit.

APPLES.

Apples and pears do best in the part of the State lying west of the Chatahoochee river, but are not really at home even there. The foliage remains upon the trees until it is

destroyed by frost. In the southern part of the State apple and pear trees are evergreens.

PEACHES.

Peaches, in favorable years, are produced in great abundance. Budded peach trees brought from the north, or even from Georgia, are unthrifty and unproductive. Native seedling peach trees, on the other hand, grow vigorously and produce well. Some native varieties of the fruit compare favorably with the best that are raised at the north. Some are very early and others very late, while most of them ripen in July. It is believed that we can have peaches ripening continuously five months in the year. So far as your committee are informed, however, no person in Florida has engaged in the systematic propagation of choice varieties. Consequently there has been no uniform naming of varieties. The raising of trees from pits has brought out the fact, that the peach here follows the seed with considerable closeness.

BLACKBERRIES.

Blackberries are at home here as almost everywhere. The best native variety grows upon a trailing vine, and is sometimes called the Dewberry. This is ripening for a month or more before the high-bush blackberry becomes fit for the table. The *Kittanning* and *Lorton* are cultivated with success.

STRAWBERRIES.

Strawberries, in many instances, have been raised with great success. There is something yet to be learned as to their culture, in order to make the crop a certain one. The better opinion seems to be that the plants should be reset every year. The strawberry season is at least three months long. *Wilson's Albany* and *Newman's Prolific* are the favorite varieties.

FIGS.

Figs of all varieties are raised without difficulty. The best is the *Celestial*, a very small brown fig, very sweet. There is no acidity in the skin, and hence it would not be necessary to treat the fruit with lye in order to prepare it for market. It makes a delicious preserve.

GRAPES.

Grapes are believed, by the few who have experimented with them, to promise great success. It is thought, however, that the close pruning, recommended for the northern states, will have to be abandoned here. Training upon arbors gives the best results. We name *Concord*, *Delaware*, *Martha Ives*, *Seedling*, *Diana*, *Crevelling*, *Herbmont*, Rogers' Hybrids, *St. Augustine* and the *Scuppernon* as entitled to two stars each.

PLUMS.

The *Japan* plum (*Mespilus Japonica*) grows on a large, highly ornamental evergreen tree. The fruit ripens in March and is very delicious.

GUAVAS.

The *Guava* grows upon a shrub, and when not injured by frost, the production is immense. The shrub is more delicate than the orange. Still in the north-eastern part of the State, the roots are never destroyed by frost, and experience proves that along the St. Johns river, we may expect two crops every three years.

BANANAS.

The *Banana* is cultivated with perfect success in the southern part of the State, but only the hardier and coarser varieties succeed in the northern part.

We may say, in general terms, that all semi-tropical fruits can be raised successfully in the greater part of the State, and all the tropical fruits in the southern part.

ORANGES.

The *Orange* is the fruit to which chief attention is given in Florida, and the culture of it is extending very rapidly. Only a beginning has been made in examining and naming the varieties of the sweet orange. Nine-tenths of the fruit of this species, now grown in Florida, is of the same general character, though the size, color, flavor and juiciness are very largely affected by fertility of soil, cultivation, and every other cause that can influence the condition of the tree. We name this common variety the "*Florida Standard*," and append, as to other varieties, the report of the committee on pomological nomenclature to the Florida Fruit Growers' Association.

Tangerine Orange.—Synonyms, *Mandarin*, *Kid Glove*, *Tomato Orange*.—Size medium; much flattened, color dark orange; broad, irregular cavity, with stem obliquely inserted, and surrounded by a knobbed eminence; eye set in a large depression one inch wide and five-sixteenths deep; longitudinal diameter two and a half inches; transverse diameter three inches; skin irregularly ribbed or lobed, color of flesh very dark orange; pulp adhering to skin by a few filaments; sections of pulp easily separated; pulp coarse; juice sweet and highly aromatic; aroma marked; quality first. Tree of original variety introduced by Major Atway, from Bayou Sara, La., and at present growing in the grove of Dr. Moragne, at Palatka.

Dancy's Tangerine.—Size small; much flattened; color deeper and more brilliant than parent variety; longitudinal diameter one and three quarters inches; transverse diameter two and one quarter inches; the eye set in a deep cavity seven-eighths in diameter; stalk straight and inserted in a ribbed depression; thickness of skin three-sixteenths; general properties of pulp same as parent, only superior; fruit nearly seedless. In flavor and external appearance this variety is superior to the original. Seminal variety of the *Tangerine* raised by Colonel F. L. Dancy, Buena Vista, St. Johns county, Fla.

Navel Orange.—Synonyms *Umbilical*, *Bahia*, *Pernambuco*, *Seedless Orange*, *Embryo*.—Size large to very large; eye presenting an umbilical appearance (from which it obtains its name); stem inserted in a shallow-ribbed cavity, with deep lines; skin three-sixteenths thick; longitudinal diameter three and five-eighths; transverse three and three-quarters; flesh very fine, melting and tender; juice sweet, sprightly, vinous, and aromatic; quality first. Origin, Bahia, Brazil.

Sweet Scilla (Hicks).—Size small; slightly flattened; color comparatively deep; eye small, without depression; skin very smooth; thickness of skin two-sixteenths; longitudinal diameter two inches; transverse two and three-eighths; color darker than *Navel* orange; foliage differs from other varieties examined; leaves markedly obovate; average length about three and one-quarter inches; width about two and five-eighths; grain very fine, juicy, and melting; juice very sweet and sprightly; quality best; a

superior fruit in every respect, except size. Supposed to be a seedling raised at Arcadia, St. Johns county, Fla.

Nonpareil.—Size above medium; somewhat flattened; color ordinary; eye broad and set in a slightly depressed cavity; stalk inserted in a level, scarred surface; skin three-sixteenths thick; longitudinal diameter two and three-quarters of an inch; transverse diameter three and a quarter; color of flesh ordinary; grain fine; pulp melting and tender; juice sub-acid and vinous; quality good. Seedling raised by Mrs. Mary Richard, Arlington river, Duval county, Fla.

Magnum Bonum.—Size large to very large; flattened color light clear orange; eye set in a slight cavity; stem inserted in a narrow depression; skin very smooth and glossy; thickness of skin two-sixteenths; longitudinal diameter three inches; transverse three and five-eighths; color of flesh light; grain very fine, tender, and melting; fruit very heavy and juicy; juice sweet, rich, and vinous; quality best. Probably a seedling raised at Homosassa, Fla., the former residence of the Hon. Mr. Yulee.

Old Vine.—Size above medium; slightly flattened; color dark orange; eye broad, and set in a slight cavity; stalk inserted in a narrow, wrinkled depression; surface of skin rough; thickness of skin three-sixteenths; longitudinal diameter two and three-quarter inches; transverse diameter three and one-eighth; grain coarse; pulp melting; juice sub-acid, and remarkable for a sprightly vinous property; quality good. Seedling raised by Colonel F. L. Dancy, Buena Vista, St. Johns county, Fla.

Buena Vista.—Synonyms, *Sweet Scilla*.—Size medium; slightly flattened; color dark crimson; eye set in a slightly-depressed cavity; stalk inserted in a slight depression; skin smooth with deep pits; thickness of skin nearly four-sixteenths; longitudinal diameter two and three-quarter inches; transverse three inches; color of flesh rather dark; pulp coarse, but melting; juice sub-acid with vinous flavor; quality good. Seedling raised by Colonel Dancy.

Scilla.—Size large; slightly flattened; color bright; skin smooth and glossy; eye very small, and set in a slight cavity; stem inserted in a small, shallow, wrinkled depression; skin three-sixteenths thick; longitudinal diameter three inches; transverse three and a quarter; grain coarse; pulp rather melting; juice sweet; quality good. Seedling raised by L. H. Van Pelt, Mandarin.

Arcadia.—Size large; form somewhat flattened; color deep; eye set in a slight depression; stalk inserted in a slight, roughened cavity; skin smooth, with marked pits; thickness of skin three-sixteenths; longitudinal diameter two and three-quarter inches; transverse diameter three and a quarter inches; color of flesh deep; grain coarse; pulp melting; juice slightly sub-acid; quality good. Supposed seedling raised at Arcadia, and introduced by the Rev. William Watkin Hicks.

Toniff (Harts).—Surface of skin smooth with deep pits; color light; stem inserted in a slight roughened depression; eye set in a flat surface three-quarters of an inch wide; skin two sixteenths thick; flesh dark orange; transverse diameter three inches; longitudinal diameter three inches; grain fine; capsule of pulp segments somewhat tough; occasionally seedless, sometimes containing from one to five seeds; juice sweet with a brisk racy flavor; quality good. Fruit tested June 25th, 1877.

LEMONS.

The lemon is receiving increased attention. The only variety that can be recommended we call the "*Floridised Sicily*." The trees are produced from the seed of lemons imported from Sicily. The fruit is very much larger than that which is imported, and lacks something in uniformity of shape and color. At first it is objected to by dealers as too large and too coarse in appearance, but when properly placed in market, and tested, it is preferred to the imported fruit. There is no doubt that, eventually, sub-varieties of great excellence will be brought out and propagated.

Respectfully submitted,

P. P. BISHOP,

Chairman

Report from Arkansas.

To P. BARRY, Esq., *Chairman General Fruit Committee, American Pomological Society:*

The undersigned, member of the General Fruit Committee for the State of Arkansas, respectfully reports that,

1st. The following species of fruit are successfully grown in the State, viz: Almonds, apples, apricots, blackberries, cherries, currants, figs, gooseberries, grapes, melons, mulberries, nectarines, peaches, pears, plums, quinces, raspberries and strawberries.

2d. Relative merit of varieties of fruits,

APPLES.

Worthy of two stars in this State, are numbered in the Society's Proceedings for 1875, as follows, respectively, 43, 45, 46, 73, 74, 95, 129, 130, 140, 213, 236, 234, 241, 255, 258, and Transcendent crab. Of one star, numbers 16, 24, 33, 34, 40, 62, 122, 143, 185, 189, 207, 235, 291.

Those corresponding to the following numbers are condemned for anything like general cultivation in this State, though more or less popular in the South, viz, 125, 127, 141, 212.

APRICOTS.

One Star.—*Early Golden.*

Two Stars.—*Breda, Moorpark.*

BLACKBERRIES.

One Star.—*Ancient Briton, Wilson's Early.*

Two Stars.—*Kittatinny.*

GRAPES.

One Star.—*Ives, Delaware, Norton's Virginia.*

Two Stars.—*Flources, Scuppernon, Sugar, Tender Palp, Thomas.*

PEACHES.

The following numbers (according to the Society's Proceedings in 1875) are entitled to two stars, viz: 3, 11, 13, 20, 24, 26, 33, 55, 60, 62, 76, 78; and the following to one star, viz: 2, 4, 5, 8, 9, 18, 27, 32, 37, 42, 43, 47, 48, 52, 54, 56, 58, 59, 61, 72, 74.

Recent and promising, *Amsden, Alexander, Foster, Salway.*

PEARS.

Four-fifths of all the pear trees in the State have been killed the past two seasons with Fire Blight. The disease seems worst, in a general way, on the varieties which otherwise are the most desirable. Only the following sorts have thus far been entirely exempt from the blight in my orchard, viz: *Tyson, Zoor Beauty, Seckel, Bloodgood* and *Doyenne Boussock*, though *Flemish Beauty, Lawrence, Kirtland*, and *Bourre d'Anjou* have been but very little affected.

The following are badly affected, not a tree of several of them being left alive in my orchard, viz: *Barthlett, Buffum, Bourre Giffard, Osband's Saucier, Dearborn's Seedling, Stevens' Gansac, White Doyenne, Bourre Diez, Groat Moreau, Easter Bearer, Vicar, Brandywine, Doyenne d'Été, Belle Lucrative, Kingsessing, Bostüzer, St. Michael Archangel.* I know of no preventive or remedy. Cutting and burning does no perceptible good.

PLUMS.

The *Chickasaw* (in many sub-varieties), *Minor, Accata* and *Wild Goose* are profitable. The finer sorts are too much infested with Curculio to warrant their cultivation by others than amateurs.

RASPBERRIES.

All the Cap varieties are fairly successful. The others, except in the northwest part of the State, succumb to our long summers.

STRAWBERRIES.

The *Charles Downing* and *Wilson's Albany* are the best here, though several other sorts, such as *Green Prolific, Kentucky* and *Dowager* do very well.

3d and 4th. I am unprepared to give any replies to your circular under these heads.

5th. The chief obstacles to successful fruit culture in this State are the Fire Blight of pear trees, and to some extent of apple trees. The peach tree Borer, and late spring frosts—the latter causing a failure of the peach crop one year in four on an average, and the last impairing the vigor of the trees and making them shattered. The Curculio, which destroys more or less of apples and peaches, and prevents the profitable cultivation of nectarines and all but a few sorts of plums; and the grape rot, which is generally destructive of all kinds except those of the *V. rotundifolia* species, though the *Delaware, Ives*, and *Norton* are much affected.

6th. Deep plowing is the best preparation of the soil into which fruit trees are to be transplanted. Digging large holes to be filled with compost is worse than useless labor. Annual surface manuring is advantageous. Trees should be set close enough to shade the entire surface of the ground at mid-day, when in bearing, and trained so low that the limbs will be just out of reach of swine and sheep. An orchard should be well cultivated till it comes into bearing; but if cultivation is neglected for a while till the surface becomes filled with the fibrous roots of the trees it should not be plowed in a dry, hot time, or perhaps till the leaves have shed, or say, till trees could be transplanted with safety. Hogs are very useful in a bearing orchard to destroy insect larvæ, and sheep to keep

down whatever vegetation would compete with the trees, where cultivation is not practiced.

7th, 8th, and 9th. I have nothing to offer under these heads.

All of which is respectfully submitted.

S. J. MATTHEWS.

Chairman State Fruit Committee.

Monticello, August 3d, 1877.

Report from Mississippi.

To P. BARRY, Esq., *Chairman General Fruit Committee Rochester, New York:*

1st. AS to species of fruit cultivated, I would say, nearly all the larger fruits are grown more or less successfully, and some of the smaller, viz: of large fruits, the apple, pear, peach, nectarine, apricot, plum and quince. From latitude thirty-three degrees south to the coast, the fig does well. In the southern portion of the State, near the Gulf coast, oranges and lemons thrive, and are being cultivated for market and home use. Of the small fruits, grapes, strawberries, raspberries and blackberries do well. Cherries, gooseberries and currants do not generally succeed, though in the northern portion of the State the *Morella* cherry sometimes bears good crops.

2d. *Varieties*.—Apples—Most of what are called summer and autumn varieties, at the north, succeed well here, but are all summer apples with us. Northern winter apples fail us entirely here. They blister, or speck, and fall from the tree in August and September. Southern seedlings are being tried, and doing well, but even they are somewhat particular as to soil and locality, the same variety succeeding in some soils and localities and failing in others. I believe, however, northern apples exhibit the same features there. *Early Harriet* and *Red June* bear early, and well, fully maintaining their reputation. *Red Astrachan* does well, is large and beautiful, rather acid, comes into bearing late, but the best early market apple here. *Betau*, *Great Bough*, *Williams' Favorite*, all have been tried and do well; second early. *Julian* and *Gravenstein* do well. *Hors*, the best apple here for drying, also one of the best for general purposes; July and August. *American Summer Parmatin*, fine, late, July and August. *Equinately*, *Buckingham* and *Vates* generally do well; autumn. *Shockley*, the best keeper we have, of medium size and quality. *Stephenson's Winter* does well in the north-west, and is being tried here (Canton). Many others are being tried. Too early to report definitely upon them.

PEARS

I mention with some hesitation; I hardly know what to say. Since my last the blight has destroyed thousands of trees, especially in the winter of '75 and '76 when most severe. *Barthlett* nearly swept from the State. Even the *Sokol* suffered considerably. *Winter Nolis*, *Duchess d'Angouleme*, *Julienne*, and *Jefferson*, the last a native of this State, seem to have stood equally as well as the *Sokol*, though all have suffered considerably. The *Duchess* has borne good crops this year, and altogether is our best and most reliable pear. The *Jefferson* has proved most profitable, though very inferior in quality. All the above pears maintain their usual excellence when they have a crop, and excepting the blight, the crop is about as certain here

as elsewhere. *Doyenne Boussock*, *Belle Lucrativ*, *Barthlett*, *Bonne Giffard*, *Doyenne d'Ete*, *Dearborn's Seedling*, *St. Ghislain*, *St. Michael Archangel*, *Horell*, *Bonne Superfin*, *Urbanista*; all excellent, but more or less subject to blight, especially *Belle Lucrativ*. *Louise Bonn of Jersey* bears heavily, but inferior quality. *Buffum*, first rate here, but blights badly. *White Doyenne* when perfect, splendid, but frequently cankers. *Vicar of Winkfield (Le Caré)* perfectly worthless. *Easter Bonne*, but little better. *Madeleine* blights badly. *Clapp's Favorite* blights. *Flemish Beauty* generally excellent in quality, somewhat liable to blight.

PEACHES.

Beatrice, *Alexander*, and *Amsden*, all first rate early fruits. *Beatrice* ships and sells well. Others untested yet for market. *Alexander*, the largest of the three and maybe a day or two earlier than *Beatrice*. *Hall's* bears well, but rots more or less in all sections. *Louise* and *Early Rivers*, excellent in quality, promise well. Of the older varieties, *Truth*, *Tillotson*, *Crawford's Early*, *Yellow St. John*, *George the Fourth*, *Crawford's Late*, *St. Stephens* or *Columbia*, among the freestones. *Old Micaou*, *Lemon*, *Chinese* and *Heath*, among the clingstones are generally cultivated, and maintain their high character. *Chinese Cling*, in elevated, airy situations, with open head and a good distance for the trees is perhaps the grandest peach in cultivation. In close situations and damp soils it rots badly. Many other varieties are being cultivated here and there, and a great many seedlings also of various degrees of merit, but nothing as yet to supersede the above. These all ripen by the first of September. We greatly need really good September and October varieties.

PLUMS.

The *Gage* varieties do not succeed. *Wild Goose*, and varieties of that type, do well. We have many native varieties, beginning with the *Chickasaw*, from which, with judicious selection, a succession can be had from early May until late August, some varieties of them excellent in quality.

QUINCES.

The *Orange* does moderately well, but the borer and blight both affect it seriously.

APRICOTS.

Early Golden and *Moorpark* are fine, but the crop is unreliable, by reason of the late frosts.

NECTARINES.

Red Roman succeeds best.

FIGS.

Chestnut very sweet, but the *Lemon* worth all the others for general cultivation. The *Large Purple* does moderately well.

GRAPES.

Concord and *Ives* most reliable, except the *Scuppernon* family, which are worth all the others.

STRAWBERRIES.

Wilson's Albany, the most reliable, the only market berry for long distances. *Mary Stewart* and *Louise's White*, both excellent, also *Honey's Seedling*, all superior in flavor.

but vines do not stand the sun so well, and are not so reliable or so productive as *Wilson*. A good many new varieties being tested

RASPBERRIES.

The *Black Cap* family far the most reliable. *Autbergs* succeed only moderately well. This fruit is not so generally cultivated as it should be.

BLACKBERRIES

Lorton does well. *Wilson's Early* being tried. Wild ones so abundant, the cultivated varieties not much grown.

3d. The *Porter* peach, described in last report, the only new variety worth mentioning; promises well.

4th. SYNONYMS.—Nothing to offer under this head

5th. The borer and curculio infest the peach and other stone fruits; cutting out the borer the usual remedy. None known or tried for the curculio, except turning hogs in the orchard. The apple tree borer infests our apple trees, particularly *Early Harvest* variety. The aphid (woolly) is abundant in old orchards. Washing trees with strong soapsuds sometimes tried, but generally nothing tried for the aphid. Pear and quince trees blight. No remedy known.

6th. No special pruning is generally given, except to thin out the heads of trees and remove dead branches. The pyramidal form is sometimes tried for pear trees. Grapes generally trained to stakes, except *Scuppernon*s, which are trained on arbors. The cultivation is done by the plow and hoe. Keeping down the weeds and keeping the soil loose, the only system practised.

7th. Winter apples usually kept in barrels, but there are usually not many to keep

8th. The one-third bushel box is best for shipping peaches, apples and pears. For grapes and berries the octagon basket (quart) twenty four to the crate is mostly used

9th. STATISTICS.—Cannot furnish them. Have applied to various railroad and express agents in parts of the State where heaviest shipments are made, but cannot get reports. I know that fruit culture is increasing, and that many thousand boxes of fruit, especially peaches, are sent annually, in fruit season, from Terry, Crystal Springs, and Hazelhurst, also from this and other points, and some of the fruit is very fine. My crop of pears this year was over eight hundred boxes. The demand for fruit trees also is increasing.

WM. H. CASSELL,

Chairman

CANTON, Miss., August 25, 1877

REPORT OF THE COMMITTEE
ON
REVISION OF THE CATALOGUE OF FRUITS.

To the President and Members of the American Pomological Society :

GENTLEMEN:—Your Committee on revision of the catalogue of fruits, respectfully report, that after the adjournment of the last meeting of the Society, held in Chicago, Ill., September, 1875, the several State and Territorial reports presented at that time and the discussion on fruits during that meeting, were carefully examined and changes were made in the Catalogue of fruits in accordance with the recommendations contained therein. The reports were relied upon chiefly in making the changes, but even these were rejected when there was any question as to their correctness.

Considerable difficulty has been experienced in obtaining trustworthy information about varieties, especially in the newer States where there is but a limited experience, and where the means of communication between the different sections are very imperfect.

These difficulties, however, will be growing less formidable every year.

Forty varieties of apples were added and ten varieties were stricken out.

These ten varieties are as follows, viz :

Brookes' Pippin believed to be synonymous with *Newtown Pippin*.

Golden Russet of Massachusetts, supposed to be same as *Hunt Russet*.

Goodale first inserted by error—there is no such variety.

Large Yellow May of Tennessee, supposed to be a synonym of some other variety.

Walbridge, reported from Ill. as a synonym of *Edgar Red Streak*, which was inserted in its place.

Fenner Sweet, *Hix's White*, *Peaked Sweeting*, *Santa*, were stricken out as not having sufficient merit or being purely local.

There were added four varieties of crabs; one of apricots; three of blackberries; one of gooseberry; seventeen of peaches; ten of pears; five of plums, and eight of strawberries.

The Catalogue now contains eight hundred varieties of fruit, viz :

Apples, - - -	293	Crabs, - - -	13
Pears, - - -	104	Plums, - - -	63
Peaches, - - -	87	Cherries, - - -	38
Apricots, - - -	11	Nectarines, - - -	6
Quinces, - - -	4	Figs, - - -	18
Mulberries, - - -	5	Currants, - - -	13
Gooseberries, - - -	9	Blackberries, - - -	7
Raspberries, - - -	22	Strawberries, - - -	31
Native Grapes, - - -	38	Foreign Grapes, - - -	33
Pomegranates, - - -	4	Oranges and Lemons, - - -	5
Total, - - -		804	

This may be regarded as a long list, but when we consider that it represents about fifty different States and Territories, extending from Nova Scotia to the Pacific coast, embracing so many varieties of soil, climate and other conditions affecting fruit culture, we must admit that the list is not unreasonably long. It is possible, however, that in some of the States the number might be cut down with advantage, and no doubt will be at the next revision.

There are several States, especially at the South and West, notably Virginia, North Carolina and Georgia, in which there exists great differences of soil, climate, elevation, &c. It is claimed for them that they should have three columns in the Catalogue to admit of a classification of their fruits adapted to their several districts. This has been duly considered by your Committee, and whilst the importance of such a classification is admitted, no definite action has been taken in regard to it. It seems to be difficult to provide for these local distinctions without extending the Catalogue to such a degree as to affect its convenience for reference. Some plan may be suggested that will accomplish the desired result without changing the present arrangement of columns.

Respectfully submitted,

P. BARRY,

Chairman.

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	Merson's Early	m.	r.	y.	v. 15	K.	S.	Am.												
2	Alexander	l.	r. c.	r. s.	v. 15	K. M.	E. A.	Rus.	*	*	*	*	*	*	*	*	*	*	*	*
3	American Beauty	l.	r. ob.	y. r.	v. 15	F. M.	W.	Am.												
4	American Golden Pippin	l.	r. ob.	g. y.	v. 15	F. M.	W.	Am.												
5	American Summer Pearmain	m.	ob.	y. r.	v. 15	F.	S.	Am.												
6	Arnold's Beauty	m.	fl.	y. r.	v. 15	F.	W.	Am.												
7	Aromatic Carolina	l.	fl.	y. r.	v. 15	F.	A.	Am.												
8	Autumn Bough	m.	r. c.	g. y.	v. 15	F.	E. A.	Am.												
9	Autumnal Swaar	m.	r. ob.	g. y.	v. 15	F.	L. A.	Am.												
10	Bailey Sweet	l.	r. c.	r. s.	v. 15	F. M.	L. A.	Am.												
11	Baker	l.	r. ob.	y. r.	v. 15	K. M.	W.	Am.												
12	Baldwin	l.	r. c.	r. s.	v. 15	F. M.	W.	Am.												
13	Baltimore <i>Cobb's Gilliflower, Mahaska.</i>	m.	r. c.	r. y.	v. 15	F. M.	W.	Am.	**	*	*	*	*	*	*	*	*	*	*	*
14	Baltzley	l.	r. ob.	y.	v. 15	F. M.	A.	Am.												
15	Beauty of Kent	l.	r. c.	r. s.	v. 15	K. M.	L. A.	Eng.			*									
16	Belden Sweet	m.	r. c.	y.	v. 15	F.	W.	Am.			*									
17	Belmont	l.	r. c.	y. r.	v. 15	F. M.	W.	Am.												
18	Ben Davis <i>New York Pippin.</i>	l.	r. c.	y. r.	v. 15	K. M.	W.	Am.												*
19	Benoni	m.	r. ob.	y. r.	v. 15	F. M.	S.	Am.												
20	Bentley's Sweet	m.	r. ob.	g. y.	v. 15	F. M.	W.	Am.												
21	Berkshire Spy	m.	r. c.	r. s.	v. 15	F.	E. W.	Am.												
22	Bethlehemite	l.	r. ob.	y. r.	v. 15	F. M.	W.	Am.												
23	Bevan's Favorite	m.	fl. c.	y. r.	v. 15	F.	S.	Am.												
24	Black Apple <i>Jersey Black.</i>	m.	fl.	d. r.	v. 15	F.	W.	Am.												
25	Blackshear	l.	r.	y.	v. 15	F. M.	W.	Am.												
26	Blenheim Pippin	l.	r. ob.	y. r.	v. 15	F. M.	W.	Eng.	**											
27	Blue Pearmain	l.	r. c.	r.	v. 15	M.	W.	Am.	*	*	*	*	*	*	*	*	*	*	*	*
28	Bonnie	l.	r. ob.	y. r.	v. 15	M.	L. A.	Am.												
29	Bourassa	m.	r. c.	y. r.	v. 15	M.	L. A.	Ger.												
30	Bower's Nonpareil	l.	fl.	y. r.	v. 15	F. M.	W.	Am.												
31	Bowling's Sweet	m.	r.	y. r.	v. 15	M.	L. A.	Am.												
32	Broadwell	m.	r. c.	g. y.	v. 15	F. M.	L. A.	Am.	*											†
33	Brittle Sweet	m.	r. c.	r. s.	v. 15	F.	E. A.	Am.												
34	Brown <i>Nottingham Brown.</i>	l.	fl.	r. s.	v. 15	F. M.	L. A.	Am.												
35	Bruce's Summer	l.					S.	Am.												
36	Buckingham <i>Fall Queen of Kentucky, Bachelor, Equi- nobly.</i>	l.	r. ob.	y. r.	v. 15	F. M.	E. W.	Am.												
37	Buff	l.	r. ob.	y. r.	v. 15	F.	W.	Am.												
38	Bullington's Early	m.	fl.	y.	v. 15	F.	S.	Am.												
39	Bullock's Pippin <i>American Golden Russet.</i>	s.	r. c.	y. rus.	v. 15	F. M.	W.	Am.												
40	Burlington Pippin	m.	fl. c.	y. r.	v. 15	F. M.	W.	Am.												
41	Calkins' Pippin	l.	r. c.	y. r.	v. 15	F. M.	W.	N. S.	*											
42	Canak Sweet	m.	r. ob.	y.	v. 15	F. M.	W.	Am.												
43	Campfield	m.	r. ob.	g. y.	v. 15	M. K.	W.	Am.												
44	Canada Reinette	l.	r. c.	g. y.	v. 15	F. M.	W.	F.	*	*	*	*	*	*	*	*	*	*	*	*
45	Canon Pearmain	m.	r. c.	r. s.	v. 15	F.	W.	Am.												
46	Carolina Red June	m.	r. c.	r. s.	v. 15	F. M.	S.	Am.												
47	Carolina Watson	m.	fl. c.	g. y. r.	v. 15	M.	S.	Am.												
48	Carter's Blue	l.	r. ob.	g. r.	v. 15	F. M.	E. A.	Am.												
49	Cane Creek Sweet	m.	r.	y.	v. 15	F.	S.	Am.												
50	Chatahoochee	m.	fl.	y.	v. 15	M.	W.	Am.												
51	Chenango Strawberry <i>Shawood's Favorite.</i>	m.	ob. c.	g. r.	v. 15	F. M.	E. A.	Am.	*	*	*	*	*	*	*	*	*	*	*	*
52	Clark's Pearmain	m.	r. ob.	y.	v. 15	M.	W.	Am.												
53	Clayton	l.	r. c.	y. r.	v. 15	F. M.	W.	Am.												
54	Clyde Beauty	l.	r. c.	g. r.	v. 15	F. M.	W.	Am.												
55	Cooper	l.	r. ob.	g. y.	v. 15	M.	L. A.	Am.	*											
56	Cooper's Market	m.	r. c.	y. r.	v. 15	M.	W.	Am.												
57	Cooper's Early White	m.	r.	y.	v. 15	M.	A.	Am.												
58	Cogswell	m.	r. ob.	y. r.	v. 15	F. M.	W.	Am.												
59	Cole's Quince	l.	r. ob.	g. y.	v. 15	F. M.	W.	Am.			*									*

2 Moderate bearer; showy.
3 Slender grower, but healthy.
13 A hardy tree; very productive.

15 A coarse, showy fruit.
17 Fine for table; too tender for shipping.
18 Valuable shipping sort.

20 Fine winter variety.
22 Resembles Newtown Spitzberg.
27 I liable to drop, at the West.

and 49°.

II. CENTRAL DIVISION Between 35° and 42°.

III SOUTH. DIV. Bet. 28° and 35°.

NUMBER.	Minnesota.	Dakota.	Montana.	Wyoming.	Iaho.	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								*	*			*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
39								**	**	*		*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
40								*	*			*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
41								*	*			*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
42								*	*			*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
43								*	*			*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
44								*	*			*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
45								*	*			*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
46								**	**	*		*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
47								*	*			*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
48								*	*			*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
49								*	*			*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
50								*	*			*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
51								*	*			*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
52								*	*			*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
53								*	*			*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
54								*	*			*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
55								*	*			*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
56								*	*			*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
57								*	*			*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
58								**	**	*		*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
59								**	**	*		*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

43 Valued for stock and cider.

46 Esteemed South and West.

48 Valued at the South.

NUMBER.	NAMES.	DESCRIPTION.						I.—NORTH 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.	
60	Colvert	l.	r.ob.	y. r.	v. g.	F. M.	L. A.	Am.	*												
61	Cornell's Fancy	m.	ob.	y. r.	v. g.	F. M.	L. A.	Am.													
62	Cracking	l.	r.ob.	y.	v. g.	K.	L. A.	Am.													
63	Creek	m.	fl.c.	y. r.	v. g.	F. M.	W.	Am.													
64	Cross	l.	r.ob.	y. r.	v. g.	F. M.	S.	Am.													
65	Cullasaga	m.	r. c.	y. s.	v. g.	M.	W.	Am.													
66	Curtis Sweet	l.	r. c.	y. r.	v. g.	K.	L. A.	Am.													
67	Danvers' Winter Sweet	m.	r.ob.	y.	v. g.	F. M.	W.	Am.													
68	Dean	m.	fl.	y. s.	v. g.	F. M.	E. A.	Am.			*										
69	Disharoon	m.	r. c.	y. r.	v. g.	F. M.	A.	Am.													
70	Domine	m.	r.ob.	y. r.	v. g.	F. M.	W.	Am.													
71	Drap d'Or	l.	r.ob.	y.	v. g.	F.	S.	Ger.													
72	Dutch Mignonne	m.	r.ob.	r. s.	v. g.	M.	W.	Ger.													
73	Duchess of Oldenburg	m.	r.ob.	y. r.	v. g.	M.	S.	Rus.			*										*
74	Dyer, or Pomme Royal	m.	r.	y. y.	v. g.	F.	E. A.	F.			*										*
75	Early Harvest	m.	r.ob.	y. y.	v. g.	F. M.	S.	Am.			*										*
76	Early Red Margaret	m.	r.	r. s.	v. g.	F. M.	S.	Ger.			*										*
77	Early Joe	s.	fl.	y. r.	v. g.	F.	S.	Am.			*										*
78	Early Pennock	l.	r. c.	y. r.	v. g.	M.	S.	Am.			*										*
79	Early Strawberry	s.	r.	r. s.	v. g.	F.	S.	Am.			*										*
80	Early Ripe	m.	r.ob.	y.	v. g.	F.	S.	Am.			*										*
81	Edgar Red Streak <i>Walbridge.</i>	l.	r.ob.	y. r.	v. g.	F.	W.	Am.													*
82	Edwards' Early						S.	Am.													
83	English Russet <i>Poughkeepsie Russet.</i>	m.	r. c.	y. rus	v. g.	F. M.	W.	Eng.			*										*
84	Esopus Spitzenberg	l.	ob.	y. r.	v. g.	F. M.	W.	Am.			†										*
85	Eustis	m.	r.ob.	r. s.	v. g.	F.	E. A.	Am.			*										*
86	Eutaw						A.	Am.													*
87	Evening Parly	m.	fl.	r.	v. g.	F. M.	W.	Am.													*
88	Ewalt	l.	r.	y. r.	v. g.	M.	W.	Am.													*
89	Excel	l.	ob.c.	y. r.	v. g.	F. M.	W.	Am.													*
90	Fallwater <i>Fernvale, Tulpehocken.</i>	l.	r. c.	y. y.	v. g.	M.	W.	Am.													*
91	Fall Harvey	l.	r.ob.	y. y.	v. g.	M.	L. A.	Am.			*										*
92	Fall Jenning	l.	fl.	y. y.	v. g.	M.	E. A.	Am.			†										*
93	Fall Orange	l.	r.	y. r.	v. g.	K. M.	L. A.	Am.													*
94	Fall Pippin <i>Holland Pippin, crimson y.</i>	l.	r.ob.	y. y.	v. g.	F. M.	L. A.	Am.			†										*
95	Fall Queen, or Hass, Gros Pommier	m.	ob.c.	y. r.	v. g.	F. M.	A.	Am.													*
96	Fall Wine	m.	r.ob.	r. y.	v. g.	F.	L. A.	Am.													*
97	Fameuse <i>Pomme de Neige, Snow Apple.</i>	m.	r.ob.	r. s.	v. g.	F. M.	W.	F.			*										*
98	Family	m.	fl. c.	y. r.	v. g.	M.	S.	Am.													*
99	Fanny	m.	fl.	r. s.	v. g.	F. M.	S.	Am.													*
100	Ferdinand	l.	fl.	o. y.	v. g.	M.	A.	Am.													*
101	Ferris	m.	r. fl.	y. r.	v. g.	F. M.	W.	Am.													*
102	Fink	m.	fl.	y. r.	v. g.	M.	L. W.	Am.													*
103	Fourth of July	m.	r.ob.	r. s.	v. g.	M.	S.	Ger.													*
104	Foust's Winter						W.	Am.													*
105	Foundling	m.	r.ob.	y. r.	v. g.	F.	A.	Am.			†										*
106	Fulton	m.	fl.	y. y.	v. g.	M.	W.	Am.			*										*
107	Gabriel	m.	r.ob.	r. y.	v. g.	M.	L. A.	Am.													*
108	Garden Royal	m.	r.ob.	y. r.	v. g.	F.	S.	Am.			*										*
109	Garretson's Early	m.	r. c.	y.	v. g.	K.	A.	Am.													*
110	Gilpin <i>Carthorse, Little Romanite.</i>	s.	r. c.	y. r.	v. g.	M.	W.	Am.			*										*
111	Gladney's Red	m.	r.	r. s.	v. g.	F. M.	W.	Am.													*
112	Goff	l.	fl.	y. r.	v. g.	K. M.	S.	Am.													*
113	Golden Dixie	m.	r.ob.	y. y.	v. g.	F. M.	S.	Am.													*
114	Golden Russet, of Western New York	m.	r.ob.	y. rus	v. g.	F. M.	W.	Am.													*
115	Golden Sweet	l.	r.	y. y.	v. g.	F. M.	S.	Am.			*										*
116	Granite Beauty	l.	r.ob.	y. r.	v. g.	F. M.	W.	Am.			†										*
117	Gravenstein	l.	r.ob.	y. r.	v. g.	F. M.	L. A.	Ger.			*										*
118	Green Cheese	m.	fl.	y. y.	v. g.	F. M.	W.	Am.			*										*
119	Green Sweet	m.	r.ob.	y. y.	v. g.	K. M.	W.	Am.													*
120	Grimes' Golden	m.	r.ob.	y. y.	v. g.	F.	W.	Am.													*

70 Productive and hardy.

73 One of the most hardy varieties.

74 Valued for dessert.

75 Succeeds best on strong soils.

77 A delicious table sort; tree of small growth.

78 Popular market sort.

79 Continues a long time ripening; often called Red Juneating.

Number.	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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95 A hardy tree; one of the best for the North and West.
102 Valuable as a very late keeper.

103 Very hardy tree and handsome fruit.
108 Of a delicious pear flavor.

117 Ripens early and keeps late.
118 One of the best South.

NUMBER.	NAMES	DESCRIPTION.						1.—NORTH. DIVISION—Between 42°												
		SIZE.	FORM.	COLOR.	QUANTITY.	USE.	SEASON.	ORIGIN.	Nova Scotia.	New Brunswick.	Maine.	New Hampshire.	Vermont.	Massachusetts.	Rhode Island.	Connecticut.	New York.	Ontario.	Michigan.	Wisconsin.
121	Gully	m.	fl.	g. y.	v. g.	F.	W.	Am.												
122	Hall	y.	fl.	y. r.	v. g.	F.	W.	Am.												
123	Hamilton	l.	r.	r. y.	v. g.	F. M.	A.	Am.												
124	Haskell Sweet	m.	fl.	g. y.	v. g.	F.	E. A.	Am.												
125	Hawthornden	m.	r. ob.	g. y.	g.	K. M.	E. A.	F.												
126	Hartford Sweet	l.	r. ob.	r. s.	v. g.	M.	W.	Am.												
127	Hewes' Virginia Crab	s.	r.	y. r.	v. g.	Cider	L. A.	Am.												
128	Highby Sweet	m.	r. c.	y. r.	v. g.	F.	L. A.	Am.												
129	Hightop Sweet	s.	r.	g. y.	v. g.	F. M.	S.	Am.												
130	Hockett's Sweet	m.	r. ob.	y. r.	v. g.	K.	W.	Am.												
131	Holland Pippin	l.	r.	g. y.	v. g.	K. M.	L. A.	F.												
132	Holly	m.	r. ob.	y. r.	v. g.	K.	W.	Am.												
133	Hoover	m.	r.	y. r.	v. g.	F. M.	W.	Am.												
	<i>Black Coal.</i>																			
134	Horn	m.	fl.	g. r.	v. g.	F. M.	L. W.	Am.												
135	Horse	l.	r.	y. r.	g.	K. M.	S.	Am.												
	<i>Haus.</i>																			
136	Hubbardston Nonsuch	l.	r. c.	y. r.	v. g.	F. M.	W.	Am.	*	*	*	*	*	*	*	*	*	*	*	*
137	Hunt Russet	m.	r. ob.	y. rus.	v. g.	F. M.	W.	Am.												
138	Huntman's Favorite	l.	ob.	y.	v. g.	F. M.	W.	Am.												
139	Hurlbut	m.	r. ob.	y. r.	v. g.	F. M.	L. A.	Am.												
140	Irish Pippin	m.	r.	r. s.	v. g.	F. M.	E. W.	Am.												
141	Jefferson County	m.	r. ob.	y. r.	v. g.	F. M.	W.	Am.												
142	Jelleris	m.	r. ob.	y. r.	v. g.	F. M.	E. A.	Am.												
143	Jersey Sweet	m.	r.	y. r.	v. g.	F. M.	E. A.	Am.												
144	Jewett's Fine Red	m.	r. ob.	r.	v. g.	F. M.	W.	Am.	*	*	*	*	*	*	*	*	*	*	*	*
145	Jonathan	m.	r. c.	y. r.	g.	F. M.	W.	Am.												
146	Julian	m.	fl. c.	w. r.	v. g.	K.	S.	Am.												
147	Junaluskee	m.	r. ob.	g.	v. g.	F. M.	W.	Am.												
148	Kentucky	l.	r. c.	y. r.	g.	M.	L. A.	Am.												
149	Kentucky Red Streak	m.	r. c.	g. y. r.	g.	F. M.	A.	Am.												
	<i>Burdford's Best.</i>																			
150	Keswick Codlin	r.	r. c.	g. y.	v. g.	K. M.	E. A.	En	*	*	*	*	*	*	*	*	*	*	*	*
151	Key's Fall	m.	r.	rus.	v. g.	F. M.	E. W.	Am.												
152	Kinnaird's Choice	m.	fl.	y. r.	g.	F. M.	W.	Am.												
153	Kinney's Winter						W.													
154	King of Tompkins County	l.	r.	y. r.	v. g.	F. M.	W.	Am.	*	*	*	*	*	*	*	*	*	*	*	*
155	Kirkbridge White	m.	ob.	g. y.	g.	K. M.	E. A.	Am.												
156	Klaproth	m.	fl.	y. r.	g.	K. M.	E. A.	Am.												
157	Lady Apple	s.	fl.	y. r.	v. g.	F. M.	W.	F.												
158	Lady's Sweet	l.	r.	y. r.	v. g.	F. M.	W.	Am.												
159	Lansingburg	m.	r. fl.	y. r.	g.	M.	W.	Am.												
160	Large Yellow Bough	l.	ob.	g. y.	v. g.	F. M.	S.	Am.	*	*	*	*	*	*	*	*	*	*	*	*
	<i>Summer Sweet Bough.</i>																			
161	Late Strawberry	m.	r.	y. r.	v. g.	F. M.	L. A.	Am.												
	<i>Autumn Strawberry.</i>																			
162	Lawyer	l.	r. ob.	y. r.	v. g.	F. M.	W.	Am.												
163	Limber Twig	m.	r. ob.	y. r.	g.	M.	W.	Am.												
164	Long Island Russet	m.	r.	rus.		K.	W.	Am.												
165	Loudon Pippin	l.	fl.	y. r.	g.	M.	W.	Am.												
166	Lowe's	l.	r. c.	g. y.	v. g.	F. M.	E. A.	Am.	*	*	*	*	*	*	*	*	*	*	*	*
	<i>Orange, Tallot Pippin, Queen Anne, Michigan Golden Pippin</i>																			
167	Lyscom	l.	r.	g. y.	g.	F. M.	E. A.	Am.	*	*	*	*	*	*	*	*	*	*	*	*
168	Maiden's Blush	m.	r.	g. y.	g.	K. M.	E. A.	Am.												
169	Major	l.	r. fl.	g. r.	v. g.	F. M.	W.	Am.												
170	Mangum	m.	r. ob.	y. r.	v. g.	F. M.	W.	Am.												
171	Mann	m.	r. ob.	y. r.	v. g.	F. M.	W.	Am.												
172	Mamomet	m.	r. ob.	y. r.	v. g.	F. M.	E. A.	Am.												
173	Mary Womac	l.	r. fl.	y. r.	v. g.	F. M.	W.	Am.												
174	Marquis of Lome	l.	r. fl.	g. r.	v. g.	F. M.	W.	S. S.												
175	Marston's Red Winter	m.	r. c.	r. s.	v. g.	F.	W.	Am.												
176	Mason's Stranger	m.	fl.	y. r.	v. g.	F. M.	W.	Am.												
177	Mattamusket	s.	fl.	y. r.	g.	F. M.	W.	Am.												
178	Maverick Sweet	m.	r. ob.	y. r.	v. g.	M.	W.	Am.												
179	Maxy	m.	r. c.	g. r.	g.	F. M.	W.	Am.												

125 One of the most profitable of market sorts.
 127 Valued only for cider.
 128 A delicious dessert apple.

155 A hardy tree and fine fruit. Supposed to be identical with Golden Russet of Mass., but not fully decided.

163 Very valuable for market or stock.
 164 Hardy and productive South-west.
 168 A profitable market sort.
 172 A valued sweet apple.

and 49°.		II.—CENTRAL DIVISION Between 35° and 42°.													III. SOUTH DIV.—b. 28° and 35°.																													
NUMBER.		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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129									*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
130									*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
131									*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
132									*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
133									*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
134									*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
135									*				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
136							*		*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
137									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
138									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
139									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
140									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
141									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
142									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
143									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
144									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
145									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
146									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
147									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
148									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
149									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
150									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
151									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
152									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
153									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
154									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
155							*		*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
156									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
157									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
158									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
159									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
160									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
161	*								*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
162									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
163									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
164									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
165									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
166									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
167									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
168	*								*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
169									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
170									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
171									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
172									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
173									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
174									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
175									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
176									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
177									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
178									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
179									*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

173 A seedling from Rambo, which it resembles.

NUMBER.	NAMES	DESCRIPTION.						I.—NORTH. 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.	
180	McAfee's Nonsuch <i>Large Striped Pearmain.</i>	l. r. ob.	y. r.	v. g.	F. M.	W.	Am.														
181	McLellan	m. r. ob.	y. r.	v. g.	F. M.	W.	Am.														
182	Mellinger	m. r. c.	r. s.	v. g.	F. M.	E. W.	Am.														
183	Melon	m. r. ob.	y. r.	b. g.	F. M.	W.	Am.														
184	Mexico	m. r. ob.	r. s.	v. g.	F. M.	A.	Am.														
185	Milan	m. r.	r. s.	v. g.	K. M.	W.	Am.														
186	Milden, or Milling	l. fl.	y. r.	v. g.	F. M.	A. W.	Am.														
187	Minister	l. ob.	r. s.	v. g.	K. M.	L. A.	Am.														
188	Mommonth Pippin <i>Red Cheek Pippin.</i>	l. fl.	y. r.	v. g.	F. M.	W.	Am.														
189	Moore's Sweet	m. r. ob.	r.	g.	K.	W.	Am.														
190	Mother	m. r. c.	y. r.	b. g.	F. M.	W.	Am.														
191	Munson Sweet <i>Orange Sweet.</i>	m. fl.	y.	g.	K. M.	L. A.	Am.														
192	Nansmond Beauty	m. r. ob.	r. s.	v. g.	F. M.	W.	Am.														
193	Newtown Pippin <i>Albion Pippin, Brook's Pippin.</i>	l. r. ob.	g. y.	v. g.	F. M.	W.	Am.														
194	Newtown Spitzenberg <i>Vanderer, of New York.</i>	m. r. ob.	y. r.	b.	F. M.	W.	Am.														
195	Nickajack	l. r. ob.	r. s.	v. g.	F. M.	W.	Am.														
196	Nonpareil Russet	m. r.	y. g.	v. g.	F. M.	W.	Eng.														
197	Northern Spy	l. r. c.	y. r.	b. g.	F. M.	W.	Am.														
198	Northampton	m. fl.	r. s.	v. g.	F.	E. W.	Am.														
199	Oconee Greening	m. ob.	y.	v. g.	A.		Am.														
200	Ohio Nonpareil	l. r. ob.	y. r.	v. g.	F. M.	L. A.	Am.														
201	Orange Pippin	m. ob.	y.	v. g.	F. M.	A.	Am.														
202	Ortley <i>White Bullfinch, Woolman's Lang.</i>	m. ob.	g. y.	v. g.	F. M.	W.	Am.														
203	Otoc Red Streak	m. r. ob.	y. r.	v. g.	F. M.	W.	Am.														
204	Peach Pond Sweet	m. fl.	r. s.	v. g.	F.	A.	Am.														
205	Peck's Pleasant	m. r.	g. y.	v. g.	F. M.	W.	Am.														
206	Perry Russet	m. r. c.	r. s.	v. g.	F. M.	W.	Am.														
207	Pewaukee	l. fl.	r. s.	v. g.	F. M.	W.	Am.														
208	Phillip's Sweet	m. r. ob.	r. s.	v. g.	F. M.	W.	Am.														
209	Pickard's Reserve	m. r. ob.	r. y.	v. g.	F.	W.	Am.														
210	Pilot	l. r. ob.	g. y. r.	v. g.	F. M.	W.	Am.														
211	Pittsburgh Pippin	l. fl.	g. y.	v. g.	F. M.	W.	Am.														
212	Pleasant Valley Pippin	m. r. ob.	g. y.	v. g.	F. M.	W.	Am.														
213	Plumb's Cider	m. r. c.	g. y. r.	v. g.	K. M.	A.	Am.														
214	Pomme Grise	s. r. ob.	y. ins.	h.	F.	W.	F.														
215	Porter	l. ob.	g. y.	h.	F. M.	W.	Am.														
216	Premium	m. r. c.	y.	v. g.	F. M.	E. W.	Am.														
217	President	l. r. ob.	y.	g.	F.	A.	Am.														
218	Primate	m. r. c.	g. y.	b.	F.	E. A.	Am.														
219	Progress	m. r. ob.	y.	g.	F. M.	W.	Am.														
220	Prother's Winter	m. c.	y. r.	g.	F. M.	L. A.	Am.														
221	Pryor's Red	l. r. ob.	y. r.	v. g.	F. M.	W.															
222	Pumpkin Sweet <i>Lyman's Pumpkin Sweet.</i>	l. r. obl.	y.	g.	K. M.	E. W.	Am.														
223	Pyle's Red Winter	l. r. ob.	r. s.	v. g.	F. M.	W.	Am.														
224	Ramsdell's Sweet	m. ob.	y. r.	v. g.	K. M.	L. A.															
225	Rambo	m. fl.	y. r.	v. g.	F. M.	L. A.	Am.														
226	Rawle's Genet	l. r. c.	y. r.	v. g.	F. M.	W.															
227	Red Astrachan	l. r.	y. r.	g.	K. M.	S.	F.														
228	Red Canada <i>Old Nonsuch, Richfield Nonsuch, Steele's Red Winter of some.</i>	m. r. ob.	y. r.	h.	F. M.	W.															
229	Red Cathedra	l. r. c.	y. r.	g.	F. M.	L. A.	Am.														
230	Red Crab	s. r.	r.		Cider	L. A.	Am.														
231	Red Rance	m. r. ob.	r. s.	v. g.	F. M.	E. W.	Am.														
232	Red Winter Pearmain <i>Bancombe.</i>	m. r. ob.	y. r.	g.	F. M.	W.	Am.														
233	Red Stripe	m. ob. c.	y. r.	g.	K. M.	S.	Am.														
234	Rhode Island Greening	l. r. ob.	g. y.	v. g.	F. M.	W.	Am.														
235	Rhodes' Orange	m. r. ob.	y. r.	g.	F.	S.	Am.														
236	Ribston Pippin	m. r.	y. r.	v. g.	F. M.	W.	Eng.														

183 One of the most delicious apples; tree a poor grower.
190 Esteemed where known.

195 This apple is known South and West by over forty different names.
200 Esteemed where known.

202 An old variety; extensively planted at the West twenty or more years since.

NUMBER.	and 49.	II.—CENTRAL DIVISION. Between 35 and 42.	III. SOUTH. DIV. Bet. 28 and 35
237	Minnesota.		
238	Dakota.		
239	Montana.		
240	Wyoming.		
241	Idaho.		
242	Washington.		
243	Oregon.		
244	Pennsylvania.		
245	New Jersey.		
246	Delaware.		
247	Maryland & D.C.		
248	Virginia.		
249	North Carolina.		
250	Ohio.		
251	Indiana.		
252	West Virginia.		
253	Kentucky.		
254	Tennessee.		
255	Illinois.		
256	Iowa.		
257	Missouri.		
258	Nebraska.		
259	Kansas.		
260	Colorado.		
261	Utah.		
262	Nevada.		
263	California.		
264	South Carolina.		
265	Georgia.		
266	Alabama.		
267	Florida.		
268	Indian Territory.		
269	Arkansas.		
270	Mississippi.		
271	Louisiana.		
272	Texas.		
273	New Mexico.		
274	Arizona.		

* A long keeper.

† Entirely distinct from Gilpin or Shockley.

NUMBER	and 49.	II. CENTRAL DIVISION. Between 35° and 42°.	III. SOUTH DIV. Bet. 28° and 35°.
297	Minnesota.		
298	Dakota.		
299	Montana.		
300	Wyoming.		
301	Idaho.		
302	Washington.		
303	Oregon.		
304	Pennsylvania.		
305	New Jersey.		
306	Delaware.		
307	Maryland & D. C.		
308	Virginia.		
309	North Carolina.		
310	Ohio.		
311	Indiana.		
312	West Virginia.		
313	Kentucky.		
314	Tennessee.		
315	Illinois.		
316	Iowa.		
317	Missouri.		
318	Nebraska.		
319	Kansas.		
320	Colorado.		
321	Utah.		
322	Nevada.		
	California.		
	South Carolina.		
	Georgia.		
	Alabama.		
	Florida.		
	Indian Territory.		
	Arkansas.		
	Mississippi.		
	Louisiana.		
	Texas.		
	New Mexico.		
	Arizona.		

II.—APPLES—CRABS.

NUMBER.	and 49.	II. CENTRAL DIVISION Between 35° and 42°.	III. SOUTH DIV.—Bet. 28° and 35°.
1	Minnesota.		
2	Dakota.		
3	Montana.		
4	Wyoming.		
5	Idaho.		
6	Washington.		
7	Oregon.		
8	Pennsylvania.		
9	New Jersey.		
10	Delaware.		
11	Maryland & D. C.		
12	Virginia.		
13	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.		

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. r.	v. g.	F. M.	E.	Am.												
3	Henskirke	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. NORTH 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.												

3 Of fine flavor.

7 Mainly valued for market

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

and 49°.		II.—CENTRAL DIVISION—Between 35° and 42°.		III.—SOUTH. DIV.—b. 28° and 35°.	
NUMBER.					
1	Minnesota.				
2	Dakota.				
3	Montana.				
4	Wyoming.				
5	Idaho.				
6	Washington.				
7	Oregon.				
8	Pennsylvania.				
9	New Jersey.				
10	Delaware.				
11	Maryland & D. C.				
12	Virginia.				
13	North Carolina.				
14	Ohio.				
15	Indiana.				
16	West Virginia.				
17	Kentucky.				
18	Tennessee.				
19	Illinois.				
20	Iowa.				
21	Missouri.				
22	Nebraska.				
23	Kansas.				
24	Colorado.				
25	Utah.				
26	Nevada.				
27	California.				
28	South Carolina.				
29	Georgia.				
30	Alabama.				
31	Florida.				
32	Indian Territory.				
33	Arkansas.				
34	Mississippi.				
35	Louisiana.				
36	Texas.				
37	New Mexico.				
38	Arizona.				

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.

and 49°.		II.—CENTRAL DIVISION—Between 35° and 42°.		III.—SOUTH. DIV.—B. 28° and 35°.	
NUMBER.					
1	Minnesota.				
2	Dakota.				
3	Montana.				
4	Wyoming.				
5	Idaho.				
6	Washington.				
7	Oregon.				
8	Pennsylvania.				
9	New Jersey.				
10	Delaware.				
11	Maryland & D. C.				
12	Virginia.				
13	North Carolina.				
14	Ohio.				
15	Indiana.				
16	West Virginia.				
17	Kentucky.				
18	Tennessee.				
19	Illinois.				
20	Iowa.				
21	Missouri.				
22	Nebraska.				
23	Kansas.				
24	Colorado.				
25	Utah.				
26	Nevada.				
27	California.				
28	South Carolina.				
29	Georgia.				
30	Alabama.				
31	Florida.				
32	Indian Territory.				
33	Arkansas.				
34	Mississippi.				
35	Louisiana.				
36	Texas.				
37	New Mexico.				
38	Arizona.				

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.						I.—NORTH. DIVISION—Between 42°												
		SIZE.	FORM.	COLOR.	CLASS.	USE.	SEASON.	ORIGIN.	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>Grafton, Yellow Spanish.</i>	l.	ob. h.	y. r.	B.	F. M.	M.	F.	*			*	*	*		*	*	*	*	*
6	Bigarreau of Mezel <i>Monstrueux 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, <i>Lulling</i>	l.	r. h.	b.	G.	F. M.		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	Empress Eugenie	m.	rob. h.	d. r.	D.	F. M.	M.	F.					*	*	*	*	*	*	*	*
20	Governor Wood	l.	r. h.	y. r.	H.	F. 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	Oscocla	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	Tecumseh	m.	ob. h.	d. r.	H.	M.	L.	Am.					*	*	*	*	*	*	*	*

8. A fine old variety, but by many supposed to be superseded. 14. Very hardy and productive. 17. Believed by many to be identical with Early May of the West; not fully settled.

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	I.—WEST. DIV. Between 37° and 49°.										II.—CENTRAL DIVISION. Between 35° and 42°.										III. SOUTH. DIV. Bet. 28° and 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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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.					I.—NORTH. 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 Versailles	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 Cash.</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.					I.—NORTH. 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.	r.	v. g.	K. M. L.	Am.	F.	*	*	*	*	*	*	*	*	*	*	*	*
3	Houghton	s.	o.	r.	g.	K. M.	E.	Am.	*	*	*	*	*	*	*	*	*	*	*	*
4	Mountain	l.	o.	r.	g.	M.	M.	Am.	*	*	*	*	*	*	*	*	*	*	*	*
5	Orange	m.	r.	r.	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.	r.	v. g.	K. M.	M.	Am.	*	*	*	*	*	*	*	*	*	*	*	*
9	Woodward's Whitesmith	l.	o.	g.	v. g.	K. M.	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.

NUMBER.	and 49.		II. - CENTRAL DIVISION Between 35° and 42°.		III. SOUTH DIV. Bet. 28° and 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	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	

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.	and 49°.		II. - CENTRAL DIVISION Between 35° 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	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
5	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
6	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
7	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
9	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

8 New and promising

9 One of 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.—NORTH, 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. l.	b.	v. g.	T. W.	L.	Am.								*	*	*	*	
7	Concord	l.	l. r.	b.	v. g.	T. M. W.	M.	Am.	*							*	*	*	*	**
8	Creveling	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. r.	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	Emuelan	m.	l.	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. Seedling.</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.	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	Norton's Virginia	s.	m. r.	b.	g.	W.	L.	Am.								*	*	*	*	*
29	Perkins	l.	r.	r.	v. g.	T. M.	E.	Am.								*	*	*	*	*
30	Peter Wylie <i>Doctor Wylie.</i>	m.	r.	w.	v. g.	T.										*	*	*	*	*
31	Rebecca	m.	s. r.	g.	v. g.	T.	M.	Am.		*						*	*	*	*	*
32	Salem <i>Rogers' No. 22.</i>	l.	r.	b.	g.	M.	M.	Am.	*	*	*	*	*	*	*	*	*	*	*	*
33	Scuppernon	l.	r.	r.	g.	W.	M.	Am.								*	*	*	*	*
34	Telegraph <i>Christie.</i>	l.	m. r. o.	b.	v. g.	T. M.	E.	Am.		*						*	*	*	*	*
35	Union Village <i>Ontario.</i>	l.	s. r. o.	b.	g.	M.	M.	Am.								*	*	*	*	*
36	Walter	m.	s. l.	r.	b.	T. M. W.	M.	Am.		*						*	*	*	*	*
37	Wilder— <i>Rogers' No. 4.</i>	l.	l. l.	b.	v. g.	T. M.	M.	Am.		*	*	*	*	*	*	*	*	*	*	*

1 Unreliable. 6 Hardy everywhere. 9 A promising white variety.
 3 Too small. 7 Succeeds everywhere. 10 Wants rich soil and high culture.
 5 Suited only to clayey loams and certain localities. 8 Bunches loose. 16 Liable to drop from the bunch.

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.	I.—WEST. DIV.—b. 37° and 49°										II.—CENTRAL DIVISION—Between 35° and 42°										III.—SOUTH. DIV.—b. 28° and 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								*	*	*											*								*	*	*							*			

17 Makes the finest of white wine. 21 Valued for dark wine. 34 The more known the better liked.
 18 Unreliable except in a few locations. 26 Vines require age to give perfect fruit.
 20 Valueless at the West.

XII—ORANGES AND LEMONS.

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	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.						I.—NORTH 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	Alexander	m.	F.	w.	s. j.	rs.	V. E.	Am.												
3	Alexandra Noblesse	l.	F.	w.	m. j. v.	rs.	M.	F.												
4	Amelia	l.	F.	w.	m. j. r.	r.	E.	Am.												
5	Amsden's June	m.	F.	w.	s. j.	rs.	V. E.	Am.												
6	Austin's Late Red	l.	C.	w.	j. v.	r.	L.	Am.												
7	Baldwin's Late	l.	F.	w.	j. m.	r.	L.	Am.												
8	Barnard	m.	F.	y.	j. v.	rs.	E.													**
9	Beer's Smock	l.	F.	y.	j. v.	rs.	L.	Am.												**
10	Bellegarde	l.	F.	g.	s. j.	rs.	M.	F.												*
11	Bergen's Yellow	m.	F.	y.	j. v.	r.	M.	Am.					*							*
12	Bordeaux	l.	C.	y.	j.	r.	E.	Am.												*
13	Briggs' May	m.	F.	w.	m.		V. E.	Am.												*
14	Catharine	l.	C.	y. g.	j. r.	r.	M.	Am.												*
15	Chinese Cling	l.	C.	g.	j. v.	r.	M.													*
16	Cole's Early Red	m.	F.	w.	m. j. r.	rs.	V. E.	Am.												*
17	Columbia	l.	F.	y.	j. v.	r.	M.	Am.						*			*			*
18	Con's Cling																			*
19	Coolidge's Favorite	l.	F.	w.	s. j. h.	rs.	M.	Am.					**	*	*	**	*			*
20	Cook's Late White	m.	F.	w.	m. j. y.		L.	Am.						*	*	*	*			*
21	Counts	l.	C.	w.	m. j.		M.	Am.								*	*			*
22	Crawford's Early	l.	F.	y.	j. v.	rs.	M.	Am.					*	*	*	*	*	*	*	*
23	Crawford's Late	l.	F.	y.	j. v.	rs.	L.	Am.					*	*	*	*	*	*	*	*
24	Crockett's Late White	m.	F.	w.	s.	r.	L.	Am.					*	*	*	*	*	*	*	*
25	Deming's Orange <i>Deming's Sept.</i>	l.	C.	y. v.	j. r.		L.	Am.												*
26	Druid Hill	l.	F.	g.	m. j. r.	rs.	V. L.	Am.									*			*
27	Duff Yellow	l.	C.	y.	m. j.	rs.	E.	Am.												*

1 This originated in South Carolina, and differs from the Missouri Amelia.
25 Resembles Lemon Cling.

15 Berckmans thinks it is same as Shanghai.

XII.—ORANGES AND LEMONS.

NUMBER.	I.—NORTH DIV.—b. 38° and 49°.		II.—CENTRAL DIVISION—Between 35° and 42°.		III.—SOUTH DIV.—b. 28° and 35°.	
	1	2	3	4	5	6
1	Minnesota.					
2	Dakota.					
3	Montana.					
4	Wyoming.					
5	Idaho.					
6	Washington.					
7	Oregon.					
8	Pennsylvania.					
9	New Jersey.					
10	Delaware.					
11	Maryland & D.C.					
12	Virginia.					
13	North Carolina.					
14	Ohio.					
15	Indiana.					
16	West Virginia.					
17	Kentucky.					
18	Tennessee.					
19	Illinois.					
20	Iowa.					
21	Missouri.					
22	Nebraska.					
23	Kansas.					
24	Colorado.					
25	Utah.					
26	Nevada.					
27	California.					
28	South Carolina.					
29	Georgia.					
30	Alabama.					
31	Florida.					
32	Indian Territory.					
33	Arkansas.					
34	Mississippi.					
35	Louisiana.					
36	Texas.					
37	New Mexico.					
38	Arizona.					

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., 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.	I.—NORTH DIV.—b. 38° and 49°.		II.—CENTRAL DIVISION—Between 35° and 42°.		III.—SOUTH DIV.—b. 28° & 35°.	
	1	2	3	4	5	6
1	Minnesota.					
2	Dakota.					
3	Montana.					
4	Wyoming.					
5	Idaho.					
6	Washington.					
7	Oregon.					
8	Pennsylvania.					
9	New Jersey.					
10	Delaware.					
11	Maryland & D.C.					
12	Virginia.					
13	North Carolina.					
14	Ohio.					
15	Indiana.					
16	West Virginia.					
17	Kentucky.					
18	Tennessee.					
19	Illinois.					
20	Iowa.					
21	Missouri.					
22	Nebraska.					
23	Kansas.					
24	Colorado.					
25	Utah.					
26	Nevada.					
27	California.					
28	South Carolina.					
29	Georgia.					
30	Alabama.					
31	Florida.					
32	Indian Territory.					
33	Arkansas.					
34	Mississippi.					
35	Louisiana.					
36	Texas.					
37	New Mexico.					
38	Arizona.					

NUMBER.	NAMES.	DESCRIPTION.						I.—NORTH 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.
28	Early Albert	m.	F.	w.	m.j.v	r	E.	F.												
29	Early Admirable	l.	F.	w.	m. j.	rg	r	M.	F.											
30	Early Beatrice	s.	F.	w.	m. j.	r	V. E.	Eng.												
31	Early Grosse Mignonne	m.	F.	w.	m.j.v	rg	r	E.	F.											
32	Early Louise	m.	F.	w.	m. j.	r	E.	Eng.												
33	Early Newington Free	l.	F.	g.	j. v.	rg	r	E.	Am.											
34	Early Rivers	l.	F.	p. y.	m. r.	r	E.	Eng.												
35	Early Tillotson	m.	F.	g.	m.j.r	r	V. E.	Am.												
36	Early York	m.	F.	w.	m.j.r	r	V. E.	Am.												
37	Eaton's Golden	m.	C.	y.	s. j.	r	L.	Am.												
38	Flewellen	l.	C.	y.	j. r.	r	E.	Am.												
39	Foster	l.	F.	y.	j. v.	rg	r	L.	Am.											
40	George the Fourth	m.	F.	y.	m.j.r	r	M.	Am												
41	Grosse Mignonne <i>Royal Kensington.</i>	l.	F.	w.	s.j.h.	rg	r	M.	F.											
42	Haine's Early Red	m.	F.	g.	s. j.	rg	r	V. E.	Am.											
43	Hale's Early	m.	F.	w.	m.j.r	rg	r	V. E.	Am.											
44	Harker's Seedling	l.	F.	y.	s. j.	rg	r	M.	Am.											
45	Heath Cling	l.	C.	g.	s.j.h.	r	V. L.	Am.												
46	Hill's Chili	m.	F.					Am.												
47	Honeywell	m.	F.	w.	s. j.			E.	Am.											
48	Hoover's Late Heath																			
49	Hyslop Cling	l.	C.	w.	m.j.r	r	V. L.	Am.												
50	Indian Blood Cling	l.	C.	y.	j. v.	r	L.	Am.												
51	Indian Blood Freestone	l.	F.					Am.												
52	Incomparable	l.	C.	w.	m. j.	r	L.	Am.												
53	Jacques	l.	F.	y.	j. v.	r	M.	Am.												
54	Kerrick's Heath <i>Heath Freestone.</i>	l.	F.	g.	j. v.	r	L.	Am.												
55	Keypoint White	l.	F.	w. r.	m. j.	r	V. L.	Am.												
56	Lady Parham	m.	F.	g.	j. v.	r	V. L.	Am.												
57	LaGrange	l.	F.	w.	s.j.h.	r	V. L.	Am.												
58	Large Early York	m.	F.	w.	s.j.h.	rg	r	V. E.	Am.											
59	Large White Cling	l.	C.	w.	s. j.	rg	r	L.	Am.											
60	Late Red Rareripe	l.	F.	w.	s.j.h.	rg	r	M.	Am.											
61	Late Admirable	v.l.	F.	y. g.	m. h.	rg	r	M.	F.											
62	Lemon Cling	l.	C.	y.	j. v.	r	L.	Am.												
63	Leopold I <i>Leopold Freestone.</i>	l.	F.	y.	j. v.	r	M.	F.												
64	Malta	l.	F.	g.	m.j.r.	r	M.	F.												
65	Mammoth Freestone	v.l.	F.																	
66	Mitchell's Mammoth	l.	C.	w.	m. j.	r	L.	Am.												
67	Molden's White	l.	F.	w.	s. j.	r	L.	Am.												
68	Montgomery's Late	l.	F.	w. r.	m. j.	r	L.	Am.												
69	Morris White	m.	F.	w.	m.j.r	r	M.	Am.												
70	Mountain Rose	m.	F.	w.	s. j.	rg	r	M.	Am.											
71	Noblesse	l.	F.	w.	s. j.	r	M.	F.												
72	Old Mixon Free	l.	F.	g.	s.j.h.	rg	r	M.	Am.											
73	Old Mixon Cling	l.	C.	w.	m.j.r	rg	r	M.	Am.											
74	Pavie de Pomponne	l.	C.	w.	m. j.	r	L.	F.												
75	Petite Imperial	l.	F.	w.	m.j.v	r	L.	Am.												
76	Picquett's Late	l.	F.	y.	s. j.	r	M.	Am.												
77	President	l.	F.	w.	m.j.r	rg	r	M.	Am.											
78	Prince of Wales	l.	F.	w.	m. j.	r	M.	F.												
79	Princess of Wales	l.	F.	w.	m.j.v	rg	r	M.	F.											
80	Pucelle de Malines	l.	F.	w. r.	m. j.	r	M.	Am.												
81	Raymond Cling	l.	C.																	
82	Red Cheek Melocoton	l.	F.	y.	j. v.	rg	r	M.	Am.											
83	Reeves' Favorite	l.	F.	y. r.	m. j.	rg	r	M.	Am.											
84	Richmond	m.	F.	w.	m. j.	r	M.	Am.												
85	Rodman's Cling	l.	C.	w.	j. v.	r	L.	Am.												
86	Royal George	m.	F.	w.	m.j.r	r	E.	F.												
87	Salway	l.	F.	y. r.	m. j.	r	M.	Am.												
88	Scott's October	m.	C.	y.			V. L.													
89	Shockley's Early																			
90	Smock	l.	F.	y.	j. v.	r	L.	Am.												
91	Snow	m.	F.	w.	s. j.	r	M.	Am.												

66 Resembles Heath Cling, but later.

NUMBER.	and 49 ^o	II.—CENTRAL DIVISION. Between 35 and 42 ^o	III, SOUTH DIV. b. 35 and 35
28	Minnesota.		
29	Dakota.		
30	Montana.		
31	Wyoming.		
32	Idaho.		
33	Washington.		
34	Oregon.		
35	Pennsylvania.		
36	New Jersey.		
37	Delaware.		
38	Maryland & D.C.		
39	Virginia.		
40	North Carolina.		
41	Ohio.		
42	Indiana.		
43	West Virginia.		
44	Kentucky.		
45	Tennessee.		
46	Illinois.		
47	Iowa.		
48	Missouri.		
49	Nebraska.		
50	Kansas.		
51	Colorado.		
52	Utah.		
53	Nevada.		
54	California.		
55	South Carolina.		
56	Georgia.		
57	Alabama.		
58	Florida.		
59	Indian Territory.		
60	Arkansas.		
61	Mississippi.		
62	Louisiana.		
63	Texas.		
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65	Arizona.		
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NUMBER.	NAMES.	DESCRIPTION.						I.—NORTH. 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.	
92	Snow's Orange	m.	F.	y.	m. j.	r.	M.	Am.													
93	Stump the World	l.	F.	w.	s. j. h.	g.	L.	Am.													
94	Sturtevant	m.	F.	y.	s. j. h.	g.	M.	Am.													
95	Strawberry	m.	F.	w.	m. j.	r.	M.	Am.													
96	Susquehanna	l.	F.	y.	s. j. v.	g.	M.	Am.													
97	Tippecanoe	l.	C.	y.	j. v.	r.	L.	Am.													
98	Troth's Early	m.	F.	w.	s. j.	g.	E.	Am.													
99	Tuskena Cling																				
100	Van Zandt's Superb	m.	F.	w.	m. j. r.	g.	M.	Am.													
101	Ward's Late Free	l.	F.	w.	r. j. s.	r.	L.	Am.													
102	Washington Cling	m.	C.	y. r.	m. j.	r.	L.	Am.													
103	Wheeler's Early	s.	F.	w. r.	m. j.	r.	V. E.	Am.													
104	White Imperial	m.	F.	w.	m. j. r.	g.	E.	Am.													
105	Yellow Alberge	m.	F.	y.	s. j.	g.	E.	F.													
106	Yellow Rareripe	l.	F.	y.	j. v.	g.	E.	Am.													
107	Yellow St. John	l.	F.	y.	s. j.	g.	V. E.	Am.													
	<i>Platt's Flat's St. John.</i>																				

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.—NORTH. 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.	v. g.	F. M.	E. A.	H.													
3	Andrews	l.	p.	y.	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.	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 Bosc	l.	p.	y. r.	b.	F. M.	L. A.	B.	†												
10	Beurre Clairgeau	l.	p.	y. r.	v. 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.	v. 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.	ro. b. 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.	v. g.	F.	L. S.	F.													
17	Beurre Hardy	l.	ob. p.	y. g.	v. g.	F. M.	E. A.		†												

6 Not profitable for market.

NUMBER.	NAMES.	DESCRIPTION.						I.—NORTH 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.	
18	Beurre Langelier	m.	ob. p.	y. r.	v. 95.	F. M.	W.	F.													
19	Beurre Precose	m.	ob. p.	y. r.	v. 95.	F. M.	Z.	F.													
20	Beurre Superfin	m.	r. p.	y. r.	v. 95.	F.	A.	F.													
21	Bloodgood	m.	r.	y. r.	v. 95.	F.	A.	Am.													
22	Bonne de Puits Ansault	m.	ob. p.	y. r.	b.	F.	L. S.	F.													
23	Brandywine	m.	r. ob.	y. 95.	v. 95.	F. M.	Z.	Am.													
24	Brialmont	l.	ob. p.	y. r.	v. 95.	F. M.	A.	B.													
25	British Queen	l.	ob. p.	y. r.	v. 95.	F. M.	A.	En.													
26	Buffum	m.	r. o. p.	y. 95.	v. 95.	M.	E. A.	Am.													
27	Caen de France	m.	ob. p.	y. r.	v. 95.	F. M.	W.	F.													
28	Catillac	l.	r. a. p.	y. r.	v. 95.	K. M.	W.	F.													
29	Chambers	m.	ob. v.	y.	v. 95.	F. M.	Z.	Am.													
30	Clapp's Favorite	l.	ob. o. p.	y. 95.	v. 95.	F. M.	Z.	Am.													
31	Columbia	l.	r. o. p.	y. r.	v. 95.	M. K.	W.	Am.													
32	Dallas	l.	ob. p.	y. 95.	v. 95.	F. M.	L. A.	Am.													
33	Dana's Hovey	s.	r. ob. p.	y. 95.	v. 95.	F.	W.	Am.													
34	Dearborn's Seedling	s.	r. p.	y.	v. 95.	F.	S.	Am.													
35	Dix	l.	ob. p.	y.	b.	F. M.	L. A.	Am.													
36	Dr. Bachman (local)							Am.													
37	Doctor Reeder	s.	r. o. p.	y. r.	b.	F.	L. A.	Am.													
38	Doctor Lindley	m.	r. ob.	y. 95.	v. 95.	F.	E. A.	F.													
39	Doyenne Boussock	l.	r. o. p.	y. r.	v. 95.	F. M.	E. A.	B.													
40	Doyenne d'Alencon	m.	r. p.	y. r.	v. 95.	F. M.	W.														
41	Doyenne du Comice	l.	r. o. p.	y. 95.	v. 95.	F. M.	L. A.	F.													
42	Doyenne d'Ete	s.	r. o. p.	y. 95.	v. 95.	F.	S.	B.													
43	Duchesse d'Angouleme	l.	ob. o. p.	y. r.	v. 95.	F. M.	A.	F.													
44	Duchesse de Bordeaux	m.	r.	y. r.	v. 95.	M.	W.	F.													
45	Duchesse Precocce	l.	p. y. r.	y. 95.	v. 95.	F. M.	E. A.	F.													
46	Easter Beurre	l.	r. ob. p.	y. r.	v. 95.	F.	W.	B.													
47	Eastern Belle	m.	ob. p.	y. r.	v. 95.	F.	E. A.	Am.													
48	Emile d'Heyst	l.	ob. p.	y. r.	b.	F.	L. A.	B.													
49	Flemish Beauty	l.	r. ob. p.	y. 95.	v. 95.	F. M.	E. A.	B.													
50	Foster's Seckel	s.	ob. p.	y. r.	b.	F. M.	E. A.	Am.													
51	Frederick Clapp	m.	r. ob. p.	y.	b.	F. M.	E. A.	Am.													
52	Fulton	s.	r. ob.	y. r.	v. 95.	F.	A.	Am.													
53	Golden Beurre of Bilboa	m.	p.	y.	v. 95.	F.	E. A.														
54	Glout Moreceau	l.	ob. p.	y.	v. 95.	L. A.															
55	Goodale	l.	ob. p.	y. 95.	v. 95.	F. M.	A.	Am.													
56	Gray Doyenne	m.	r.	y. r.	b.	F. M.	L. A.	F.													
57	Harris	m.	ob. o. p.	y. r.	v. 95.	F.	E. A.	Am.													
58	Helen Gregoire	m.	r. o. p.	y. 95.	v. 95.	F.	E. A.	F.													
59	Henkel	l.	r. ob. p.	y. r.	v. 95.	F.	E. A.	B.													
60	Hosenschenck	m.	r. ob.	y.	v. 95.	M.	S.	Am.													
	<i>Moore's Poutal.</i>																				
61	Howell	l.	r. p.	y. 95.	v. 95.	F. M.	E. A.	Am.													
62	Jalousie de Fontenay Vendee	m.	r. a. p.	y. r.	v. 95.	F. M.	A.	F.													
63	Jamiette	m.	r. ob.	y. r.	v. 95.	F. M.	W.														
64	John Williams	m.			v. 95.		W.	Am.													
65	Josephine de Malines	m.	r. ob. p.	y. r.	v. 95.	F. M.	W.	F.													
66	Julienne	s.	r. ob.	y.	v. 95.	F. M.	S.														
67	Kingsessing	l.	ob. p.	y.	v. 95.	F. M.	E. A.	Am.													
68	Kirtland	m.	r. ob.	y. r.	v. 95.	F. M.	E. A.	Am.													
69	Knight's	m.	r. ob.	y.	v. 95.	M.	A.	Am.													
	<i>Knight's Seedling.</i>																				
70	Lawrence	m.	r. o. p.	y. r.	v. 95.	F. M.	W.	Am.													
71	Louise Bonne de Jersey	l.	ob. p.	y. 95.	v. 95.	F. M.	E. A.	F.													
72	Madeleine	m.	p.	y. 95.	v. 95.	F. M.	S.	F.													
73	Madame Andre Leroy	l.	ob. o. p.	y. r.	v. 95.	F.	E. A.	F.													
74	Madame Eliza	l.	r. a. p.	y. r.	v. 95.	F. M.	A.	B.													
75	Madame Treyve	m.	r. o. p.	y. r.	v. 95.	F.	L. S.	F.													
76	Manning's Elizabeth	s.	ob. p.	y. r.	v. 95.	F.	S.														
77	Marie Louise	l.	p.	y. r.	v. 95.	F.	A.	B.													
78	McLaughlin	l.	ob. p.	y. 95.	v. 95.	F. M.	W.	Am.													
79	Merriam	m.	r. ob.	y. r.	v. 95.	F. M.	A.	Am.													
80	Mount Vernon	m.	r. o. p.	y. r.	v. 95.	F. M.	L. A.	Am.													
81	Napoleon	l.	ob. p.	y.	v. 95.	M.	A.	B.													
82	Nouveau Poiteau	l.	p.	y.	v. 95.	M.	L. A.	B.													

37 Delicious, but too small to meet the present market wants.
 56 Fails in Eastern States.
 63 An old variety; very healthy and productive.

65 The finest late winter melting pear, where it succeeds.
 70 A hardy tree; valuable.
 71 Very productive and profitable.

72 Some say liable to blight.
 73 A capital pear, but unreliable.
 78 Hardy and promising.
 79 Valuable for market.

Number.	and 19	II—CENTRAL DIVISION Between 35° and 42°	III, SOUTH DIV. Bet. 35° and 35°
18	Minnesota.		
19	Dakota.		
20	Montana.		
21	Wyoming.		
22	Idaho.		
23	Washington.		
24	Oregon.		
25	Pennsylvania.		
26	New Jersey.		
27	Delaware.		
28	Maryland & D. C.		
29	Virginia.		
30	North Carolina.		
31	Ohio.		
32	Indiana.		
33	West Virginia.		
34	Kentucky.		
35	Tennessee.		
36	Illinois.		
37	Iowa.		
38	Missouri.		
39	Nebraska.		
40	Kansas.		
41	Colorado.		
42	Utah.		
43	Nevada.		
44	California.		
45	South Carolina.		
46	Georgia.		
47	Alabama.		
48	Florida.		
49	Indian Territory.		
50	Arkansas.		
51	Mississippi.		
52	Louisiana.		
53	Texas.		
54	New Mexico.		
55	Arizona.		

46 Requires very high cultivation.

52 A hardy, productive tree.

54 Unreliable at the North.

NUMBER.	NAMES	DESCRIPTION.						1.—NORTH. 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.
83	Onondaga <i>Seab's Orange.</i>	l.	ob. p.	y. g.	v. g.	F. M.	L. A.	Am.	*			*	*	*	*	*	*	*	*	*
84	Osband's Summer	s.	r. p.	y. g.	v. g.	F.	S.	Am.	†			*	*	*	*	*	*	*	*	*
85	Ott	s.	r.	y. g.	v. g.	F.	S.	Am.				*	*	*	*	*	*	*	*	*
86	Paradis d'Automne	l.	r. a. p.	y. r.	v. g.	F.	E. A.	B.	*			*	*	*	*	*	*	*	*	*
87	Passe Colmar	l.	r. o. p.	y. r.	v. g.	M.	W.	B.				*	*	*	*	*	*	*	*	*
88	Petit Marguerite	m.	ob. p.	y. g.	b.	F.	S.	F.				*	*	*	*	*	*	*	*	*
89	Pinneo or Boston	s.	r. ob.	y. g.	v. g.	S.	S.	Am.				*	*	*	*	*	*	*	*	*
90	Pound <i>Belle Angeraine, Winter Belle, Ucedale's St. Germain.</i>	l.	p.	y.	v. g.	K. M.	W.					*	*	*	*	*	*	*	*	*
91	Pratt	m.	ob. p.	y. r.	v. g.	M.	E. A.	Am.			†	*	*	*	*	*	*	*	*	*
92	Reading	l.	ob. p.	y. r.	v. g.	F. M.	W.	Am.				*	*	*	*	*	*	*	*	*
93	Rostiezer	s.	p.	y. g.	b.	F.	S.				*	*	*	*	*	*	*	*	*	*
94	Rutter	m.	r. ob.	y. g.	v. g.	F. M.	A.	Am.				*	*	*	*	*	*	*	*	*
95	St. Ghislain	m.	r.	y. g.	v. g.	F. M.	E. A.	B.				*	*	*	*	*	*	*	*	*
96	St. Michael Archangel	l.	r. p.	y. g.	v. g.	F. M.	A.	F.				*	*	*	*	*	*	*	*	*
97	Seckel	s.	r.	y. g.	b.	F. M.	A.	Am.	*			*	*	*	*	*	*	*	*	*
98	Sheldon	m.	r.	y. g.	v. g.	F. M.	A.	Am.				*	*	*	*	*	*	*	*	*
99	Souvenir du Congres	l.	p. y. r.	y. g.	v. g.	F. M.	S.	F.				*	*	*	*	*	†	*	*	*
100	Sterling	m.	r.	y. g.	v. g.	F. M.	E. A.	Am.				*	*	*	*	*	*	*	*	*
101	Stevens' Genesee	l.	r.	y. g.	v. g.	F. M.	E. A.	Am.	†			*	*	*	*	*	*	*	*	*
102	Supreme de Quimper	m.	r. p.	y. g.	v. g.	F.	S.	B.				*	*	*	*	*	*	*	*	*
103	Therese Appert	m.	ob. o. p.	y. r.	v. g.	F.	L. S.	F.				*	*	*	*	*	*	*	*	*
104	Triomphe de Jodoigne	l.	ob. p.	y. g.	v. g.	F. M.	A.	B.				*	*	*	*	*	*	*	*	*
105	Tyson	m.	r. a. p.	y. g.	b.	F.	S.	Am.				*	*	*	*	*	*	*	*	*
106	Upper Crust (local)	m.	r.	v. g.	poor.	S.	S.	Am.				*	*	*	*	*	*	*	*	*
107	Urbaniste	m.	p.	y. g.	v. g.	F. M.	A.	B.				*	*	*	*	*	*	*	*	*
108	Vicar of Winkfield <i>Le Cure.</i>	l.	p.	y.	v. g.	K. M.	W.	F.	*			*	*	*	*	*	*	*	*	*
109	Washington	m.	ob. o. p.	y.	v. g.	F. M.	E. A.	Am.				*	*	*	*	*	*	*	*	*
110	White Doyenne <i>Virgalieu.</i>	m.	ob. p.	y. g.	b.	F. M.	A.	F.				*	*	*	*	*	*	*	*	*
111	Wilbur	s.	r.	y. r.	v. g.	F.	E. A.	Am.				*	*	*	*	*	*	*	*	*
112	Willermoz	l.	ob. p.	y. r.	v. g.	M.	L. A.	B.				*	*	*	*	*	*	*	*	*
113	Winter Jonah	l.	r.	y. g.	v. g.	F. M.	W.	Am.				*	*	*	*	*	*	*	*	*
114	Winter Nelis	m.	ob. p.	y. r.	b.	F. M.	W.	B.				*	*	*	*	*	*	*	*	*
115	Windsor <i>Summer Bell.</i>	l.	p.	y.	v. g.	M.	S.					*	*	*	*	*	*	*	*	*

83 The more known the more esteemed.

XV.—PLUMS.

The columns explain: SIZE—l., large; m., medium; s., small. FORM—r., roundish; o., oval; r. o., roundish oval; o. ob., oval obovate. COLOR—p., purplish or very dark; r., reddish or copper color; y., yellow; g. y., greenish yellow; y. r., yellowish with shades or spots of red. QUALITY—g., good; v. g., very good; b., best. USE—F., family; M., market. SEASON—E., early; M., medium; L., 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	Admiral																			
2	Bavay's Green Gage <i>Rois Charles de Baray.</i>	l.	r.	g. y.	b.	F.	L.	F.	*	*	*	*	*	*	*	*	*	*	*	*
3	Belgian Purple	l.	r. o.	g. y.	v. g.	F. M.	M.	F.				*	*	*	*	*	*	*	*	*
4	Bleeker's Gage	m.	r. o.	y.	v. g.	F. M.	M.	Am.				*	*	*	*	*	*	*	*	*
5	Blue Imperatrice	m.	o. ob.	p.	v. g.	F. M.	L.	F.				*	*	*	*	*	*	*	*	*
6	Boddart's Green Gage	l.	r.	g. r.	v. g.	F. M.	M.	F.				*	*	*	*	*	*	*	*	*
7	Bradshaw	l.	o. ob.	r. p.	g.	M.	M.	Am.?	*			*	*	*	*	*	*	*	*	*
8	Brill																			
9	Bryanstone Gage	m.	o.	y. r.	v. g.	F.	L.	F.				†				†				

and 49.		II.—CENTRAL DIVISION—Between 35° and 42°.		III.—SOUTH. DIV.—Bet. 28° and 35°.	
NUMBER.	ORIGIN.	NUMBER.	ORIGIN.	NUMBER.	ORIGIN.
90	Minnesota.	91	Ohio.	100	California.
91	Dakota.	92	Indiana.	101	South Carolina.
92	Montana.	93	West Virginia.	102	Georgia.
93	Wyoming.	94	Kentucky.	103	Alabama.
94	Idaho.	95	Tennessee.	104	Florida.
95	Washington.	96	Illinois.	105	Indian Territory.
96	Oregon.	97	Iowa.	106	Arkansas.
97	Pennsylvania.	98	Missouri.	107	Mississippi.
98	New Jersey.	99	Nebraska.	108	Louisiana.
99	Delaware.	100	Kansas.	109	Texas.
100	Maryland & D. C.	101	Colorado.	110	New Mexico.
101	Virginia.	102	Utah.	111	Arizona.
102	North Carolina.	103	Nevada.		
103	Ohio.	104	California.		
104	Indiana.	105	South Carolina.		
105	West Virginia.	106	Georgia.		
106	Kentucky.	107	Alabama.		
107	Tennessee.	108	Florida.		
108	Illinois.	109	Indian Territory.		
109	Iowa.	110	Arkansas.		
110	Missouri.	111	Mississippi.		
111	Nebraska.	112	Louisiana.		
112	Kansas.	113	Texas.		
113	Colorado.	114	New Mexico.		
114	Utah.	115	Arizona.		
115	Nevada.				
	California.				
	South Carolina.				
	Georgia.				
	Alabama.				
	Florida.				
	Indian Territory.				
	Arkansas.				
	Mississippi.				
	Louisiana.				
	Texas.				
	New Mexico.				
	Arizona.				

90 One of the largest and most beautiful melting pears; very promising.

105 A hardy tree.
110 One of the best, but variable in the Eastern and Middle States.

111 Of rare excellence; requires age ere profitable.
115 Of poor quality, but profitable for market.

XV.—PLUMS.

The columns explain. SIZE—l., large; m., medium; s., small. FORM—r., roundish; o., oval; r. o., roundish oval; o. ob., oval obovate. COLOR—p., purplish or very dark; r., reddish or copper color; y., yellow; g. y., greenish yellow; y. r., yellowish with shades or spots of red. QUALITY—g., good; v. g., very good; b., best. USE—F., family; M., market. SEASON—E., early; M., medium; L., late. ORIGIN—Am., American; F., Foreign.

and 49.		II.—CENTRAL DIVISION—Between 35° and 42°.		III.—SOUTH. DIV.—bet. 28° and 35°.	
NUMBER.	ORIGIN.	NUMBER.	ORIGIN.	NUMBER.	ORIGIN.
1	Minnesota.	1	Ohio.	1	California.
2	Dakota.	2	Indiana.	2	South Carolina.
3	Montana.	3	West Virginia.	3	Georgia.
4	Wyoming.	4	Kentucky.	4	Alabama.
5	Idaho.	5	Tennessee.	5	Florida.
6	Washington.	6	Illinois.	6	Indian Territory.
7	Oregon.	7	Iowa.	7	Arkansas.
8	Pennsylvania.	8	Missouri.	8	Mississippi.
9	New Jersey.	9	Nebraska.	9	Louisiana.
10	Delaware.	10	Kansas.	10	Texas.
11	Maryland & D. C.	11	Colorado.	11	New Mexico.
12	Virginia.	12	Utah.	12	Arizona.
13	North Carolina.	13	Nevada.		
14	Ohio.	14	California.		
15	Indiana.	15	South Carolina.		
16	West Virginia.	16	Georgia.		
17	Kentucky.	17	Alabama.		
18	Tennessee.	18	Florida.		
19	Illinois.	19	Indian Territory.		
20	Iowa.	20	Arkansas.		
21	Missouri.	21	Mississippi.		
22	Nebraska.	22	Louisiana.		
23	Kansas.	23	Texas.		
24	Colorado.	24	New Mexico.		
25	Utah.	25	Arizona.		
26	Nevada.				
27	California.				
28	South Carolina.				
29	Georgia.				
30	Alabama.				
31	Florida.				
32	Indian Territory.				
33	Arkansas.				
34	Mississippi.				
35	Louisiana.				
36	Texas.				
37	New Mexico.				
38	Arizona.				

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.—NORTH. 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	Chinese	v. l.	ob.	y.	h. t.	K.	L.	F.												
4	Portugal	v. l.	ob. p.	y.	t.	M. K.	E.	F.								*	*	*	*	*
5	Rea's Seedling	l.	r. ob. p.	y.	h. t.	M. K.	E.	Am.								*	*	*	*	*

3 Large and valuable in the South, in strong soils.

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.—NORTH. 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.	v. g.	M.	M.	Am.												
2	Belle de Palluau	l.	c.	r.	v. g.	F.	M.	F.												
3	Belle de Fontenay	l.	c.	r.	v. g.	F.	L.	F.												
4	Brandywine <i>Susqueen.</i>	m.	r. c.	r.	g.	F. M.	M.	Am.												
5	Catawissa	m.	r.	p.	v. g.	F.	L.	Am.												
6	Clarke	m.	r.	r.	v. g.	F. M.	E.	Am.												
7	Davison's Thornless	m.	r.	b.	v. g.	F. M.	E.	Am.												
8	Eastoll	l.	r. c.	r.	v. g.	F.	M.	F.			*	*	*	*	*	*	*	*	*	*
9	Franconia	l.	r. c.	p.	v. g.	F. M.	M.	F.												
10	French	m.	r.	r.	v. g.	F.	M.	Am.												
11	Golden Thornless	m.	r.	y.	v. g.	F.	M.	Am.			*	*	*	*	*	*	*	*	*	*
12	Golden Cap	m.	r.	y.	v. g.	F.	M.	Am.			*	*	*	*	*	*	*	*	*	*
13	Herstine	l.	ob. b.	r.	v. g.	F. M.	M.	Am.												
14	Hornet	l.	c.	r.	v. g.	F. M.	M.	F.												
15	Hudson River Antwerp	l.	c.	r.	v. g.	F. M.	M.	Am.												
16	Imperial Red	m.	r.	r.	v. g.	F. M.	M.	Am.												
17	Knevett's Giant	l.	ob. c.	r.	b.	F.	M.	F.			*	*	*	*	*	*	*	*	*	*
18	Merveille de 4 Saisons <i>October Red.</i>	l.	r. c.	r.	v. g.	F.	L.	F.												
19	McCormick <i>Mammoth Cluster.</i>	m.	ob. c.	b.	v. g.	F. M.	L.	Am.			*	*	*	*	*	*	*	*	*	*
20	Miami	m.	r.	b.	v. g.	F. M.	M.	Am.												
21	Orange	l.	c.	y.	b.	F.	M.	Am.												
22	Ohio Everbearing	m.	c.	b.	v. g.	F. M.	L.	Am.			*	*	*	*	*	*	*	*	*	*
23	Philadelphia	m.	r.	p.	v. g.	M.	M.	Am.												
24	Purple Cane	m.	r.	p.	v. g.	M.	M.	Am.			*	*	*	*	*	*	*	*	*	*
25	Turner	m.	r.	r.	v. g.	F. M.	M.	Am.												

3 Best of autumnal bearing sorts.
5 Deep, rich soil, or not profitable.

18 Not profitable.
19 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.

	and 49°	II.—CENTRAL DIVISION—Between 35° and 42°	III.—SOUTH DIV.—b. 28° & 35°
Number.	Minnesota.	Virginia.	South Carolina.
1	Dakota.	North Carolina.	Georgia.
2	Montana.	Ohio.	Alabama.
3	Wyoming.	Indiana.	Florida.
4	Idaho.	West Virginia.	Indian Territory.
5	Washington.	Kentucky.	Arkansas.
6	Oregon.	Tennessee.	Mississippi.
7	Pennsylvania.	Illinois.	Louisiana.
8	New Jersey.	Iowa.	Texas.
9	Delaware.	Missouri.	New Mexico.
10	Maryland & D.C.	Nebraska.	Arizona.
11	Virginia.	Kansas.	
12	North Carolina.	Colorado.	
13	Ohio.	Utah.	
14	Indiana.	Nevada.	
15	West Virginia.	California.	
16	Kentucky.	South Carolina.	
17	Tennessee.	Georgia.	
18	Illinois.	Alabama.	
19	Iowa.	Florida.	
20	Missouri.	Indian Territory.	
21	Nebraska.	Arkansas.	
22	Kansas.	Mississippi.	
23	Colorado.	Louisiana.	
24	Utah.	Texas.	
25	Nevada.	New Mexico.	
	California.	Arizona.	

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.

	and 49°	II.—CENTRAL DIVISION—Between 35° and 42°	III.—SOUTH DIV.—b. 28° and 35°
Number.	Minnesota.	Virginia.	South Carolina.
1	Dakota.	North Carolina.	Georgia.
2	Montana.	Ohio.	Alabama.
3	Wyoming.	Indiana.	Florida.
4	Idaho.	West Virginia.	Indian Territory.
5	Washington.	Kentucky.	Arkansas.
6	Oregon.	Tennessee.	Mississippi.
7	Pennsylvania.	Illinois.	Louisiana.
8	New Jersey.	Iowa.	Texas.
9	Delaware.	Missouri.	New Mexico.
10	Maryland & D.C.	Nebraska.	Arizona.
11	Virginia.	Kansas.	
12	North Carolina.	Colorado.	
13	Ohio.	Utah.	
14	Indiana.	Nevada.	
15	West Virginia.	California.	
16	Kentucky.	South Carolina.	
17	Tennessee.	Georgia.	
18	Illinois.	Alabama.	
19	Iowa.	Florida.	
20	Missouri.	Indian Territory.	
21	Nebraska.	Arkansas.	
22	Kansas.	Mississippi.	
23	Colorado.	Louisiana.	
24	Utah.	Texas.	
25	Nevada.	New Mexico.	
	California.	Arizona.	

21 Valued for family use.
22 Not profitable.

23 Very productive.
24 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.—NORTH 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	Burr's New Pine	m.	P.	b. r.	r. c.	s.	E.	Am.										*		
4	Boston Pine	l.	H.	d. c.	r. c.	f.	M.	Am.	*			*	*	*	*	*	*	*	*	*
5	Black Defiance	l.	H.	d. r.	r. o. c.	f.	M.	Am.			*									
6	Charles Downing	l.	H.	d. s.	c.	f.	M.	Am.	*			*	*	*	*	*	*	*	*	*
7	Col. Cheney	l.	P.	b. s.	r. ov.	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	Forest Rose	l.	H.	b. s.	c.	f.	M.	Am.												
12	French's Seedling	m.	H.	b. s.	r. c.	s.	M.	Am.												
13	Green Prolific	l.	P.	l. c.	r. o. c.	s.	M. L.	Am.										*	*	*
14	Hovey's Seedling	l.	P.	b. s.	r.	f.	M.	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.	r. o. c.	f.	M.	Am.								†				
23	Nicanor	m.	H.	b. s.	r. o. c.	f.	E. L.	Am.		*	*	*	*	*	*	*	*	*	*	*
24	President Wilder	l.	H.	b. s.	r. o. c.	f.	M.	Am.		*	*	*	*	*	*	†	*	*	*	*
25	Russell's Prolific	l.	P.	r.	g.	s.	M.	Am.	*	*	*	*	*	*	*	†	*	*	*	*
26	Seth Boyden	l.	H.	r.	o. c.	f.	M.	Am.	*	*	*	*	*	*	*	*	*	*	*	*
27	Sterling	l.	P.	b. s.	c.	f.	M.	Am.						*	*	*	*	*	*	*
28	Triomphe de Gand	l.	H.	l. c.	o. c.	f.	M.	F.	*	*	*	*	*	*	†	*	*	*	*	*
29	Victoria	l.	H.	l. c.	r. c.	f.	M.	F.	*	*	*	*	*	*	*	*	*	*	*	*
30	Wilson's Albany	l.	H.	d. c.	r. c.	f.	E. L.	Am.	*	*	*	*	*	*	*	*	*	*	*	*

3 Exquisite flavor; valued for home use.
 14 An old and highly valued sort.
 19 Only valued for the amateur.

23 One of the best early sorts, and fine for canning.
 29 Esteemed as a family sort.

30 Poor quality; unrivaled as a market sort in most parts of the country.

NUMBER.	NAMES.		ORIGIN.	I. - NORTH DIVISION Between 24°											
	BOTANICAL.	COMMON.		Nova Scotia.	New Brunswick.	Maine.	New Hampshire.	Vermont.	Massachusetts.	Rhode Island.	Connecticut.	New York.	Ontario.	Michigan.	Wisconsin.
48	<i>Olea Europæa</i>	Olive													
49	<i>Phoenix dactylifera</i>	Date Palm													
50	<i>Photinia Japonica</i>	Loquat													
51	<i>Podophyllum peltatum</i>	May Apple	N.												
52	<i>Prunus (Amygdalus) communis</i>	Almond													
53	<i>Prunus (Amygdalus) Persica</i>	Peach													
54	<i>Prunus Armeniaca</i>	Apricot													
55	<i>Prunus domestica</i>	Garden Plum		*	*	*	*	*	*	*	*	*	*	*	
56	<i>Prunus maritima</i>	Beach Plum	N.												
57	<i>Prunus Americana</i>	Wild Red and Yellow Plum	N.												
58	<i>Prunus Chicasa</i>	Chickasaw Plum	N.												
59	<i>Prunus cerasus</i>	Garden Red Cherry (Morello, &c.)		*	*	*	*	*	*	*	*	*	*	*	
60	<i>Prunus avium</i>	Bird Cherry (Heart, &c.)					*	*	*	*	*	*	*	*	
61	<i>Prunus pumila</i>	Dwarf Cherry	N.												
62	<i>Psidium pyrifera</i>	Guava													
63	<i>Punica Granatum</i>	Pomegranate													
64	<i>Pyrus communis</i>	Pear													
65	<i>Pyrus Malus</i>	Apple		*	*	*	*	*	*	*	*	*	*	*	
66	<i>Pyrus prunifolia</i>	Siberian Crab		*	*	*	*	*	*	*	*	*	*	*	
67	<i>Pyrus coronaria</i>	American Crab	N.												
68	<i>Pyrus rivularis</i>	Oregon Crab	N.												
69	<i>Ribes Grossularia</i>	English Gooseberry		*	*										
70	<i>Ribes hirtellum</i>	Houghton Gooseberry, &c.	N.												
71	<i>Ribes rubrum</i>	Red Currant		*	*	*	*	*	*	*	*	*	*	*	
72	<i>Ribes nigrum</i>	Black Currant		*	*	*	*	*	*	*	*	*	*	*	
73	<i>Rubus occidentalis</i>	Black-cap Raspberry	N.												
74	<i>Rubus Idaeus</i>	European Raspberry		*	*	*	*	*	*	*	*	*	*	*	
75	<i>Rubus strigosus</i>	Wild Red Raspberry	N.												
76	<i>Rubus villosus</i>	Blackberry		*	*	*	*	*	*	*	*	*	*	*	
77	<i>Rubus Canadensis</i>	Dewberry	N.				*	*	*	*	*	*	*	*	
78	<i>Shepherdia argentea</i>	Buffalo Berry	N.												
79	<i>Tamarindus Indica</i>	Tamarind													
80	<i>Vaccinium Pennsylvanicum</i>	Dwarf Early Blueberry	N.			*	*	*	*	*	*	*	*	*	
81	<i>Vaccinium Canadense</i>	Canada Blueberry				*	*	*	*	*	*	*	*	*	
82	<i>Vaccinium corymbosum</i>	Swamp Blueberry	N.			*	*	*	*	*	*	*	*	*	
83	<i>Vaccinium tenellum</i>	Southern Blueberry	N.			*	*	*	*	*	*	*	*	*	
84	<i>Vaccinium macrocarpa</i>	American Cranberry	N.							*	*	*	*	*	
85	<i>Vitis vinifera</i>	European Grape													
86	<i>Vitis Labrusca</i>	Northern Fox Grape (Concord, &c.)	N.		*	*	*	*	*	*	*	*	*	*	
87	<i>Vitis astivalis</i>	Summer Grape (Herbemont, &c.)	N.							*	*	*	*	*	
88	<i>Vitis cordifolia</i>	Winter Grape (Clinton, &c.)	N.	*	*	*	*	*	*	*	*	*	*	*	
89	<i>Vitis vulpina</i>	Bullace Grape (Muscadine, &c.)	N.		*	*	*	*	*	*	*	*	*	*	
90	<i>Zizyphus sativus</i>	Jujube													

The above "Catalogue of Native and Introduced Fruits and Nuts" was a favorite idea with Mr. FLAGG, the late lamented Secretary of our Society, and was prepared by him just previous to his decease. Had he lived he would have made some alterations, but as this is now rendered impossible, it is presented as left by him.

Number.	and 49°.	II. CENTRAL DIVISION Between 35° and 42°.		III. SOUTH DIV. Bet. 28° and 35°.	
47	Minnesota.				
48	Dakota.				
49	Montana.				
50	Wyoming.				
51	Idaho.				
52	Washington.				
53	Oregon.				
54	Pennsylvania.				
55	New Jersey.				
56	Delaware.				
57	Maryland & D.C.				
58	Virginia.				
59	North Carolina.				
60	Ohio.				
61	Indiana.				
62	West Virginia.				
63	Kentucky.				
64	Tennessee.				
65	Illinois.				
66	Iowa.				
67	Missouri.				
68	Nebraska.				
69	Kansas.				
70	Colorado.				
71	Utah.				
72	Nevada.				
73	California.				
74	South Carolina.				
75	Georgia.				
76	Alabama.				
77	Florida.				
78	Indian Territory.				
79	Arkansas.				
80	Mississippi.				
81	Louisiana.				
82	Texas.				
83	New Mexico.				
84	Arizona.				

In Memoriam.

WILLARD C. FLAGG, Secretary of the American Pomological Society, is dead!

Just as the closing pages of this volume were going to press, the sad duty devolves on me of announcing the decease of the beloved and esteemed Secretary of our Association. Mr. FLAGG died at his farm near Moro, Illinois, on Saturday, March 30th, 1878. He was elected Secretary of our Society at the meeting in Boston, September, 1873, since which he has continued to discharge the duties of his office with great ability and fidelity. Few men of his age have held more offices of honor and trust. He was remarkable for his activity, enterprise and executive ability.

It may be well said of Mr. FLAGG that he has been a faithful public servant. Few have done more to aid in developing our natural resources, especially in the West. Nor were his official duties confined to this section; he was not only Secretary of the American Pomological Society, but President of the National Agricultural Congress. He was also President of the Illinois Farmers' Association; first United States Collector of Customs for the Alton district; a member of various scientific and agricultural associations, and one of the most lucid and facile writers on agricultural subjects in the country. He was also a trustee, at various times, of a number of state institutions, including the Illinois Agricultural University; a Senator from his district to the State Legislature during the sessions of 1869-1871, and the special sessions of 1872.

In fact, the sphere of his activity was so extended we cannot make a full record of them here. But he has left us a worthy example of what one may do for the advancement of the public welfare and the interests of the associations with which he is connected.

At a time so many are seeking to perform their work, with little regard to its quality, Mr. FLAGG'S love of thoroughness in all that he did, was such as to impress itself upon all who knew him, as one of his most prominent characteristics, and his industry enabled him to accomplish a vast amount of work. "But" (in the words of his memorial in the *Prairie Farmer*, of which he was for many years the horticultural editor), "above all he will be remembered by those who knew him intimately as a man of strict honor and integrity, who loved justice for the sake of justice, and whom no one could swerve from what he considered the path of duty."

MARSHALL P. WILDER,

President of the American Pomological Society.

BOSTON, April 8, 1878.

INDEX.

	PAGE.		PAGE.
Adams, J. W., Western Massachusetts Fruit Report	105	Bevan	142
Address of President Wilder	15	Big Rambo	97, 121
Almond	132, 134	Big Red	46
Apples—Catalogue of	vi	Black Apple	123
Classification of Prof. J. Beal	57	Blue Bloom	44
Discussion of	28	Blue Pearmain	101, 112, 114, 115
Exhibited	37	Bonum	28
In Arkansas	141	Bourassa	89
California	134	Bowen's Seedling	43
Connecticut	107	Brooke's Pippin	144
Florida	139	Brown's Favorite	45
Georgia	138	Brigg's Auburn	100
Iowa	127	Buckingham	120, 142
Maine	100	Buff	120
Massachusetts	103	Buncombe	62
" Western	105	Burnham Sweet	107
Mississippi	142	Bushnell	39
New Hampshire	100, 101, 102	Canada Red	30, 100, 102, 103, 107
Nova Scotia	99	Carolina Red June	28, 39, 129
Ohio	121	Carpenter's N. C.	46
Oregon	115	Chandler	62
Pennsylvania	117	Chenango Strawberry	28, 103, 107, 127, 131
Rhode Island	107	Clark's Orange	31, 44
Utah	131	" Seedling	46
Washington Territory	112	Clermont	121
West Virginia	123	Clots	46
Wisconsin	109	Clyde Beauty	99
Varieties Discussed	28	Cogswell	107
Aleron's Early	127	Cole's Quince	128
Alexander	82, 134	Colvert	99, 109
American Golden Russet	107	Cooper's Early White	84
" Summer Pearmain	39, 100, 142	Cooper's Market	28, 62
Archie	123, 126	Cornell's Fancy	28
Arkansas Queen	62	Cracking	28
Autumn Seek-no-further	62	Cullasaga	28
" Swaar	83	Cumming's Rambo	97
Bailey Sweet	82, 109	Dan Pry	126
Baker	107, 123	Danvers' Winter Sweet	28
Baldwin—47, 62, 84, 93, 100, 101, 102, 103, 105, 106, 107, 112, 114, 115, 117, 123.		Davidson	123, 126
Baldwin Betweeny	47	Dawes—Dawes' Porter, Dawes' Nonsuch	39
Baltimore	97	Dean	100
Baltzley	28	Delong	44
Barn Apple	126	Deseret Pippin	132
Belden Sweet	107	Dockham Russet	44
Bellflower	83	Dominic	84
Belvidere	97	Duchess of Oldenburg—28, 62, 82, 103, 106, 109, 127	
Ben Davis	62, 84, 109, 123, 127, 129, 131, 134	Dutch Mignonne	112
Benoni	101, 103, 127		
Berks County Golden Pippin	45		
" " Mammoth	45		

	PAGE.
Dyer	28, 100, 126, 127
Dykeman	45
Early Brook	45
Early Chandler	127
Early Harvest—62, 93, 100, 102, 107, 112, 123, 129, 131 134, 142.	
Early Joe	109, 131
Early Red Margaret	107, 123
Early Strawberry	28, 107, 123, 134
Edgar Red Streak	144
Edwards Early	28
Egg Top	123
English Russet	83
English Seedling	46
Equinately	37, 38, 120, 142
Esopus Spitzenberg	84, 103, 115, 117, 131, 134
Ewalt	28
Excel	107
Fall or Late Red Streak	45
Fall Orange	109
Fallowater	28, 83, 123
Fall Pippin	107, 115, 117, 120, 123
Fall Queen, or Haas	28
Fall Stripe	109
Fall Wine	109
Famense	28, 82, 84, 89, 102, 103, 107, 109
Fenner Sweet	144
Five Square	126
Franklin Sweet	100
Fourth of July	28
Foundling	101
Fulton	129
Garden Royal	101, 104
Gate, or Waxen	115, 117
Gilpin	28
Gloria Mundi	96, 97, 112, 115
Goff	28, 127
Golden Pippin	131
Golden Russet	62, 83, 109, 112
Golden Russet, American	107
Golden Russet of Massachusetts	144
Golden Russet of New York	28
Golden Swart	62
Golden Sweet	99, 107, 112
Goodale	144
Goyeau	89
Gravenstein—100, 103, 104, 106, 107, 112, 115, 131, 142	
Greening	106
Green Sweet	107
Grimes' Golden	28, 84
Grindstone	123
Grosh	97
Grosh's Mammoth	97
Gros Pommier	127
Haas	82, 83, 109, 127
Hall	28
Hawley	107
Hanes' Seedling	39, 40
Hamilton	28
Hartland Beauty	44
Haskell Sweet	83
Hawthornden	83

	PAGE.
Hewes' Crab	62
Higgins' Red Winter	94, 131
Hightop	123
Hix's White	144
Hoadley	97
Holland Pippin	84, 134
Hoover	28
Horse	28, 62, 92, 142
Hoyt Sweet	100
Hubbardston Nonsuch—28, 100, 102, 103, 104, 105 106, 107, 112.	
Hunt Russet	28, 144
Hurlbut	105, 106, 107
Hutchinson's Pippin	129
Imperial Rambo	39
Iron Apple	47
Janet	109
Jeffers	29
Jefferson County	29
Jennetting	62
Jersey Sweet	57
Jewett's Fine Red	29, 100, 101, 103
Jiles	95
Jonathan	29, 101, 134
Josephine	96, 97
Julian	29, 62, 142
Junaluskee	62
Juneating	123
Kansas Bellflower	43
Kansas Keeper	44
Kansas Spitzenberg	43
Keswick Codlin	29, 83, 123
Key's Fall	29
Kincaid	121
King of Tompkins County	101, 102, 106, 112, 123
Kimlead	39
King's Sweeting	100
Kirkbridge White	29, 109
Ladies' Sweet	103, 107
Lady Apple	29, 115, 117, 123
Lallier	44
Lansingburg	29, 127
Large Summer Rambo	97
Large Yellow Bough	103, 104
Large Yellow May of Tennessee	144
Late Baldwin	47
Late Red Streak	45
Lawver	29
Le Sieur	96
Lewis Green	46
Lumber Twig	29, 62, 92, 131
Little Red Romanite	116
Lothringer Rambour	97
Loudon (Loudoun) Pippin	29
Loux Roseau	89
Macomber	100
Maiden's Blush	83, 84, 103, 123, 129, 134
Major	29
Malinda	46
Mammoth Greening	46
Mann Apple	128
Mason	123

	PAGE.		PAGE.
May Seek no further	109	Pomme Royal	100, 107
McAffee's Nonsuch	29	Porter	30, 39, 57, 100, 101, 102, 103, 106, 107, 131
McHenry Pippin	97	Porter's Nonsuch	15
Mellinger	118	Pound, N. C.	46, 97
Melon (Norton's)	29	Price's Sweet	82
Melon	96	Pride of the Valley	93, 94
Mexico	107	Primate	29, 99, 100, 101, 107, 128
Michael Henry Pippin	29	Prior's Red	30, 123, 127
Milam	29	Queen of the North	44
Milding	101	Queen of the Orchard	45
Miller's Cherokee	94, 131	Quincy Early	123, 126
Monarch	83	Rambo	39, 62, 83, 84, 114, 115, 123, 127, 129, 134
Monmouth Pippin	115, 116, 117	Rambour Lorraine	97, 121
Monstrous Pippin	97, 123	Rawles' Genet—30, 82, 83, 84, 115, 116, 117, 123, 129, 131	
Monstrous Rambo	97	Red Astrachan—30, 39, 57, 62, 83, 84, 90, 102, 103, 106	
Montalivet	96	107, 109, 111, 112, 115, 117, 128, 131, 134, 142	
Moon	39, 40	Red Calville	89
Moore's Sweet	107	Red Check Pippin	112, 115
Mother	99, 101, 102	Red Face	44
Mountain Chief	94, 95	Red and Gray Vandevere	62
Mammy Apple	126	Red June	62, 84, 92, 131, 142
Musgrave's Cooper	97	Red Reserve	62
Muskmelon	47	Red Romanite	117
Naylor Rambo	97	Red Streak	123, 126
Newtown Pippin—29, 47, 62, 114, 115, 116, 117, 121		Red Stripe	126
123, 131, 134, 144.		Red Warrior	62
Newtown Spitzenberg	62, 103	Red Winter	126, 131
New York Pippin	129	Rhode Island Greening—30, 102, 103, 107, 112, 123, 131	
New York Vandevere	112	134.	
Nickajack	29, 134	Ribston Pippin	83, 84
Nodhead	101	Robertson's Superb	30
Northern Spitzenberg	103	Rock Pippin	30
Northern Spy—29, 62, 83, 100, 101, 106, 107, 109, 112		Rolfe	100
115, 117, 118, 123, 134.		Rome Beauty	62, 123
Nova Scotian	29, 47	Roman Stem	83
Ohio Beauty	97	Roseau	89
Ohio Nonpareil	128	Royal Pearmain	95
Oldenburg	127	Roxbury Russet—93, 103, 107, 117, 123, 127, 131, 134	
Old Nonsuch	102	Santa	144
Orange Sweet	106	Santa Clara King	46
Ortley	115, 117	Saunderson	39
Orton's Red Winter	94	Seedling of Duchesse of Oldenburg	46
Orton's Seedling	131	Seek no-further	57, 109, 123
Otoe Red Streak	128	Seymour Black	126
Osawatomie	43	Shannon	62
Palmer Greening	107	Shell	123
Paradise Sweet	109	Shiawasse Beauty	30
Peaked Sweeting	141	Shockley	126, 127, 128, 142
Peck's Pleasant	100, 107, 134	Smith's Cider	30, 118, 129, 134
Pearmain	101	Smokehouse	30
Peerless	62	Sops of Wine	109
Peffer's Golden	45	Spitzenberg	93, 94, 114, 123, 131
Peffer's Winter	44	Sprang	45
Pemnock	62, 123, 127	Springhouse	45
Perry	83	Spring Lake	94
Perry Russet	107, 109, 128	Stark	30, 99
Pewaukee	29, 107, 109	Starkey	100
Pharr's Seedling	46	Stearn's Winter Greening	45
Pickaway Rambo	97	Stephenson's Seedling	47
Plumb's Cider	82, 109	Stevenson Pippin	62
Pomme d'Api	123	Stevenson's Winter	62, 142
Pomme Grise	29, 89	St. Lawrence	82, 99, 109

	PAGE.		PAGE.
Striped Winter	126	Lady Elgin	106
Summer Chase	95	Marengo	106
Summer Hagloe	30	Montreal	106
Summer King	129	Transcendent	31, 106, 82
Summer Queen	30, 39, 62, 131	Red	30
Summer Queen of Missouri	46	Apricots—Catalogue of	xviii
Summer Pearmain	100	In Arkansas	141
Summer Pippin	109, 123	California	134
Summer Pound Royal	30	Kansas	129
Summer Sweet Paradise	123	Mississippi	142
Summer Rambo	96, 97	Utah	132
Swaar	112, 115, 129	West Virginia	124
Swayzie Pomme Grise	99	Varieties Discussed	31
Sweet Bough	57, 62, 83, 102, 106, 107, 126, 131, 142	Breda	124, 129, 141
Sweet June	83, 109	Carrington	94
Sweet Rambo	97	Early Golden	31, 124, 141
Switz Pippin	45	Gates	94
Talman's Sweet	30, 57, 83, 84, 100, 106, 107	Large Early	31
Tetofsky	82, 90, 105, 106, 109, 127	Moorpark	124, 141
Tewksbury Winter Blush	30	Peach	134
Todd's Seedling	46	Roman	124
Try Me	126	Royal	124, 134
Tulpehocken	123	St. Ambrose	31
Twenty Ounce Apple	30, 115, 120, 131	Turkey	124
Utter	82, 109	Arkansas Fruit Report	141
Utter's Red	82	Atkinson, Natt, North Carolina Fruit Report	120
Vandevere	83, 123	Augur, P. M., Connecticut Fruit Report	107
Virginia Greening	127, 131	Bananas	66, 140
Wagner	101, 102	Barry, P., General Fruit Committee	98
Walbridge	109, 144	Barry, P., Evening Meetings at Carrollton House	13
Waldorn	123, 126	Bass, W. E., Montana Fruit Report	111
Wallace Kitchen	46	Bateham, M. B., Ohio Fruit Report	120
Washington	107	Berkmans, P. J., Georgia Fruit Report	137
Washington Strawberry	131	Bishop, P. P., Florida Fruit Report	139
Wealthy	30, 82, 127	Blackberries—Catalogue of	xviii
Webber	62	In Arkansas	141
Western Beauty	39, 97, 124, 128	Florida	139
Westfield Seek-no-further	83, 107	Iowa	127
Wheeler	45	Kansas	129
White Astrachan	82	Mississippi	142
White Calville	89	Oregon	115
White Pippin	127	Varieties Discussed	31
White Seek-no-further	101	Ancient Briton	141
White Winter Pearmain	83, 84, 89, 114, 115, 117, 128, 131, 134	Barnard	127
Williams	101, 102, 103, 104	Dorchester	31
Williams' Favorite	131, 142	Holcomb	31
Wine	102	Kittatinny	31, 65, 115, 129, 139, 141
Winesap	30, 62, 83, 84, 112, 114, 115, 117, 129	Lawton	31, 115, 129, 139
Winter Black	47	Snyder	31
Winter Sweet Paradise	123, 126	Taylor	31
Winthrop Greening	100	Wilson's Early	31, 139, 143
Yates	142	Bliss, C. C., Arkansas Historical Sketch	61
Yellow Bellflower	62, 83, 84, 107, 112, 115, 123, 128, 134	Bourne, J. H., Rhode Island Fruit Report	106
Yellow June	92	Brackett, G. B., Iowa Fruit Report	126
Yellow Newtown Pippin	116, 117, 134	Brown, C. E., Nova Scotia Fruit Report	99
York Imperial	118	Brown, S. W., Vancouver Fruit Report	114
York Stripe	118	Bryant, Arthur, Illinois Historical Sketch	67
Crabs—Catalogue of	xvi	Burnet, Rev. R., Historical Sketch Quebec and Ont.	88
Varieties discussed		Bush, Isidor, Grape Rot, Missouri	28, 58
Hyslop	31	Canning and Drying of Fruits	20

	PAGE.		PAGE.
Cashew, (<i>Anacardium Occidentale</i>)	66	General Fruit	27
Cassell, Wm. H., Mississippi Fruit Report	142	Native Fruit	39
Cherrimoyer, (<i>Anona cherimolia</i>)	66	Nominations	13, 26
Cherries—Catalogue of	xx	Record of Fruits Exhibited	13, 36
In California	124	Resolutions	37
Connecticut	107	Revision of Catalogue	27
Iowa	127, 128	Revision of Constitution	13, 26
Massachusetts	104	Room	27
Oregon	115	Synonyms	47, 96
Rhode Island	107	Reports from Arkansas	141
Utah	132	California	133
Washington Territory	112	Connecticut	107
West Virginia	124	Dakota	111
Varieties Discussed	32	Florida	139
Adams Seedling	112	Georgia	137
Archduke	134	Iowa	126
B. Bigarreau	115	Kansas	128
Belle de Choisy	107, 124	Maine	100
Belle d'Orleans	107	Massachusetts	103
Bigarreau Rose Dragon	96	Mississippi	142
Black Eagle	32, 107	Montana	111
Black Heart	32, 107	Nebraska	128
Black Republican	112, 115	New Hampshire	100
Black Tartarian	107, 112, 114, 115, 124, 134	Nova Scotia	99
Brilliant	113	Ohio	120
Buttner's Yellow	32	Oregon	115
Common Pie Cherry	32	Pennsylvania	117
Coe's Transparent	107, 112	Rhode Island	106
Downer	104	South Carolina	137
Downer's Late Red	107	Utah	131
Early Purple Guigne	107	Vancouver	114
Early Richmond	32, 62, 96, 107, 127, 128	Virginia	118
Elton	107, 112	Washington Territory	112
Empress Eugenie	32	Western Massachusetts	105
English Morello	62, 127, 128	West North Carolina	120
Gov. Wood	32, 107, 112, 113, 134	West of Cascade Mountains	113
Gridley	107	West Virginia	122
Hovey	32	Wisconsin	108
Kentish	112, 115	Connecticut, Delegates	26
Late Duke	115	Constitution and By-laws as amended	9
Late Kentish	32, 112	Copp, J., New Hampshire Fruit Report	101
May Duke	115, 134	Cross-Fertilization	21
Monstrucuse de Mezel	134	Cureulio	122
Montmorency	96	Currants—Catalogue of	xxii
Montmorency Ordinaire	96	In Connecticut	107
Napoleon	112, 114, 124, 134	Kansas	129
Noir Precoce de Straus	96	Oregon	115
Norfolk	104	Rhode Island	107
Reine Hortense	32, 107	Varieties Discussed	32
Richardson	32	Black Naples	32
Royal Ann	112, 114, 115	Cherry	32, 107, 115
Russian	32	La Versaillaise	107
Utah Hybrid	95	Lee's New Black	32
Yellow Spanish	112, 124	Prince Albert	32
New Varieties	32	Red Dutch	115
Circular	5	White Dutch	115
Codling Moth	110, 122	White Grape	107, 115
Codrington, C., Florida, Historical Sketch	65	Davis, Franklin, Virginia Fruit Report	119
Committee, on Award of Wilder Medals	13, 38	Delaware, Delegate	26
Credentials	13, 26	Dewey, D. S., Connecticut Fruit Report	107
Foreign Fruits	8		

	PAGE.		PAGE.
District of Columbia, Delegates	26	Black Prince	134
Doe, Charles, New Hampshire Fruit Report	101	Brighton	36, 38, 50
Downing, Charles, Fruits Exhibited	38	Burr's Seedling Concord	44
Downing, Charles, Report on Synonyms	97	Cannon Hall Muscat	36
Eggers, A., Washington Territory Fruit	113	Catawba	58, 82
Engle, H. M., Pennsylvania Fruit Report	118	Champion	50
English Walnuts	134	Chasselas Fontainbleau	134
Ellwanger, George, Foreign Fruit Committee	96	Clinton	43, 50, 63, 102, 127
Essays	6, 47, 54	Concord—37, 50, 58, 102, 103, 104, 107, 108, 109, 115, 127, 128, 139, 142	
Excursion to Riverside	51	Creveling	63, 102, 115, 139
Extension of Fruit Culture and Crops	16	Croton	102, 103, 139
Figs.	37, 66, 132, 134, 142	Cynthiana	58
California	131	Damascus	134
Florida	139	Delaware—43, 63, 66, 102, 103, 107, 109, 115, 128, 139, 141	
Mississippi	162	Seedling	43
Utah	132	Diana	115, 139
Varieties:		Doder	127
Celestial	139, 142	Duchess	36
Large Purple	142	Early Dawn	36, 43
Fire Blight	110	Early Victor	44
Foster, Suel, Iowa Fruit Report	127	Elvira	50, 139
Foster, Suel, Iowa, Historical Sketch	69	Eumelan	102
Fruits, Miscellaneous	66	Flame Tokay	134
Furnas, R. W., Nebraska, Historical Sketch	82	Flowers	141
General Fruit	27	Gen. Marmora	43
Georgia Delegates	26	Golden Berry	43
Gold, T. S., Connecticut Fruit Report	107	Gros Coleman	132
Gooseberries—Catalogue of	xxii	Hartford Prolific—43, 44, 63, 66, 102, 107, 108, 114, 138	
In Nova Scotia	99	Herbemont	139
Oregon	115	Hybrid Concord	36
Varieties	53	Iona	63, 102, 107, 115
Champion of Oregon	115	Isabella	58, 82, 107, 114, 132, 134
Downing	53	Israella	43, 62
Early Kent	53	Ives	63, 65, 66, 107, 108, 127, 139, 141, 142
Green Walnut	99	Jarvis	95
Houghton	53, 115, 129	Jamesville	50, 109, 128
Yellow Amber	99	Lady	139
Grape Rot in Missouri	28, 58	Lady Downes	132
Grapes—Catalogue of	xxiv	Martha	139
In Arkansas	141	Mary Wylie	43
Connecticut	108	Merrimac	103
California	124	Mission	93, 114
Florida	139	Moore's Early	36, 104
Georgia	139	Muscat of Alexandria	134
Iowa	127	Hamburg	43, 132
Massachusetts	104	of Newburgh	36, 43
Mississippi	142	No. 305, Rickett's	36
New Hampshire	102	No. 331, Rickett's	36
Pennsylvania	118	Norton's	58, 62, 141
Rhode Island	107	Perkins	63
Utah	132	Peter Wylie	139
West Virginia	124	Pope's Hamburgh	36
Varieties Discussed:		Prolific Scuppermong, Hybrid No. 4	42
Adirondack	50	Purple Bloom	43
Agawam	103	Rebecca	50
Allen's Hybrid	103	Red Frontignan	43
Arnold's Hybrids	102	Reine de Nice	132
Berekmans	43, 139	Rio Virgen	95
Black Eagle	139	Rogers' Hybrid	63, 102, 109, 139
Black Ferrara	134	Royal Mascadine	115
Black Hamburg	93, 111, 131	Salem	103

	PAGE.		PAGE.
Schraidt	50	Masters J. H., Nebraska Fruit Report	128
Scuppernong	43, 66, 85, 139, 141, 142	Matthews, S. J., Hist. Sketch—Arkansas	63
Seedless Corinth	134	McCaman, J. D., Montana Fruit Report	111
Senasqua	50, 139	McLaughlin, H., Fruits Exhibited	38
Silver Dawn	43	McLaughlin, H., Maine Fruit Report	100
St. Augustine	66, 139	Meeker, N. C., Hist. Sketch—Colorado	64
Sultana	132	Meeting for 1879 discussed	11, 27
Tender Pulp	141	Members, Biennial	12
Thomas	66, 141	Members, Life	10
Verdelho	132	Miller, Henry, Oregon Fruit Report	115
Washington	127	Moody, E., on Wilder Medal	38
Welcome	38	Mulberries	132
White Malaga	134	Downing's	132
Wilder	103	English Black	132
Worden	50, 102, 103	Necrology	23
Zinfindal	132	Nectarines, Catalogue of	xxvi
Growth, expansion, etc., of the Society	15	In Mississippi	142
Guavas	139	Red Roman	142
Harris, J. S., Minnesota Hist. Sketch	81	New Jersey Delegates	26
Harrison, A. W., on Wilder Medal	38	New York Delegates	26
Hayes, J. M., New Hampshire Fruit Report	102	Nomenclature	21
Horticultural Sketches of Fruit Culture	61	Officers of the Society	7
In Arizona	61	Ohio Delegates	26
Arkansas	61	Olcott, J. B., Connecticut Fruit Report	107
Colorado	64	Olives	66
Florida	65	Oranges, Catalogue of	xxviii
Illinois	67	Culture of, in Florida	65, 140
Iowa	69	Varieties discussed:	
Kansas	70	Arcadia	140
Michigan	73	Buena Vista	140
Minnesota	81	Dancy's Tangierine	140
Nebraska	82	Magnum Bonum	140
North Carolina	84	Navel	140
Ohio	86	Nonpareil	140
Provinces—Quebec, Ontario	88	Old Vine	140
Tennessee	91	Osceola	140
Utah	93	Seville Sweet	65, 140
Virginia	95	Seville Sour	65
Hovey, C. M., Vice-President, elected to preside	13	Tangierine	140
Response to Mr. Perot	13	Tardiff (Harts)	140
Howard, A. W., Dakota Fruit Report	111	Papaw (Papaya vulgaris)	66
Howsley, Wm. M., Kansas Fruit Report	128	Pathology of Cultivated Plants	59
Hoyt, E., Connecticut Fruit Report	107	Peaches, Catalogue of	xxviii
Hoyt, J. P., Arizona Hist. Sketch	61	In Arkansas	141
Illinois Delegate	26	Florida	139
Improvement in Packing and Transportation	19	Georgia	138
Indiana Delegate	26	Kansas	129
Introduction and Dissemination of New Fruits	18	Massachusetts	101
Insects Injurious—Scolytus pyri	53	Mississippi	112
Iowa Delegate	26	Ohio	115
Jambosine (Jambosa Makapa)	66	Oregon	115
James, T. P., Treasurer's Report	14	Pennsylvania	117
Johnson, J. E., Hist. Sketch—Utah	93	Rhode Island	107
Jujube (Zyziphus vulgaris)	66	Utah	131
Lawton, C. D., Washington Territory Fruit Report	112	Virginia	119
Leighton, G. F. B., Hist. Sketch—Virginia	95	Washington Territory	112
Lewis, J. R., Walla Walla Fruit Report	114	Western Massachusetts	106
Lyon, T. T., Hist. Sketch—Michigan	73	West Virginia	124
Lemons and Limes, Culture of	66, 141	Varieties discussed	34
Maine Delegates	26	Alexander	34, 47, 118, 119, 121, 131, 138, 141, 142
Mango (Mangifera indica)	66		
Manning, R., Massachusetts Fruit Report	103		
Maryland Delegate	26		
Massachusetts Delegates	26		

	PAGE.		PAGE.
Annie Wylie	41, 48	Morris White	35
Amelia	34, 85	Mountain Rose	35, 138
Amsden	34, 41, 47, 48, 119, 121, 129, 138, 141, 142	Newington Free	85
Austin's Red	34	Noblesse	35
Baldwin's Late	34, 41	Old Mixon Cling	85, 142
Barnard	34, 108	Old Mixon Free	35, 85, 107, 108
Beatrice	35, 47, 48, 119, 120, 138, 142	Olga	41
Beer's Smock	34	Orange	95
Bordeaux Cling	34	Peen-To	41
Brigg's May	41, 134, 135	Piequets Late	35
Chinese Cling	34, 85, 138, 142	Pomponé	85
Coe's Early Red	107	Pucelle de Maline	96
Cole's Early Red	34	Reeve's Favorite	35
Columbia	34, 142	Rose	89
Coolidge's Favorite	34, 107	Spring Lake	95
Cora	41	Saunders	129
Coxe's Cling	112	Scott's October	36
Crawford's Early—35, 85, 94, 104, 106, 107, 108, 115, 134, 138, 142		Salway	35, 141
Crawford's Late	34, 85, 107, 108, 142	Small Smock	34
Dagmar	96	Smock	35
Deming's Orange	34	Snow	107
Dr. Jones	44	Steadly	48
Duff Yellow	138	Strawberry	134
Early Admirable	85	Stump the World	36, 107, 108
Early Beatrice	39, 119	Susquehanna	36
Early Louise	35, 119, 138, 142	Thomas Cling	85
Early Rivers	35, 112, 119, 138, 142	Tillotson	36, 85, 134, 138, 142
Early Victoria	96	Tippecanoe	36
Early York	114, 115	Troth's Early	36, 107, 142
Flat Peach of China	41	Tuskana Cling	36
Flaita's St. John	138	Van Zandt's Superb	36
Flewellen	35	Warder	129
Foster	35, 104, 106, 141	Ward's Late Free	36, 35, 134
Gale's Early	138	Washington Cling	85
General Taylor	138	White Imperial	36
George IV	85, 134, 142	Wilder	129
Golden Cling	115	Yellow Raricape	107
Golden Dwarf	37	Yellow Alberge	36
Haine's Early Red	35	Yellow St. John	36, 142
Hale's Early	35, 48, 112, 115, 119, 121, 129, 138, 142	Zelia	41
Heath Cling	35, 48, 142		
Hill's Chili	108	Pear Blight	122
Honeywell	48, 129	Pears, Catalogue of	xxxii
Indian	95	In Arkansas	141
Italian Dwarf	37	California	134
Jacques	35	Connecticut	107
Kenrick's Heath	35	Georgia	138
Lady Parham	35, 41	Iowa	128
La Grange	85	Massachusetts	104
Large Early Mignonne	96	Kansas	129
Large White	85	Mississippi	142
Large Early York	35, 107, 108, 124	New Hampshire	101, 102, 103
Late Admirable	35	Oregon	115
Leatherby's Late	48	Rhode Island	107
Leopold I.	35	Utah	131
Levy Peach	48	Western Massachusetts	104
Louise	35	West Virginia	124
Mitchell's Mammoth	35	Varieties discussed:	
Morris Cling	85	Admiral Farragut	104
Morris Favorite	35	Annie Wylie	38
		Bartlett—37, 38, 49, 85, 93, 94, 102, 103, 104, 107, 112, 114, 115, 116, 124, 129, 131, 134, 138, 141, 142	
		Bell	92

	PAGE.
Belle Lucrative—42, 53, 85, 102, 103, 105, 107, 124, 141, 142	
Beurre Bose	103, 104, 105, 107
Beurre Chirgeau	48, 49, 52, 85, 105, 107, 124
Beurre d'Amanlis	101
Beurre Giffard	85, 101, 102, 103, 107, 141, 142
Beurre d'Anjou—85, 101, 102, 103, 104, 107, 115, 124, 141	
Beurre Diel	85, 141
Beurre Hardy	102
Beurre Superfin	85, 102, 142
Bloodgood	85, 124
Brandywine	102, 141
B. S. Fox	42
Buffum	102, 141, 142
Clapp's Favorite	40, 102, 103, 104, 107, 124, 142
Columbia	48
Dana's Hovey	48, 107
Dearborn's Seedling	103, 107, 124, 142
De Tongres	102
Dix	48
Docteur Lentier	104
Doyenne Boussock	105, 107, 124, 142
Doyenne d'Été	101, 102, 105, 107, 124, 141, 142
Doyenne du Comice	104, 107
Duchesse—37, 38, 63, 85, 95, 102, 103, 104, 105, 107, 124, 129, 138, 142.	
Duchesse Bordeaux	48
Early Butter	112
Easter Beurre	48, 115, 141, 142
Eastern Belle	100
Echasserie	37
Elliott's Early	89
Emile d'Heyst	104
Fall Butter	114
Flemish Beauty—82, 100, 101, 102, 103, 105, 115, 124, 128, 142.	
Fortune	37
Fulton	37, 48
Frederick Clapp	104
Gen. Taylor	37, 38
Glout Morceau	48, 141
Gray Doyenne	49
Henkel	37, 48, 50
Homewood	50
Hosenschenck	48
Howell	49, 102, 103, 107, 142
Kirtland	49, 141
Jefferson	142
Josephine de Malines	85
Julienne	142
Kingsessing	141
Lawrence	42, 49, 101, 102, 103, 105, 107, 124, 141
Louise Bonne	49, 85, 102, 103, 105, 107, 115, 142
Madeleine	49, 105, 112, 115
Manning's Elizabeth	49, 105
Merriam	102
Moore's Pound	107
Mount Vernon	49, 107
Onondaga	49, 102, 105, 107
Osband's Summer	102, 107, 141
Oil	85

	PAGE.
Passé Colmar	37, 115
Paradis d'Automne	101, 102, 107
Petite Marguerite	49
Pitmaston Duchess	50
Pound	92, 115, 124, 136
Pratt	49
President	104
Redfield	94
Rostiezer	101, 102, 107, 124, 141
Rutter	49
Seckel—37, 38, 42, 48, 85, 103, 105, 107, 112, 115, 124, 141.	
Sheldon	49, 102, 103, 105, 107
Souvenir du Congrès	104
Stevens' Genesee	141
St. Germain	37, 95
St. Ghislain	49, 142
St. Michael Archangel	49, 107, 141, 142
Sugar Pear	92
Summer Bergamot	63
Tyson	49, 102, 103, 124, 141
Urbaniste	37, 49, 142
Vicar of Winkfield	105, 107, 112, 124, 141, 142
Washington	49
White Doyenne	49, 114, 115, 141, 142
Wilbur	49
Winter Nclis—37, 63, 85, 102, 104, 105, 107, 112, 114, 115, 124, 134, 142.	
Zoar Beauty	141
Pecan	134
Pennsylvania Delegates	26
Perot, W. H., Invitation by, to visit Riverside	13
Perot, W. H., Welcome by	13
Pine Apple	66
Plumb, J. C., Wisconsin Fruit Report	108
Plums—Catalogue of	xxxvi
In Arkansas	141
Connecticut	107
Mississippi	142
Oregon	115
Pennsylvania	118
Rhode Island	107
Virginia	119
Washington Territory	112
West Virginia	124
Western Massachusetts	107
Varieties Discussed	32
Bingham	124
Bradshaw	112, 124
Canaawa	33
Chickasaw	132, 33, 122, 139, 141, 142
Coe's Golden Drop	107, 112
Columbia	112
Damson	112, 124
Early Harvest	124
Fellenberg	116
Fletcher	124
General Hand	124
German Prune	33, 106, 112, 124
Green Gage	107, 112, 114, 124, 142
Huling's Superb	33, 124
Imperial Gage	107, 124

	PAGE.		PAGE.
Italian Prune	112	Olds	121
Japan Mespilus Japonicus	139	Oregon Black Cap	115
Jefferson	112, 124	Philadelphia	33, 109, 127, 129
Lombard	106, 107, 122	Purple Cane	33
McLaughlin	107	Mammoth Cluster	106, 107, 121, 127, 134
Miner	141	Miami	109, 129
Newman	141	Red Antwerp	115, 121, 143
Orleans	122	Rehama	34
Peach	33, 112, 114, 116	Saunders	104
Pond's Seedling	38, 107	Seneca	128
Prune	114	Susqueeo	34
Rouge Hative de Nitka	96	Thwack	121
Sayers' Favorite	94	Turner	33, 127
Shropshire Damson	33, 122	White Antwerp	115
Smith's Orleans	107	Report of Committee of Foreign Fruit	96
Washington	112, 124	General Fruit Committee	27, 98
Yellow Gage	122, 142	Synonyms	47, 96
Wild Goose	33, 122, 129, 142	Revenue from Fruit Culture	20
Yellow Magnum Bonum	112	Rhode Island Delegate	26
Pomegranates	132	Rose Apple (<i>Jambosa vulgaris</i>)	66
Pomological Literature	22	Sanger, A. T., New Hampshire Fruit Report	102
Prentiss, Prof. A. M., Pathology of Plants	59	Schaffer, W. S., Wilder Medal	38
Proceedings	13	Schaffer, a Telegram to the President	13
Programme of Business	6	Sims, R. M., South Carolina Fruit Report	137
Quinces—Catalogue of	xi	Smith, A., Montana Fruit Report	112
In Connecticut	107	Smith, B. G., chosen Treasurer <i>pro tem.</i>	13
New Hampshire	103	South Carolina Delegate	26
Mississippi	142	Spanish Plum (<i>Spondias Myrobalanus</i>)	66
Oregon	115, 116	Stayman, J., Historical Sketch, Kansas	70
West Virginia	124	Steele, Walter L., North Carolina Historical Sketch	84
Varieties:		Strawberries—Catalogue of	xlii
Apple	107, 115, 124, 134	In Arkansas	141
Orange	103, 115, 124, 142	Connecticut	107
Pear	107	Florida	139
Portugal	134	Georgia	139
Raspberries—Catalogue of	xi	Iowa	127
In Arkansas	141	Massachusetts	104
Iowa	127	Mississippi	142
Kansas	129	Nova Scotia	99
Massachusetts	104	Ohio	121
Mississippi	142	Oregon	115
Rhode Island	107	Western Massachusetts	166
Ohio	121	Rhode Island	107
Oregon	115	Varieties Discussed:	
Western Massachusetts	106	Boston Pine	99
Varieties Discussed	33	Boyd's No. 30	106
Brandywine	33, 34	Brooklyn Scarlet	99
Brinckle's Orange	107	Burr's Pine	121
Catawissa	33	Capt. Jack	50
Clarke	33, 106, 107	Centennial	50
Davison's Thornless	33, 106	Champion	50, 106
Doolittle	33, 106, 107, 127, 128	Charles Downing	99, 106, 107, 141
Early Prolific	34	Col. Cheney	99, 106, 107
Franconia	106	Col. Ellsworth	50
Golden Thornless	32	Crescent Seedling	50, 108
Gregg	121	Cumberland	50
Henrietta	33	Downer's Prolific	127, 141
Herstine	33, 104, 106	Duchess	50
Hudson River Antwerp	33	Duncan	50, 106
Imperial Red	33	Durand's Beauty	50
Naomi	107	Forest Rose	41, 50, 121
Ohio Everbearing	33	Great American	50
		Green Prolific	127

	PAGE.		PAGE.
Hervey Davis	104	Seth Boyden	99, 107
Highland Beauty	50	Sterling	50
Hovey's Seedling	99, 142	Springdale	50
Ida	50	Victoria	50
Jenny Lind	50	Wilson's Albany—66, 99, 106, 107, 109, 115, 127, 129	139, 141, 142.
Jucunda	99, 107, 121		
Kentucky	106, 141	Strentzel, J., California Fruit Report	133
La Constante	50	Strother, David H., West Virginia Fruit Report	123
Lawton's Pine Apple	112	Sugar Apple (<i>Anona squamosa</i>)	66
Lennig's White	99, 142	Table of Native and Introduced Fruits and Nuts	27, xliv
Mary Fletcher	99	Treasurer's Report	14
Mary Stewart	142	Tennessee Delegate	26
Monarch	106	Texas Delegate	26
Monarch of the West	107	Thomas, G. B., Fruits Exhibited, Report	38
Napoleon III	50	Thurston, R., Historical Sketch, Arkansas	62
Nicanor	106	Transou, B. F., Historical Sketch, Tennessee	91
Parmlee's Crescent Seedling	108	Transou, B. F., on Wilder Medal	38
Peabody	50	Tropical Fruits	18
Pioneer	50	Tropical Fruits, Culture of	66
President Lincoln	50	Vasey, Dr. Geo., Origin of the Apple	54
President Wilder	104	Virginia Delegates	26
Pride of the West	50	Wallace, G. B., Utah Fruit Report	131
Pronty	56	Warder, J. A., Historical Sketch, Ohio	86
The Belle	50	Wilder, M. P., Address	15
Triomphe de Gand	99, 106, 107, 115	Wisconsin Delegate	26
Russell's Prolific	99, 107		

